

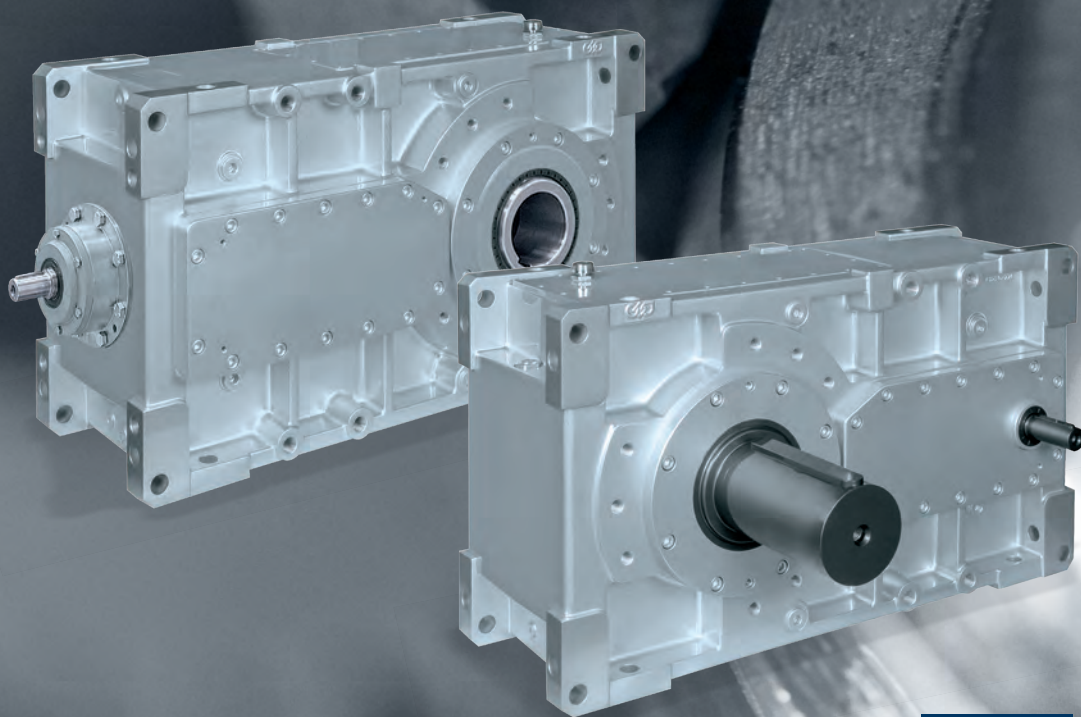
# **Bonfiglioli** **Riduttori**

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## **HDP-HDO series**

Parallel shaft gear units HDP series

Bevel helical gear units HDO series



PRODUCT



 **Bonfiglioli**  
*Forever Forward*





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#### Revisions

Refer to page 338 for the catalogue revision index. Visit [www.bonfiglioli.com](http://www.bonfiglioli.com) to search for catalogues with up-to-date revisions.



## GENERAL INFORMATION

### 1 SYMBOLS AND UNITS OF MEASUREMENT

| Symbols       | Units of Measure     | Description              | Symbols        | Units of Measure | Description  |
|---------------|----------------------|--------------------------|----------------|------------------|--|
| $A_{n_{1,2}}$ | [kN]                 | Permissible axial force  | $P_{TFAN...}$  | [kW]             | Thermal capacity with the contribution of forced ventilation                     |
| $f_s$         | –                    | Service factor           | $P_{TSR}$      | [kW]             | Thermal capacity inclusive of contribution from cooling coil                     |
| $i$           | –                    | Gear ratio               | $P_{TMCRA...}$ | [kW]             | Thermal capacity inclusive of contribution from air/oil exchanger cooling unit   |
| $l$           | –                    | Cyclic duration factor   | $P_{TMCRW...}$ | [kW]             | Thermal capacity inclusive of contribution from water/oil exchanger cooling unit |
| $J$           | [Kgm <sup>2</sup> ]  | Mass moment of inertia   | $R_{c_{1,2}}$  | [kN]             | Calculated radial force  |
| $M_{1,2}$     | [Nm]                 | Torque                   | $R_{n_{1,2}}$  | [kN]             | Permissible overhung load  |
| $Mc_{1,2}$    | [Nm]                 | Calculated torque        | $t_a$          | [°C]             | Ambient temperature  |
| $Mn_{1,2}$    | [Nm]                 | Rated torque             | $t_s$          | [°C]             | Surface temperature  |
| $Mr_{1,2}$    | [Nm]                 | Torque demand            | $t_o$          | [°C]             | Oil temperature  |
| $n_{1,2}$     | [min <sup>-1</sup> ] | Speed                    | $\eta$         | –                | Efficiency   |
| $P_{1,2}$     | [kW]                 | Power                    |                |                  |  |
| $Pn_{1,2}$    | [kW]                 | Rated power              |                |                  |  |
| $Pr_{1,2}$    | [kW]                 | Power demand             |                |                  |  |
| $P_T$         | [kW]                 | Overall thermal capacity |                |                  |  |

<sub>1</sub> value applies to input shaft  
<sub>2</sub> value applies to output shaft






## 2 GENERAL DESIGN FEATURES

Gear units of the HDP and HDO series make optimum use of advanced design features, to offer:


- Top torque density
- Superior performance
- Silent and vibration-free operation
- Total ruggedness and reliability
- Lifetime calculation in accordance with the applicable ISO and AGMA standards
- Extensive customisation through a wide range of options offered in the catalogue

## 3 ALLOWED TEMPERATURE LIMITS

| Symbols       | Description / Condition   | Value (*)     |                   |
|---------------|---|---------------|-------------------|
|               |   | Synthetic Oil | Mineral Oil       |
| $t_a$         | Ambient temperature   |               |                   |
| $t_{au\ min}$ | Minimum operating ambient temperature   | <b>-30°C</b>  | <b>-10°C</b>      |
| $t_{au\ Max}$ | Maximum operating ambient temperature   | <b>+50°C</b>  | <b>+40°C</b>      |
| $t_{as\ min}$ | Minimum storage ambient temperature   | <b>-40°C</b>  | <b>-10°C</b>      |
| $t_{as\ Max}$ | Maximum storage ambient temperature   | <b>+50°C</b>  | <b>+50°C</b>      |
| $t_s$         | Surface temperature   |               |                   |
| $t_{s\ min}$  | Minimum gearbox surface temperature starting with partial load (#)                                  | <b>-25°C</b>  | <b>-10°C</b>      |
| $t_{sc\ min}$ | Minimum gearbox surface temperature starting with full load   | <b>-10°C</b>  | <b>-5°C</b>       |
| $t_{s\ Max}$  | Maximum casing surface temperature during continuous operation (measured next to the gearbox input) | <b>+100°C</b> | <b>+100°C (@)</b> |
| $t_o$         | Oil temperature   |               |                   |
| $t_{o\ Max}$  | Maximum oil temperature during continuous operation   | <b>+95°C</b>  | <b>+95°C (@)</b>  |

(\*) = Refer to the table "Selection of the optimal oil viscosity" for further information about minimum and maximum values of different oil viscosity and for using hydraulic circuits. For values of  $t_a < -20^\circ\text{C}$  and  $t_s, t_o > 80^\circ\text{C}$ , choose (as permitted in the product configuration stage) the sealing type of the most suitable material to the type of application. If needed contact Bonfiglioli Technical Service. 

(@) = Continuous operation it is not advised if  $t_s$  and  $t_o$  range is  $80^\circ\text{C}$  to  $95^\circ\text{C}$ .

(#) = For full load start-up it is recommended to ramp-up and provide for greater absorption of the motor. If needed, contact Bonfiglioli Technical Service. 



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## 4 INSTALLATION

The following installation instructions must be observed:

- Make sure that the gearbox is correctly secured to avoid vibrations. If shocks or overloads are expected, install hydraulic couplings, clutches, torque limiters, etc.
- Before the eventual painting, the machined surfaces and the outer face of the oilseals must be protected to prevent paint drying out the rubber and jeopardising the oil-seal function.
- Components to be keyed on to the gearbox output shafts should be machined to ISO H7 tolerances to prevent mating surfaces jamming and causing irreparable damage to the gearbox during installation. Suitable pullers and extractors should also be used to fit and remove such components. These should be properly secured to the threaded hole at the end of the shafts. The customer is required to verify the mating on the output shaft defining appropriate tolerances according to the torque to be transmitted.
- Mating surfaces must be cleaned and treated with suitable protective products before mounting to avoid oxidation and, as a result, seizure of parts.
- Prior to putting the gear unit into operation make sure that the equipment that incorporates the same complies with the current revision of the Machines Directive 2006/42/CE.
- Before starting up the machine, make sure that oil level conforms to the mounting position specified for the gear unit and viscosity is suitable for the specific application.
- For outdoor installation provide adequate guards in order to protect the drive from rainfalls as well as direct sun radiation.



## 5 LUBRICATION

Refer to the User's Manual available at [www.bonfiglioli.com](http://www.bonfiglioli.com) for indications about checking the oil level and its replacement.

Do not mix mineral oils with synthetic oils and/or different brands.

However, oil level should be checked at regular intervals and topped up as required.

Check monthly if unit operates under intermittent duty, more frequently if duty is continuous.

### 5.1 Selection of the optimal oil viscosity (data relating to Shell Oils)

|                     |                     | Operating ambient temperature [C°] |     |     |  |     |     |     |    |   |    |     |     |     |     |     |     |     |     |     |   |
|---------------------|---------------------|------------------------------------|-----|-----|--|-----|-----|-----|----|---|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
|                     |                     | -40                                | -35 | -30 | -25                                    | -20 | -15 | -10 | -5 | 0 | +5 | +10 | +15 | +20 | +25 | +30 | +35 | +40 | +45 | +50 |   |
|                     |                     | suitability seals check            |     |     | standard seals provided in the catalog |     |     |     |    |   |    |     |     |     |     |     |     |     |     |     |   |
| Splash lubrication  | Mineral oil         | 150 VG                             |     |     |  |     |     |     | *  |   |    |     |     |     |     |     |     |     |     |     |   |
|                     |                     | 220 VG                             | ⊘   | ☎   |  |     |     |     | *  |   |    |     |     |     |     |     |     |     |     | ☎   |   |
|                     |                     | 320 VG                             | ⊘   | ☎   |  |     |     |     |    | * |    |     |     |     |     |     |     |     |     |     | ☎ |
|                     |                     | 460 VG                             | ⊘   | ☎   |  |     |     |     |    |   | *  |     |     |     |     |     |     |     |     |     | ☎ |
|                     | Synthetic oil (PAG) | 150 VG                             |     |     |  | *   |     |     |    |   |    |     |     |     |     |     |     |     |     |     | ☎ |
|                     |                     | 220 VG                             | ⊘   | ☎   |  | *   |     |     |    |   |    |     |     |     |     |     |     |     |     |     | ☎ |
| 320 VG              |                     | ⊘                                  | ☎   |     | *                                      |     |     |     |    |   |    |     |     |     |     |     |     |     |     | ☎   |   |
| Synthetic oil (PAO) | 150 VG              |                                    |     |     | *                                      |     |     |     |    |   |    |     |     |     |     |     |     |     |     | ☎   |   |
|                     | 220 VG              | ⊘                                  | ☎   |     | *                                      |     |     |     |    |   |    |     |     |     |     |     |     |     |     | ☎   |   |
|                     | 320 VG              | ⊘                                  | ☎   |     | *                                      |     |     |     |    |   |    |     |     |     |     |     |     |     |     | ☎   |   |
| Forced lubrication  | Mineral oil         | 150 VG                             |     |     |  |     |     |     |    | * |    |     |     |     |     |     |     |     |     |     |   |
|                     |                     | 220 VG                             | ⊘   | ☎   |  |     |     |     |    | * |    |     |     |     |     |     |     |     |     | ☎   |   |
|                     |                     | 320 VG                             | ⊘   | ☎   |  |     |     |     |    |   | *  |     |     |     |     |     |     |     |     |     | ☎ |
|                     |                     | 460 VG                             | ⊘   | ☎   |  |     |     |     |    |   |    | *   |     |     |     |     |     |     |     |     | ☎ |
|                     | Synthetic oil (PAG) | 150 VG                             |     |     |  |     |     |     | *  | * |    |     |     |     |     |     |     |     |     |     | ☎ |
|                     |                     | 220 VG                             | ⊘   | ☎   |  |     |     |     | *  | * |    |     |     |     |     |     |     |     |     |     | ☎ |
| 320 VG              |                     | ⊘                                  | ☎   |     |  |     |     | *   | *  |   |    |     |     |     |     |     |     |     |     | ☎   |   |
| Synthetic oil (PAO) | 150 VG              |                                    |     |     |  |     |     | *   | *  |   |    |     |     |     |     |     |     |     |     | ☎   |   |
|                     | 220 VG              | ⊘                                  | ☎   |     |  |     |     | *   | *  |   |    |     |     |     |     |     |     |     |     | ☎   |   |
|                     | 320 VG              | ⊘                                  | ☎   |     |  |     |     | *   | *  |   |    |     |     |     |     |     |     |     |     | ☎   |   |

Recommended operating limits

Allowed operating limits. ☎

Forbidden operating limits.

\* = It is recommended to ramp-up and to provide for greater absorption of the motor.

If needed and in the event of impulse loads, contact Bonfiglioli Technical Service. ☎



## 5.2 Lubrication for HDP-HDO series gearboxes

The internal parts of HDP gearboxes are lubricated with a mixed immersion and splash system. Should the output speed be lower than  $1 \text{ min}^{-1}$  or the input speed greater than  $1800 \text{ min}^{-1}$ , please contact Bonfiglioli Technical Service for advise.

In mounting position V5, the top bearings in gearbox sizes HDP 60 to HDP 90 are pre-lubricated with grease and fitted with Nilos seals, unless the order specifies a forced lubrication system with mechanical pump (optional variants OP1, OP2) or electric pump (option MOP).

If HDP 100 to 180 gearboxes have to be installed in mounting position V5, with the output shaft vertical, one of the above mentioned forced lubrication systems must be specified. The actual system should be selected on the basis of speed and/or operating conditions.

These gearboxes are supplied without lubricant. It is the customer's responsibility to fill them with the appropriate amount of oil before start-up.

The internal parts of HDO gearboxes are lubricated with a mixed immersion and splash system. Should the output speed be lower than  $1 \text{ min}^{-1}$  or the input speed greater than  $1800 \text{ min}^{-1}$ , please contact Bonfiglioli Technical Service for advise.

In mounting position V5, the top bearings in gearbox sizes HDO 71 to HD0 95 are pre-lubricated with grease and fitted with Nilos seals.

If HDO 100 to 180 gearboxes have to be installed in mounting position V5 it is required that the order specifies a forced lubrication system with mechanical pump (optional variants OP1, OP2) or electric pump (option MOP).

Depending on the configuration and mounting position, HDO gearboxes may require one of a number of forced lubrication systems described later in this catalogue.

The gearboxes are supplied without lubricant. It is the customer's responsibility to fill them with the appropriate amount of oil before start-up.



## 6 STORAGE

Observe the following instructions to ensure correct storage of the products:

- Do not store outdoors, in areas exposed to weather or with excessive humidity.
- Always place boards, wood or other material between the products and the floor. The gearboxes should not have direct contact with the floor.
- In case of long-term storage all machined surfaces such as flanges, shafts and couplings must be coated with a suitable rust inhibiting product (Tectile 506 EH or equivalent). Furthermore gear units must be placed with the fill plug in the highest position and filled up with oil. Before putting the units into operation the appropriate quantity, and type, of oil must be restored.

## 7 CONDITIONS OF SUPPLY

Gear units are supplied as follows:

- configured for installation in the mounting position specified when ordering;
- tested to manufacturer specifications;
- mating machined surfaces come unpainted;
- nuts and bolts for mounting motors are provided if a flanged motor input is specified.

## 8 PAINT COATING

HDP gearboxes in sizes 60 to 90 and HDO in sizes 71 to 95 are externally and internally painted in oven hardened epoxy resin and polyester powder paint. The painted (ferrous) surfaces of these gearboxes are protected to at least corrosivity class C2 (UNI EN ISO 12944-2). The colour is RAL 7042 grey. A synthetic top coat may be applied later.

HDP and HDO gearbox sizes 100 to 180 are internally and externally spray painted with an epoxy primer, and then externally painted on completion of assembly. These gearboxes are protected to at least corrosivity class C3 (UNI EN ISO 12944-2). The colour is RAL 7042 grey.



## 9 SERVICE FACTOR

Service factors listed here under are empirical values based on AGMA and ISO specifications as well as our experience for use in common applications. They apply for state of the art-designed driven machines and normal operating conditions.

| Application                        | ≤ 10<br>hours/day | > 10<br>hours/day |
|------------------------------------|-------------------|-------------------|
| <b>AGITATORS, MIXERS</b>           |                   |                   |
| Pure liquids                       | 1.25              | 1.50              |
| Liquids and solids                 | 1.25              | 1.50              |
| Liquids - variable density         | 1.50              | 1.75              |
| <b>BLOWERS</b>                     |                   |                   |
| Centrifugal                        | 1.00              | 1.25              |
| Lobe                               | 1.25              | 1.50              |
| Vane                               | 1.25              | 1.50              |
| <b>CLARIFIERS</b>                  | 1.00              | 1.25              |
| <b>CLAY WORKING MACHINERY</b>      |                   |                   |
| Brick press                        | 1.75              | 2.00              |
| Briquette machine                  | 1.75              | 2.00              |
| Pug mill                           | 1.25              | 1.50              |
| <b>COMPACTORS</b>                  | 2.00              | 2.00              |
| <b>COMPRESSORS</b>                 |                   |                   |
| Centrifugal                        | 1.25              | 1.50              |
| Lobe                               | 1.25              | 1.50              |
| Reciprocating, multi-cylinder      | 1.50              | 1.75              |
| Reciprocating, single-cylinder     | 1.75              | 2.00              |
| <b>CONVEYORS - GENERAL PURPOSE</b> |                   |                   |
| Uniformly loaded or fed            | 1.15              | 1.25              |
| - Heavy duty                       |                   |                   |
| Not uniformly fed                  | 1.25              | 1.50              |
| - Reciprocating or shaker          | 1.75              | 2.00              |
| <b>CRANES (*)</b>                  |                   |                   |
| <b>Dry dock</b>                    |                   |                   |
| Main hoist                         | 2.50              | 2.50              |
| Auxiliary hoist                    | 2.50              | 3.00              |
| Boom hoist                         | 2.50              | 3.00              |
| Slewing Drive                      | 2.50              | 3.00              |
| Traction Drive                     | 3.00              | 3.00              |

| Application                  | ≤ 10<br>hours/day | > 10<br>hours/day |
|------------------------------|-------------------|-------------------|
| <b>Trolley Drive</b>         |                   |                   |
| Gantry Drive                 | 3.00              | 3.00              |
| Traction Drive               | 2.00              | 2.00              |
| <b>Industrial duty</b>       |                   |                   |
| Main hoist                   | 2.50              | 3.00              |
| Auxiliary hoist              | 2.50              | 3.00              |
| Bridge and                   | 3.00              | 3.00              |
| Trolley travel               | 3.00              | 3.00              |
| <b>CRUSHER</b>               |                   |                   |
| Stone or ore                 | 2.00              | 2.00              |
| <b>DREDGES</b>               |                   |                   |
| Conveyors                    | 1.25              | 1.50              |
| Cutter head drives           | 2.00              | 2.00              |
| Screen drives                | 1.75              | 2.00              |
| Stackers                     | 1.25              | 1.50              |
| Winches                      | 1.25              | 1.50              |
| <b>ELEVATORS</b>             |                   |                   |
| Bucket                       | 1.25              | 1.50              |
| Centrifugal discharge        | 1.15              | 1.25              |
| Escalators                   | 1.15              | 1.25              |
| Freight                      | 1.25              | 1.50              |
| Gravity discharge            | 1.15              | 1.25              |
| <b>EXTRUDERS</b>             |                   |                   |
| General                      | 1.50              | 1.50              |
| <b>Plastics</b>              |                   |                   |
| Variable speed drive         | 1.50              | 1.50              |
| Fixed speed drive            | 1.75              | 1.75              |
| <b>Rubber</b>                |                   |                   |
| Continuous screw operation   | 1.75              | 1.75              |
| Intermittent screw operation | 1.75              | 1.75              |
| <b>FANS</b>                  |                   |                   |
| Centrifugal                  | 1.00              | 1.25              |
| Cooling towers               | 2.00              | 2.00              |

(\*) - Indication of service factor based on FEM 1.001 classification available upon request. Consult factory.

- Hoists for passengers lift: charted **values not applicable**. Consult factory.



| Application                    | ≤ 10 hours/day | > 10 hours/day |
|--------------------------------|----------------|----------------|
| Forced draft                   | 1.25           | 1.25           |
| Induced draft                  | 1.50           | 1.50           |
| Industrial and mine            | 1.50           | 1.50           |
| <b>FEEDERS</b>                 |                |                |
| Apron                          | 1.25           | 1.50           |
| Belt                           | 1.15           | 1.50           |
| Disc                           | 1.00           | 1.25           |
| Reciprocating                  | 1.75           | 2.00           |
| Screw                          | 1.25           | 1.50           |
| <b>FOOD INDUSTRY</b>           |                |                |
| Dough mixer                    | 1.25           | 1.50           |
| Meat grinders                  | 1.25           | 1.50           |
| Slicers                        | 1.25           | 1.50           |
| <b>GENERATORS AND EXCITERS</b> | 1.00           | 1.25           |
| <b>HAMMER MILLS</b>            | 1.75           | 2.00           |
| <b>HOISTS (*)</b>              |                |                |
| Heavy duty                     | 1.75           | 2.00           |
| Medium duty                    | 1.25           | 1.50           |
| Skip hoist                     | 1.25           | 1.50           |
| <b>LUMBER INDUSTRY</b>         |                |                |
| Barkers - spindle feed         | 1.25           | 1.50           |
| Main drive                     | 1.75           | 1.75           |
| <b>Conveyors - burner</b>      | 1.25           | 1.50           |
| Main or heavy duty             | 1.50           | 1.50           |
| Main log                       | 1.75           | 2.00           |
| Re-saw, merry-go-round         | 1.25           | 1.50           |
| <b>Conveyors</b>               |                |                |
| Slab                           | 1.75           | 2.00           |
| Transfer                       | 1.25           | 1.50           |
| <b>Chains</b>                  |                |                |
| Floor                          | 1.50           | 1.50           |
| Green                          | 1.50           | 1.75           |
| <b>Cut-off saws</b>            |                |                |
| Chain                          | 1.50           | 1.75           |
| Drag                           | 1.50           | 1.75           |
| Debarking drums                | 1.75           | 2.00           |
| <b>Feeds</b>                   |                |                |
| Edger                          | 1.25           | 1.50           |
| Gang                           | 1.75           | 1.75           |
| Trimmer                        | 1.25           | 1.50           |
| Log deck                       | 1.75           | 1.75           |

| Application                           | ≤ 10 hours/day | > 10 hours/day |
|---------------------------------------|----------------|----------------|
| Log hauls -<br>incline - weel type    | 1.75           | 1.75           |
| Log turning devices                   | 1.75           | 1.75           |
| Planer feed                           | 1.25           | 1.50           |
| Planer tilting hoists                 | 1.50           | 1.50           |
| Rolls - live-off brg. -<br>roll cases | 1.75           | 1.75           |
| Sorting table                         | 1.25           | 1.50           |
| Tipple hoist                          | 1.25           | 1.50           |
| <b>Transfers</b>                      |                |                |
| Chain                                 | 1.50           | 1.75           |
| Craneways                             | 1.50           | 1.75           |
| Tray drives                           | 1.25           | 1.50           |
| Veneer lathe drives                   | 1.25           | 1.50           |
| <b>METAL MILLS</b>                    |                |                |
| Slab pushers                          | 1.50           | 1.50           |
| Shears                                | 2.00           | 2.00           |
| Wire drawing                          | 1.25           | 1.50           |
| Wire winding machine                  | 1.50           | 1.50           |
| <b>MILLS, ROTARY TYPE</b>             |                |                |
| Ball and rod                          | 2.00           | 2.00           |
| Spur ring gear                        | 2.00           | 2.00           |
| Helical ring gear                     | 1.50           | 1.50           |
| Direct connected                      | 2.00           | 2.00           |
| Cement kilns                          | 1.50           | 1.50           |
| Dryers and coolers                    | 1.50           | 1.50           |
| <b>MIXERS</b>                         |                |                |
| Concrete                              | 1.50           | 1.75           |
| <b>PAPER MILLS</b>                    |                |                |
| Agitator (mixer)                      | 1.50           | 1.50           |
| Agitator for pure liquors             | 1.25           | 1.25           |
| Barking drums                         | 2.00           | 2.00           |
| Barkers - mechanical                  | 2.00           | 2.00           |
| Beater                                | 1.50           | 1.50           |
| Breaker stack                         | 1.25           | 1.25           |
| Calendar                              | 1.25           | 1.25           |
| Chipper                               | 2.00           | 2.00           |
| Chip feeder                           | 1.50           | 1.50           |
| Coating rolls                         | 1.25           | 1.25           |
| <b>Conveyors</b>                      |                |                |
| Chip, bark, chemical                  | 1.25           | 1.25           |
| Log (including slab)                  | 2.00           | 2.00           |

(\*) - Indication of service factor based on FEM 1.001 classification available upon request. Consult factory.

- Hoists for passengers lift: charted **values not applicable**. Consult factory.





| Application                 | ≤ 10<br>hours/day | > 10<br>hours/day |
|-----------------------------|-------------------|-------------------|
| Couch rolls                 | 1.25              | 1.25              |
| Cutter                      | 2.00              | 2.00              |
| Cylinder molds              | 1.25              | 1.25              |
| <b>Dryers</b>               |                   |                   |
| Paper machine               | 1.25              | 1.25              |
| Conveyors type              | 1.25              | 1.25              |
| Embossers                   | 1.25              | 1.25              |
| Extruder                    | 1.50              | 1.50              |
| Jordan                      | 1.50              | 1.50              |
| Kiln drive                  | 1.50              | 1.50              |
| Paper rolls                 | 1.25              | 1.25              |
| Platter                     | 1.50              | 1.50              |
| Presses - felt and suction  | 1.25              | 1.25              |
| Pulper                      | 2.00              | 2.00              |
| Pumps - vacuum              | 1.50              | 1.50              |
| Reel (surface type)         | 1.25              | 1.25              |
| <b>Screens</b>              |                   |                   |
| Chip                        | 1.50              | 1.50              |
| Rotary                      | 1.50              | 1.50              |
| Vibrating                   | 2.00              | 2.00              |
| Size press                  | 1.25              | 1.25              |
| Super calendar              | 1.25              | 1.25              |
| Thickener (AC motor)        | 1.50              | 1.50              |
| Thickener (DC motor)        | 1.25              | 1.25              |
| Washer (AC motor)           | 1.50              | 1.50              |
| Washer (DC motor)           | 1.25              | 1.25              |
| Wind and unwind stand       | 1.25              | 1.50              |
| Winders (surface type)      | 1.25              | 1.25              |
| Yankee dryers               | 1.25              | 1.25              |
| <b>PLASTICS INDUSTRY</b>    |                   |                   |
| Batch mixers                | 1.75              | 1.75              |
| Continuous mixers           | 1.50              | 1.50              |
| Compounding mill            | 1.25              | 1.25              |
| Calendars                   | 1.50              | 1.50              |
| <b>Secondary processing</b> |                   |                   |
| Blow molders                | 1.50              | 1.50              |
| Coating                     | 1.25              | 1.25              |
| Film                        | 1.25              | 1.25              |
| Pre-plasticizers            | 1.50              | 1.50              |
| Rods                        | 1.25              | 1.25              |

| Application                               | ≤ 10<br>hours/day | > 10<br>hours/day |
|---|-------------------|-------------------|
| Sheet                                     | 1.25              | 1.25              |
| Tubing                                    | 1.25              | 1.50              |
| <b>PUMPS</b>                              |                   |                   |
| Centrifugal                               | 1.15              | 1.25              |
| <b>Reciprocating</b>                      |                   |                   |
| Single acting,<br>three or more cylinders | 1.25              | 1.50              |
| Double acting,<br>two or more cylinders   | 1.25              | 1.50              |
| <b>Rotary</b>                             |                   |                   |
| Gear type                                 | 1.15              | 1.25              |
| Lobe                                      | 1.15              | 1.25              |
| Vane                                      | 1.15              | 1.25              |
| <b>RUBBER INDUSTRY</b>                    |                   |                   |
| <b>Intensive internal mixer</b>           |                   |                   |
| Batch mixers                              | 1.75              | 1.75              |
| Continuous mixers                         | 1.50              | 1.50              |
| Refiner - two rolls                       | 1.50              | 1.50              |
| Calendars                                 | 1.50              | 1.50              |
| <b>SAND MULLER</b>                        | 1.25              | 1.50              |
| <b>SEWAGE DISPOSAL<br/>EQUIPMENT</b>      |                   |                   |
| Aerators                                  | 2.00              | 2.00              |
| Chemical feeders                          | 1.25              | 1.25              |
| Dewatering screens                        | 1.50              | 1.50              |
| Scum breakers                             | 1.50              | 1.50              |
| Slow or rapid mixers                      | 1.50              | 1.50              |
| Sludge collectors                         | 1.25              | 1.25              |
| Thickeners                                | 1.50              | 1.50              |
| Vacuum filters                            | 1.50              | 1.50              |
| <b>SCREENS</b>                            |                   |                   |
| Air washing                               | 1.00              | 1.25              |
| Rotary - stone or gravel                  | 1.25              | 1.50              |
| Travelling water intake                   | 1.00              | 1.25              |
| <b>SUGAR INDUSTRY</b>                     |                   |                   |
| Beet slicer                               | 2.00              | 2.00              |
| Cane knives                               | 1.50              | 1.50              |
| Crushers                                  | 1.50              | 1.50              |
| Mills (low speed end)                     | 1.75              | 1.75              |
| <b>TEXTILE MACHINERY</b>                  | 1.25              | 1.50              |

## SELECTING THE GEAR UNIT

Selection of the the Atex product must fit through the compilation of this selection form. For a safe selection it is strongly recommended to rely on the long time experience of the Bonfiglioli Technical Service Dept.

|   |                             | <b>TECHNICAL DATA REQUIRED FOR<br/>THE SELECTION OF HDP - HDO</b> |  |   | Nr: _____                        |                       |                      |
|---|-----------------------------|---|--|---|----------------------------------|-----------------------|----------------------|
|   |                             |   |  |   | Date: _____                      |                       |                      |
|   |                             |   |  |   | Rev_                             | Date:                 |                      |
| <b>A ) GENERAL DATA</b>                   |                             |   |  |   |                                  |                       |                      |
| #   | 1                           | Company / Customer  |  |   |                                  |                       |                      |
| #   | 2                           | Contact   |  |   |                                  |                       |                      |
| #   | 3                           | Branch / Distributor  |  |   |                                  |                       |                      |
| #   | 4                           | Order quantity  |  |   |                                  |                       |                      |
| #   | 5                           | Delivery time   |  |   |                                  |                       |                      |
| <b>B ) ELECTRIC MOTOR</b>                 |                             |   |  |   |                                  |                       |                      |
| #   | 6                           | Motor Type  |  |   |                                  |                       |                      |
| #   | 7                           | $P_{n1}$  | Rated motor power                              | [kW]  |                                  |                       |                      |
| #   | 8                           | $P_{r1}$  | Motor power demand                             | [kW]  |                                  |                       |                      |
| #   | 9                           | $n_1$   | Input speed                                    | [min <sup>-1</sup> ]  |                                  |                       |                      |
| #   | 10                          | Pole number   |  |   |                                  |                       |                      |
| #   | 11                          | Motor mounting: B3 - B5 - B14                                     |  |   |                                  |                       |                      |
| <b>C<sub>1</sub>) GEARBOX</b>             |                             |   |  | <b>C<sub>2</sub>) ATEX CONDITION [GROUPII] - 2014/34/EU</b> |                                  |                       |                      |
| #   | 12                          | Gearbox configuration   |  |   |                                  |                       |                      |
| #   | 13                          | $i$   | Gear ratio                                     | Category: [2 = standard / 3 = special]                      |                                  |                       |                      |
| #   | 14                          | $n_2$   | Output speed                                   | [min <sup>-1</sup> ]  | Atmosphere: [G = gas / D = dust] |                       |                      |
| #   | 15                          | $M_{r2}$  | Output torque demand                           | [Nm]  | Zone: [1 - 21 / 2 - 22]          |                       |                      |
| #   | 17                          | $f_s$   | Service factor required                        | Temperature class: [T4 / 135°C]                             |                                  |                       |                      |
| #   | 18                          | Rotation of the output shaft [ front view ]:                      |  | <b>CW</b>   |                                  |                       |                      |
| #   | 19                          | $L_{10H}$   | Bearings lifetime                              | [h]   | <b>CCW</b>                       |                       |                      |
| #   | 20                          | Gears lifetime  |  | [h]   |                                  |                       |                      |
| #   | 21                          | $SF_{min}$  | Safety for tooth root stress                   | standard reference (ISO preferred)                          |                                  |                       |                      |
| #   | 22                          | $SH_{min}$  | Safety for flank pressure                      | standard reference (ISO preferred)                          |                                  |                       |                      |
| <b>D ) ADDITIONAL LOADS</b>               |                             |   |  |   |                                  |                       |                      |
| #   | 23                          | $R_{c2}$  | Radial load on output shaft                    | [N]   |                                  |                       |                      |
| #   | 24                          | $x_2$   | Load application distance from shaft shoulder  | [mm]  |                                  |                       |                      |
| #   | 25                          | $\alpha_{Rc2}$  | Angle of application of the output Radial load | [° ' ]  |                                  |                       |                      |
| #   | 26                          | $R_{c1}$  | Radial load on input shaft                     | [N]   |                                  |                       |                      |
| #   | 27                          | $x_1$   | Load application distance from shaft shoulder  | [mm]  |                                  |                       |                      |
| #   | 28                          | $\alpha_{Rc1}$  | Angle of application of the input Radial load  | [° ' ]  |                                  |                       |                      |
| #   | 29                          | $A_{n2}$  | Thrust load on output shaft ( + / - )          | [N]   |                                  |                       |                      |
| #   | 30                          | $A_{n1}$  | Thrust load on input shaft ( + / - )           | [N]   |                                  |                       |                      |
| <b>E ) APPLICATION</b>                    |                             |   |  |   |                                  |                       |                      |
| #   | 31                          | Type of application   |  |   |                                  |                       |                      |
| #   | 32                          |   |  | Time phase  | Time phase                       | Gearbox output torque | Gearbox output speed |
|   |                             |   |  | %   | hours                            | [Nm]                  | [min <sup>-1</sup> ] |
|   |                             |   |  | ****  | ****                             |                       |                      |
|   |                             |   |  | ****  | ****                             |                       |                      |
|   |                             |   |  | ****  | ****                             |                       |                      |
|   |                             |   |  | ****  | ****                             |                       |                      |
| #   | 33                          | Notes about Duty Cycle:   |  |   |                                  |                       |                      |
|   |                             | Duty type   |  | <b>S1</b>   | <b>S2</b>                        | <b>S3</b>             | <b>S4-S8</b>         |
| #   | 34                          | $v_A$   | Ambient air velocity                           | [m/s]   | ≤ 0.5                            | > 0.5 ≤ 1.4           | > 1.4                |
| #   | 35                          | $t_a$   | Ambient temperature range                      | [°C]  |                                  |                       |                      |
| #   | 36                          | Altitude a.s.l.   |  | [m]   |                                  |                       |                      |
| #   | 37                          | Rating according FEM class  |  | T-  | L-                               | M-                    |                      |
| <b>F ) OPTIONS OR ADDITIONAL REQUESTS</b> |                             |   |  |   |                                  |                       |                      |
| #   | 38                          | Lubrication   |  |   |                                  |                       |                      |
| #   | 39                          | Supplementary cooling systems                                     |  |   |                                  |                       |                      |
| #   | 40                          | Paint coating   |  |   |                                  |                       |                      |
| #   | 41                          | To specific requests for testing                                  |  |   |                                  |                       |                      |
| <b>G ) NOTES</b>                          |                             |   |  |   |                                  |                       |                      |
| #   | 42                          | Notes and additional Customer requirements:                       |  |   |                                  |                       |                      |
| #   | 43                          | PLP number if present for Special Gearbox                         |  |   |                                  |                       |                      |
| #   | Mandatory for the selection |   |  |   |                                  |                       |                      |



The selection of the drive unit can only be optimized upon knowing both the engineering and the environmental conditions the gearbox will operate into.

## 10 ENGINEERING SELECTION

1. First determine the gear ratio:

$$i = \frac{n_1}{n_2}$$

2. Calculate the power  $P_{r1}$  required at the input shaft:

$$P_{r1} = \frac{M_{r2} \times n_2}{9550 \times \eta}$$

|    | $\eta$ |
|----|--------|
| 2x | 0.96   |
| 3x | 0.94   |
| 4x | 0.92   |

3. Determine the applicable service factor  $f_s$  and the adjusting factor  $f_m$  depending on prime mover:

|   | $f_m$ |
|---|-------|
| Electric motor<br>Hydraulic motor<br>Turbine  | 1.00  |
| Multi-cylinder internal<br>combustion engine  | 1.25  |
| Single cylinder internal<br>combustion engine | 1.50  |

4. Use the rating charts to select the gear unit with the gear ratio nearest to that calculated, and with a rated power  $P_{n1}$ , so that:

$$P_{n1} \geq P_{r1} \times f_s \times f_m$$







## 11 VERIFICATIONS

### 11.1 SHOCK LOADING

For intermittent duty, impact/shock loading applications or start-ups under full load or with high inertial loads, make sure the following condition is satisfied for momentary peak torque  $M_p$  generated during the operating cycle:

$$M_p \leq M_{n2ref} \times f_p$$

| Peaks/hour |                    | $f_p$   |          |           |            |       |
|------------|--------------------|---|----------|-----------|------------|-------|
|            |                    | 1   | 2 ... 10 | 11 ... 50 | 51 ... 100 | > 100 |
| Drive      | Constant direction | 2.0<br>1.8 (HDO 71...95 3x <br>1.6 (HDO 71...95 4x  | 1.6      | 1.3       | 1.1        | 1.0   |
|            | Reversals          | 1.4<br>1.3 (HDO 71...95 3x <br>1.1 (HDO 71...95 4x  | 1.1      | 0.9       | 0.8        | 0.7   |

For configuration S (output shaft with shrink disc), use the following values to verify applicability.

| Peaks/hour |                    | $f_p$   |                     |       |
|------------|--------------------|---|---------------------|-------|
|            |                    | 1 ... 50  | 51 ... 100          | > 100 |
| Drive      | Constant direction | 1.3<br>1.1 (HDP 80)<br>1 (HDO 81)<br>1.2 (HDO 95) | 1.1<br>1 (HDO 81)   | 1.0   |
|            | Reversals          | 0.9<br>0.8 (HDP 80 - HDO 95)<br>0.7 (HDO 81)      | 0.8<br>0.7 (HDO 81) | 0.7   |

If the above condition is not satisfied, consider installing a torque limiter or selecting a gear unit of the next size up.

### 11.2 MOTOR MOUNTING

Verify that the appropriate motor adapter is available for the selected gear unit. See sections [15.5](#) and [26.6](#).

Because of standardisation, the rated power of the electric motor selected might be greater than power  $P_{r1}$  actually requested by the application. Make sure that the electric motor will never develop the extra power at any stage of the operating cycle. If you have any doubts about the validity of the application data, or uncertainty concerning the actual load pattern, install a torque limiting device or proportionally revise the applicable service factor.



### 11.3 BACKSTOP DEVICE

If the gear unit is specified with a backstop, verify the load capacity of the device at sections [15.6.3](#) and [26.7.3](#) of this catalogue and make sure the torque  $M_{1MAX}$  is never exceeded in operation.

### 11.4 CALCULATING THE RESULTING OVERHUNG LOAD

External transmissions keyed onto input and/or output shaft generate loads that act radially onto same shaft.




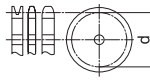
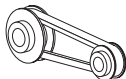
Resulting shaft loading must be compatible with both the bearing and the shaft capacity.

Namely shaft loading ( $R_{c1}$  for input shaft,  $R_{c2}$  for output shaft), must be equal or lower than admissible overhung load capacity for shaft under study ( $R_{x1}$  for input shaft,  $R_{x2}$  for output shaft). OHL capability listed in the rating chart section.

The procedure described above applies to both the input shaft and the output shaft, but care must be taken to apply factor  $K_1$  or factor  $K_2$  to suit the particular shaft.

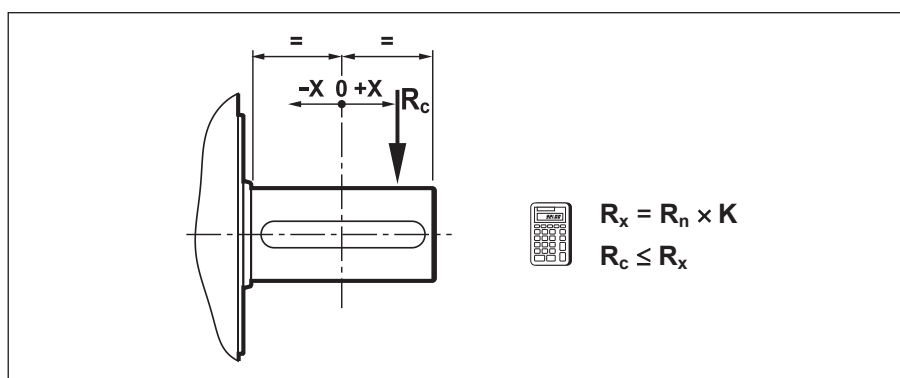
The load generated by an external transmission can be calculated, to a good approximation, by the following equation:

$$R_c = \frac{2000 \times M \times K_r}{d}$$

|                   |   |          |   |
|-------------------|---|----------|---|
| $K_r = 1$         |  | $M$ [Nm] |  |
| $K_r = 1.25$      |  | $d$ [mm] |  |
| $K_r = 1.5 - 2.0$ |  |          |   |

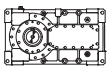


## 11.5 OVERHUNG LOADING VERIFICATION

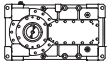



The  $R_{n1 \max}$  values listed in the table are the maximum permissible overhung loads; these loads may have to be reduced in certain applications.

For an exact value, please contact Bonfiglioli's Technical Service.

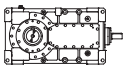
|  | i =             | R <sub>n1 max</sub><br>[kN] | K <sub>1</sub> |     |      |      |      |      |      |      |      |      |      |     |     |  |
|--|-----------------|-----------------------------|----------------|-----|------|------|------|------|------|------|------|------|------|-----|-----|--|
|  |                 |                             | x [mm] =       |     |      |      |      |      |      |      |      |      |      |     |     |  |
|  |                 |                             | -100           | -75 | -50  | -25  | 0    | 25   | 50   | 75   | 100  | 150  | 200  | 250 | 300 |  |
| HDP 60 2   | 7.1 ... 15.2    | 4.5                         | —              | —   | —    | 1.29 | 1.00 | 0.82 | 0.69 | 0.60 | 0.53 | —    | —    | —   | —   |  |
|  | 17.3 ... 19.4   | 3.0                         | —              | —   | —    | 1.28 | 1.00 | 0.82 | 0.70 | 0.60 | 0.53 | —    | —    | —   | —   |  |
| HDP 60 3   | 22.7 ... 49.1   | 3.1                         | —              | —   | —    | 1.29 | 1.00 | 0.82 | 0.69 | 0.60 | 0.53 | —    | —    | —   | —   |  |
|  | 56.6 ... 98.4   | 2.1                         | —              | —   | —    | 1.33 | 1.00 | 0.80 | 0.67 | 0.57 | 0.50 | —    | —    | —   | —   |  |
| HDP 70 2   | 8.0 ... 17.7    | 4.5                         | —              | —   | —    | 1.29 | 1.00 | 0.82 | 0.69 | 0.60 | 0.53 | —    | —    | —   | —   |  |
|  | 19.4 ... 22.6   | 3.0                         | —              | —   | —    | 1.28 | 1.00 | 0.82 | 0.70 | 0.60 | 0.53 | —    | —    | —   | —   |  |
| HDP 70 3   | 25.5 ... 57.0   | 3.1                         | —              | —   | —    | 1.29 | 1.00 | 0.82 | 0.69 | 0.60 | 0.53 | —    | —    | —   | —   |  |
|  | 63.7 ... 114.4  | 2.1                         | —              | —   | —    | 1.33 | 1.00 | 0.80 | 0.67 | 0.57 | 0.50 | —    | —    | —   | —   |  |
| HDP 80 2   | 8.1 ... 14.6    | 5.0                         | —              | —   | 1.53 | 1.21 | 1.00 | 0.85 | 0.74 | 0.66 | 0.59 | 0.49 | —    | —   | —   |  |
|  | 15.5 ... 22.6   | 5.5                         | —              | —   | —    | 1.24 | 1.00 | 0.84 | 0.72 | 0.63 | 0.56 | 0.41 | —    | —   | —   |  |
| HDP 80 3   | 25.8 ... 75.2   | 5.8                         | —              | —   | —    | 1.26 | 1.00 | 0.83 | 0.71 | 0.62 | 0.53 | 0.39 | —    | —   | —   |  |
|  | 76.4 ... 111.4  | 3.0                         | —              | —   | —    | 1.29 | 1.00 | 0.82 | 0.69 | 0.54 | 0.44 | 0.32 | —    | —   | —   |  |
| HDP 90 2   | 7.9 ... 13.6    | 6.3                         | —              | —   | 1.48 | 1.19 | 1.00 | 0.86 | 0.76 | 0.67 | 0.61 | 0.51 | —    | —   | —   |  |
|  | 15.8 ... 22.4   | 6.3                         | —              | —   | 1.48 | 1.19 | 1.00 | 0.86 | 0.76 | 0.67 | 0.61 | 0.51 | —    | —   | —   |  |
| HDP 90 3   | 25.4 ... 73.3   | 6.1                         | —              | —   | 1.45 | 1.18 | 1.00 | 0.87 | 0.76 | 0.68 | 0.62 | 0.52 | —    | —   | —   |  |
|  | 77.8 ... 110.1  | 3.7                         | —              | —   | —    | 1.22 | 1.00 | 0.85 | 0.73 | 0.61 | 0.50 | 0.37 | —    | —   | —   |  |
| HDP 100 2  | 7.4 ... 21.8    | 11.1                        | —              | —   | 1.35 | 1.15 | 1.00 | 0.89 | 0.80 | 0.72 | 0.66 | 0.56 | 0.49 | —   | —   |  |
| HDP 100 3  | 22.8 ... 50     | 6.3                         | —              | —   | 1.48 | 1.19 | 1.00 | 0.86 | 0.76 | 0.67 | 0.61 | 0.51 | —    | —   | —   |  |
|  | 55.5 ... 107.8  | 6.9                         | —              | —   | 1.54 | 1.21 | 1.00 | 0.85 | 0.74 | 0.65 | 0.59 | 0.49 | —    | —   | —   |  |
| HDP 100 4  | 110.6 ... 246.9 | 2.1                         | —              | —   | —    | 1.18 | 1.00 | 0.87 | 0.76 | 0.68 | 0.62 | —    | —    | —   | —   |  |
|  | 286.4 ... 507.9 | 2.7                         | —              | —   | —    | 1.25 | 1.00 | 0.83 | 0.71 | 0.63 | 0.56 | —    | —    | —   | —   |  |
| HDP 110 2  | 8.1 ... 25.0    | 11.1                        | —              | —   | 1.35 | 1.15 | 1.00 | 0.89 | 0.80 | 0.72 | 0.66 | 0.56 | 0.49 | —   | —   |  |
| HDP 110 3  | 24.9 ... 54.5   | 6.3                         | —              | —   | 1.48 | 1.19 | 1.00 | 0.86 | 0.76 | 0.67 | 0.61 | 0.51 | —    | —   | —   |  |
|  | 60.7 ... 123.5  | 6.9                         | —              | —   | 1.54 | 1.21 | 1.00 | 0.85 | 0.74 | 0.65 | 0.59 | 0.49 | —    | —   | —   |  |
| HDP 110 4  | 120. ... 214.2  | 2.1                         | —              | —   | —    | 1.18 | 1.00 | 0.87 | 0.76 | 0.68 | 0.62 | —    | —    | —   | —   |  |
|  | 248.6 ... 499.4 | 2.7                         | —              | —   | —    | 1.25 | 1.00 | 0.83 | 0.71 | 0.63 | 0.56 | —    | —    | —   | —   |  |



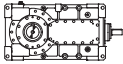

|  | i =  | Rn1 max<br>[kN] | K <sub>1</sub> |      |      |      |      |      |      |      |      |      |      |      |      |
|---|--|-----------------|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
|   |  |                 | x [mm] =       |      |      |      |      |      |      |      |      |      |      |      |      |
|   |  |                 |                | -100 | -75  | -50  | -25  | 0    | 25   | 50   | 75   | 100  | 150  | 200  | 250  |
| HDP 120 2   | 7.9 ... 25.4   | 17.8            | —              | —    | 1.37 | 1.16 | 1.00 | 0.88 | 0.79 | 0.71 | 0.65 | 0.55 | 0.48 | —    | —    |
|   | 25.8 ... 56.1  | 6.3             | —              | —    | 1.48 | 1.19 | 1.00 | 0.86 | 0.76 | 0.67 | 0.61 | 0.51 | —    | —    | —    |
| HDP 120 3   | 64.3 ... 125.2   | 6.9             | —              | —    | 1.54 | 1.21 | 1.00 | 0.85 | 0.74 | 0.65 | 0.59 | 0.49 | —    | —    | —    |
|   | 128 ... 277.2  | 2.1             | —              | —    | —    | 1.18 | 1.00 | 0.87 | 0.76 | 0.68 | 0.62 | —    | —    | —    | —    |
| HDP 120 4   | 323.2 ... 523.7  | 2.7             | —              | —    | —    | 1.25 | 1.00 | 0.83 | 0.71 | 0.63 | 0.56 | —    | —    | —    | —    |
|   | 8.9 ... 25.0   | 17.8            | —              | —    | 1.37 | 1.16 | 1.00 | 0.88 | 0.79 | 0.71 | 0.65 | 0.55 | 0.48 | —    | —    |
| HDP 125 2   | 29.1 ... 62.6  | 6.3             | —              | —    | 1.48 | 1.19 | 1.00 | 0.86 | 0.76 | 0.67 | 0.61 | 0.51 | —    | —    | —    |
|   | 72.5 ... 123.6   | 6.9             | —              | —    | 1.54 | 1.21 | 1.00 | 0.85 | 0.74 | 0.65 | 0.59 | 0.49 | —    | —    | —    |
| HDP 125 3   | 144.4 ... 506.5  | 2.1             | —              | —    | —    | 1.18 | 1.00 | 0.87 | 0.76 | 0.68 | 0.62 | —    | —    | —    | —    |
| HDP 125 4   | 7.3 ... 12.3   | 28.0            | —              | 1.47 | 1.27 | 1.12 | 1.00 | 0.90 | 0.82 | 0.76 | 0.69 | 0.54 | 0.45 | 0.38 | —    |
|   | 14.1 ... 21.7  | 22.1            | —              | —    | 1.30 | 1.13 | 1.00 | 0.90 | 0.81 | 0.74 | 0.69 | 0.55 | 0.45 | —    | —    |
| HDP 130 2   | 21.8 ... 48.1  | 11.9            | —              | —    | 1.28 | 1.12 | 1.00 | 0.90 | 0.82 | 0.75 | 0.69 | 0.60 | 0.53 | —    | —    |
|   | 56.5 ... 108.3   | 8.1             | —              | —    | 1.31 | 1.13 | 1.00 | 0.89 | 0.81 | 0.74 | 0.68 | 0.58 | —    | —    | —    |
| HDP 130 3   | 111.2 ... 237.9  | 4.8             | —              | —    | 1.33 | 1.14 | 1.00 | 0.89 | 0.80 | 0.73 | 0.67 | 0.57 | —    | —    | —    |
|   | 274.5 ... 534.5  | 1.8             | —              | —    | —    | 1.15 | 1.00 | 0.88 | 0.79 | 0.72 | 0.65 | —    | —    | —    | —    |
| HDP 130 4   | 8.4 ... 14.4   | 28.0            | —              | 1.47 | 1.27 | 1.12 | 1.00 | 0.90 | 0.82 | 0.76 | 0.69 | 0.54 | 0.45 | 0.38 | —    |
|   | 16.3 ... 24.9  | 22.1            | —              | —    | 1.30 | 1.13 | 1.00 | 0.90 | 0.81 | 0.74 | 0.69 | 0.55 | 0.45 | —    | —    |
| HDP 140 2   | 25.1 ... 56.2  | 11.9            | —              | —    | 1.28 | 1.12 | 1.00 | 0.90 | 0.82 | 0.75 | 0.69 | 0.60 | 0.53 | —    | —    |
|   | 65.1 ... 124.7   | 8.1             | —              | —    | 1.31 | 1.13 | 1.00 | 0.89 | 0.81 | 0.74 | 0.68 | 0.58 | —    | —    | —    |
| HDP 140 3   | 141.6 ... 277.5  | 4.8             | —              | —    | 1.33 | 1.14 | 1.00 | 0.89 | 0.80 | 0.73 | 0.67 | 0.57 | —    | —    | —    |
|   | 315.9 ... 495.3  | 1.8             | —              | —    | —    | 1.15 | 1.00 | 0.88 | 0.79 | 0.72 | 0.65 | —    | —    | —    | —    |
| HDP 140 4   | 7.9 ... 14.1   | 31.7            | 1.60           | 1.39 | 1.23 | 1.10 | 1.00 | 0.91 | 0.84 | 0.78 | 0.73 | 0.61 | 0.51 | 0.44 | 0.38 |
|   | 15.4 ... 19.6  | 26.4            | —              | 1.43 | 1.25 | 1.11 | 1.00 | 0.91 | 0.83 | 0.77 | 0.71 | 0.58 | 0.48 | 0.40 | —    |
| HDP 150 2   | 21.5 ... 38.1  | 26.6            | —              | 1.44 | 1.26 | 1.11 | 1.00 | 0.91 | 0.83 | 0.77 | 0.71 | 0.57 | 0.47 | 0.40 | —    |
|   | 43.5 ... 77.0  | 17.4            | —              | —    | 1.28 | 1.12 | 1.00 | 0.90 | 0.82 | 0.75 | 0.70 | 0.61 | 0.54 | —    | —    |
| HDP 150 3   | 89.0 ... 157.8   | 10.8            | —              | —    | 1.47 | 1.19 | 1.00 | 0.86 | 0.76 | 0.68 | 0.61 | 0.51 | —    | —    | —    |
|   | 170.9 ... 303.1  | 6.1             | —              | —    | 1.45 | 1.18 | 1.00 | 0.87 | 0.76 | 0.68 | 0.62 | 0.52 | —    | —    | —    |
| HDP 150 4   | 9.0 ... 15.9   | 31.7            | 1.60           | 1.39 | 1.23 | 1.10 | 1.00 | 0.91 | 0.84 | 0.78 | 0.73 | 0.61 | 0.51 | 0.44 | 0.38 |
|   | 17.5 ... 22.1  | 26.4            | —              | 1.43 | 1.25 | 1.11 | 1.00 | 0.91 | 0.83 | 0.77 | 0.71 | 0.58 | 0.48 | 0.40 | —    |
| HDP 160 2   | 24.4 ... 43.1  | 26.6            | —              | 1.44 | 1.26 | 1.11 | 1.00 | 0.91 | 0.83 | 0.77 | 0.71 | 0.57 | 0.47 | 0.40 | —    |
|   | 49.4 ... 87.0  | 17.4            | —              | —    | 1.28 | 1.12 | 1.00 | 0.90 | 0.82 | 0.75 | 0.70 | 0.61 | 0.54 | —    | —    |
| HDP 160 3   | 101.1 ... 178.1  | 10.8            | —              | —    | 1.47 | 1.19 | 1.00 | 0.86 | 0.76 | 0.68 | 0.61 | 0.51 | —    | —    | —    |
|   | 194.1 ... 342.2  | 6.1             | —              | —    | 1.45 | 1.18 | 1.00 | 0.87 | 0.76 | 0.68 | 0.62 | 0.52 | —    | —    | —    |
| HDP 160 4   |  |                 |                |      |      |      |      |      |      |      |      |      |      |      |      |
| HDP 170   |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |                 |                |      |      |      |      |      |      |      |      |      |      |      |      |
| HDP 180   |  |                 |                |      |      |      |      |      |      |      |      |      |      |      |      |



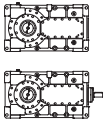



|  | i =             | Rn1 max<br>[kN] | K <sub>1</sub> |      |      |      |      |      |      |      |      |      |      |      |     |
|---|-----------------|-----------------|----------------|------|------|------|------|------|------|------|------|------|------|------|-----|
|   |                 |                 | x [mm] =       |      |      |      |      |      |      |      |      |      |      |      |     |
|   |                 |                 | -100           | -75  | -50  | -25  | 0    | 25   | 50   | 75   | 100  | 150  | 200  | 250  | 300 |
| HDO 71 3  | 21.8 ... 71.9   | 6.1             | —              | —    | —    | 1.56 | 1.00 | 0.70 | 0.51 | 0.39 | 0.33 | —    | —    | —    | —   |
| HDO 71 4  | 77.0 ... 475.4  | 4.8             | —              | —    | —    | 1.88 | 1.00 | 0.54 | 0.38 | 0.29 | 0.23 | —    | —    | —    | —   |
| HDO 81 3  | 25.9 ... 71.9   | 11.7            | —              | —    | 2.61 | 1.56 | 1.00 | 0.69 | 0.52 | 0.43 | 0.36 | —    | —    | —    | —   |
| HDO 81 4  | 78.3 ... 473.3  | 7.2             | —              | —    | —    | 1.76 | 1.00 | 0.54 | 0.38 | 0.28 | 0.22 | —    | —    | —    | —   |
| HDO 91 3  | 18.6 ... 66.1   | 11.6            | —              | —    | 2.17 | 1.37 | 1.00 | 0.79 | 0.65 | 0.52 | 0.43 | —    | —    | —    | —   |
| HDO 91 4  | 82.0 ... 489.3  | 5.9             | —              | —    | —    | 1.54 | 1.00 | 0.75 | 0.53 | 0.42 | 0.34 | —    | —    | —    | —   |
| HDO 95 3  | 21.2 ... 72.3   | 11.6            | —              | —    | 2.17 | 1.37 | 1.00 | 0.79 | 0.65 | 0.52 | 0.43 | —    | —    | —    | —   |
| HDO 95 4  | 81.6 ... 489.7  | 5.8             | —              | —    | —    | 1.55 | 1.00 | 0.74 | 0.53 | 0.41 | 0.34 | —    | —    | —    | —   |
| HDO 100 2   | 5.8 ... 13.5    | 19.4            | —              | —    | 1.88 | 1.30 | 1.00 | 0.81 | 0.68 | 0.59 | 0.51 | 0.40 | 0.32 | —    | —   |
| HDO 100 3   | 14 ... 17.3     | 18.7            | —              | —    | 2.23 | 1.38 | 1.00 | 0.78 | 0.64 | 0.54 | 0.45 | 0.34 | —    | —    | —   |
|   | 20.2 ... 67.5   | 10.8            | —              | —    | 2.23 | 1.38 | 1.00 | 0.78 | 0.63 | 0.51 | 0.43 | 0.32 | —    | —    | —   |
| HDO 100 4   | 70.8 ... 139.8  | 7.2             | —              | —    | —    | 1.56 | 1.00 | 0.72 | 0.52 | 0.40 | 0.33 | —    | —    | —    | —   |
|   | 160 ... 344.2   | 4.8             | —              | —    | —    | 1.56 | 1.00 | 0.74 | 0.58 | 0.46 | 0.38 | —    | —    | —    | —   |
| HDO 110 2   | 6.4 ... 15.5    | 19.4            | —              | —    | 1.88 | 1.30 | 1.00 | 0.81 | 0.68 | 0.59 | 0.51 | 0.40 | 0.32 | —    | —   |
| HDO 110 3   | 18.9 ... 20.9   | 18.7            | —              | —    | 2.23 | 1.38 | 1.00 | 0.78 | 0.64 | 0.54 | 0.45 | 0.34 | —    | —    | —   |
|   | 22 ... 77.5     | 10.8            | —              | —    | 2.23 | 1.38 | 1.00 | 0.78 | 0.63 | 0.51 | 0.43 | 0.32 | —    | —    | —   |
| HDO 110 4   | 77.4 ... 121.7  | 7.2             | —              | —    | —    | 1.56 | 1.00 | 0.72 | 0.52 | 0.40 | 0.33 | —    | —    | —    | —   |
|   | 137.1 ... 395   | 4.8             | —              | —    | —    | 1.56 | 1.00 | 0.74 | 0.58 | 0.46 | 0.38 | —    | —    | —    | —   |
| HDO 120 2   | 6.6 ... 15.5    | 22.6            | —              | —    | 1.82 | 1.29 | 1.00 | 0.78 | 0.62 | 0.51 | 0.44 | 0.34 | 0.28 | —    | —   |
| HDO 120 3   | 17.3 ... 24.6   | 18.7            | —              | —    | 2.23 | 1.38 | 1.00 | 0.78 | 0.64 | 0.54 | 0.45 | 0.34 | —    | —    | —   |
|   | 28.3 ... 78.6   | 10.8            | —              | —    | 2.23 | 1.38 | 1.00 | 0.78 | 0.63 | 0.51 | 0.43 | 0.32 | —    | —    | —   |
| HDO 120 4   | 87 ... 162.2    | 7.2             | —              | —    | —    | 1.56 | 1.00 | 0.72 | 0.52 | 0.40 | 0.33 | —    | —    | —    | —   |
|   | 179.7 ... 400.6 | 4.8             | —              | —    | —    | 1.56 | 1.00 | 0.74 | 0.58 | 0.46 | 0.38 | —    | —    | —    | —   |
| HDO 125 2   | 7.4 ... 16.9    | 22.6            | —              | —    | 1.82 | 1.29 | 1.00 | 0.78 | 0.62 | 0.51 | 0.44 | 0.34 | 0.28 | —    | —   |
| HDO 125 3   | 19.2 ... 35.8   | 18.7            | —              | —    | 2.23 | 1.38 | 1.00 | 0.78 | 0.64 | 0.54 | 0.45 | 0.34 | —    | —    | —   |
|   | 38.8 ... 85.9   | 10.8            | —              | —    | 2.23 | 1.38 | 1.00 | 0.78 | 0.63 | 0.51 | 0.43 | 0.32 | —    | —    | —   |
| HDO 125 4   | 97.0 ... 178.0  | 7.2             | —              | —    | —    | 1.56 | 1.00 | 0.72 | 0.52 | 0.40 | 0.33 | —    | —    | —    | —   |
|   | 200.3 ... 438.0 | 4.8             | —              | —    | —    | 1.56 | 1.00 | 0.74 | 0.58 | 0.46 | 0.38 | —    | —    | —    | —   |
| HDO 130 2   | 5.7 ... 13.6    | 35.8            | —              | 2.21 | 1.57 | 1.22 | 1.00 | 0.85 | 0.73 | 0.62 | 0.54 | 0.42 | 0.35 | 0.30 | —   |
| HDO 130 3   | 15.2 ... 67.1   | 22.6            | —              | —    | 1.82 | 1.29 | 1.00 | 0.78 | 0.62 | 0.51 | 0.44 | 0.34 | 0.28 | —    | —   |
| HDO 130 4   | 71.5 ... 335.6  | 10.9            | —              | —    | 2.25 | 1.38 | 1.00 | 0.78 | 0.63 | 0.50 | 0.42 | 0.32 | —    | —    | —   |
| HDO 140 2   | 6.6 ... 15.7    | 35.8            | —              | 2.21 | 1.57 | 1.22 | 1.00 | 0.85 | 0.73 | 0.62 | 0.54 | 0.42 | 0.35 | 0.30 | —   |
| HDO 140 3   | 17.7 ... 77.3   | 22.6            | —              | —    | 1.82 | 1.29 | 1.00 | 0.78 | 0.62 | 0.51 | 0.44 | 0.34 | 0.28 | —    | —   |
| HDO 140 4   | 82.3 ... 386.6  | 10.9            | —              | —    | 2.25 | 1.38 | 1.00 | 0.78 | 0.63 | 0.50 | 0.42 | 0.32 | —    | —    | —   |



|  | i =   | Rn1 max<br>[kN] | K <sub>1</sub> |      |      |      |      |      |      |      |      |      |      |      |      |  |
|---|---|-----------------|----------------|------|------|------|------|------|------|------|------|------|------|------|------|--|
|   |   |                 | x [mm] =       |      |      |      |      |      |      |      |      |      |      |      |      |  |
|   |   |                 | -100           | -75  | -50  | -25  | 0    | 25   | 50   | 75   | 100  | 150  | 200  | 250  | 300  |  |
| HDO 150 2   | 5.5 ... 7.0   | 54.0            | 2.75           | 1.91 | 1.47 | 1.19 | 1.00 | 0.86 | 0.76 | 0.67 | 0.59 | 0.47 | 0.40 | 0.34 | 0.30 |  |
|   | 8.1 ... 13.7  | 41.6            | 2.75           | 1.91 | 1.47 | 1.19 | 1.00 | 0.86 | 0.76 | 0.66 | 0.58 | 0.46 | 0.39 | 0.33 | 0.29 |  |
| HDO 150 3   | 15.6 ... 60.8   | 35.8            | —              | 2.21 | 1.57 | 1.22 | 1.00 | 0.85 | 0.73 | 0.62 | 0.54 | 0.42 | 0.35 | 0.30 | —    |  |
| HDO 150 4   | 66.9 ... 92.9   | 18.7            | —              | —    | 2.23 | 1.38 | 1.00 | 0.78 | 0.64 | 0.54 | 0.45 | 0.34 | —    | —    | —    |  |
|   | 101.8 ... 238.8   | 10.9            | —              | —    | 2.25 | 1.38 | 1.00 | 0.78 | 0.63 | 0.50 | 0.42 | 0.32 | —    | —    | —    |  |
| HDO 160 2   | 7.3 ... 7.9   | 54.0            | 2.75           | 1.91 | 1.47 | 1.19 | 1.00 | 0.86 | 0.76 | 0.67 | 0.59 | 0.47 | 0.40 | 0.34 | 0.30 |  |
|   | 8.9 ... 15.4  | 41.6            | 2.75           | 1.91 | 1.47 | 1.19 | 1.00 | 0.86 | 0.76 | 0.66 | 0.58 | 0.46 | 0.39 | 0.33 | 0.29 |  |
| HDO 160 3   | 17.7 ... 68.6   | 35.8            | —              | 2.21 | 1.57 | 1.22 | 1.00 | 0.85 | 0.73 | 0.62 | 0.54 | 0.42 | 0.35 | 0.30 | —    |  |
| HDO 160 4   | 75.9 ... 96.3   | 18.7            | —              | —    | 2.23 | 1.38 | 1.00 | 0.78 | 0.64 | 0.54 | 0.45 | 0.34 | —    | —    | —    |  |
|   | 115.2 ... 269.7   | 10.9            | —              | —    | 2.25 | 1.38 | 1.00 | 0.78 | 0.63 | 0.50 | 0.42 | 0.32 | —    | —    | —    |  |
| HDO 170   |  BONFIGLIOLI TECHNICAL SERVICE |                 |                |      |      |      |      |      |      |      |      |      |      |      |      |  |
| HDO 180   |   |                 |                |      |      |      |      |      |      |      |      |      |      |      |      |  |

The values for overhung and thrust loads are the maximum permissible values.

|  | Rn2 max<br>[kN]   | K <sub>2</sub> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | An2 max<br>[kN] |
|---|---|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|
|   |   | x [mm] =       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   |   | -100           | -75  | -50  | -25  | 0    | 25   | 50   | 75   | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  |                 |
| HDP 60  | 35.0  | —              | —    | 1.20 | 1.09 | 1.00 | 0.74 | 0.58 | 0.48 | 0.41 | 0.32 | —    | —    | —    | —    | —    | —    | 17.5 |                 |
| HDP 70<br>HDO 71  | 40.0  | —              | 1.34 | 1.20 | 1.09 | 1.00 | 0.77 | 0.63 | 0.53 | 0.46 | 0.36 | 0.30 | —    | —    | —    | —    | —    | 25.0 |                 |
| HDP 80<br>HDO 81  | 46.0  | 1.38           | 1.26 | 1.16 | 1.07 | 1.00 | 0.82 | 0.69 | 0.59 | 0.52 | 0.42 | 0.35 | 0.30 | —    | —    | —    | —    | 32.5 |                 |
| HDP 90<br>HDO 91  | 62.0  | 1.33           | 1.23 | 1.14 | 1.07 | 1.00 | 0.81 | 0.68 | 0.58 | 0.51 | 0.41 | 0.34 | 0.30 | —    | —    | —    | —    | 37.5 |                 |
| HDO 95  | 69.0  | 1.28           | 1.20 | 1.12 | 1.06 | 1.00 | 0.81 | 0.68 | 0.58 | 0.51 | 0.41 | 0.34 | 0.30 | 0.26 | —    | —    | —    | 38.5 |                 |
| HDP 100<br>HDO 100  | 80.0  | 1.28           | 1.20 | 1.12 | 1.06 | 1.00 | 0.81 | 0.68 | 0.58 | 0.51 | 0.41 | 0.34 | 0.30 | 0.26 | —    | —    | —    | 40.0 |                 |
| HDP 110<br>HDO 110  | 86.0  | 1.27           | 1.19 | 1.12 | 1.06 | 1.00 | 0.83 | 0.71 | 0.63 | 0.56 | 0.45 | 0.38 | 0.33 | 0.29 | 0.26 | 0.24 | —    | 43.0 |                 |
| HDP 120<br>HDO 120  | 107.0   | 1.25           | 1.18 | 1.11 | 1.05 | 1.00 | 0.83 | 0.71 | 0.63 | 0.56 | 0.45 | 0.38 | 0.33 | 0.29 | 0.26 | 0.24 | —    | 53.5 |                 |
| HDP 125<br>HDO 125  | 130.0   | 1.20           | 1.14 | 1.09 | 1.04 | 1.00 | 0.86 | 0.75 | 0.67 | 0.60 | 0.50 | 0.43 | 0.38 | 0.33 | 0.30 | 0.27 | 0.25 | —    | 65.0            |
| HDP 130<br>HDO 130  | 160.0   | 1.20           | 1.14 | 1.09 | 1.04 | 1.00 | 0.86 | 0.75 | 0.67 | 0.60 | 0.50 | 0.43 | 0.38 | 0.33 | 0.30 | 0.27 | 0.25 | —    | 80.0            |
| HDP 140<br>HDO 140  | 190.0   | 1.20           | 1.14 | 1.09 | 1.04 | 1.00 | 0.86 | 0.75 | 0.67 | 0.60 | 0.50 | 0.43 | 0.38 | 0.33 | 0.30 | 0.27 | 0.25 | —    | 95.0            |
| HDP 150<br>HDO 150  | 200.0   | 1.15           | 1.11 | 1.07 | 1.03 | 1.00 | 0.92 | 0.85 | 0.80 | 0.75 | 0.66 | 0.60 | 0.54 | 0.49 | 0.45 | 0.41 | 0.38 | 0.35 | 100.0           |
| HDP 160<br>HDO 160  | 220.0   | 1.15           | 1.11 | 1.07 | 1.03 | 1.00 | 0.92 | 0.85 | 0.80 | 0.75 | 0.66 | 0.60 | 0.54 | 0.49 | 0.45 | 0.41 | 0.38 | 0.35 | 110.0           |
| HDP 170<br>HDO 170  |  BONFIGLIOLI TECHNICAL SERVICE |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| HDP 180<br>HDO 180  |   |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |



## 11.6 SHAFT LOADING

### 11.6.1 Overhung load on the output shaft

Make sure that the overhung load on the output shaft does not exceed the maximum permitted value for the gearbox in question. The HDB option can be specified only for HDP gearbox sizes 60 through 90 to provide higher capacity bearings to cater for particularly large overhung loads. If external loads exceed the load capacity of even the heavy duty bearings, consider the options of providing external support for the shafts, reducing external load in some other way, or, if necessary, selecting a gearbox of the next size up.

To check overhung load capacity, refer to the figure in section 11.5 and compare the actual overhung load  $R_c$  on the shaft with the maximum permissible overhung load  $R_x$  for the distance from the centre of the shaft at which the load is applied. Maximum permissible overhung load  $R_{x2}$  for the output shaft is obtained by multiplying the nominal overhung load  $R_{n2}$ , as listed in the technical data section, by the load location factor  $K_2$ .

Rated overhung loads  $R_n$  are conservative values, as they are calculated for the most unfavourable conditions in terms of direction of rotation and angle of application of the force on the shaft.

The following table shows the rated overhung loads that can be applied to solid (LP) output shafts under the following conditions:

- force applied to the centre of the end of the shaft
- no thrust loads
- gearbox service factor  $\geq 1.25$

Contact Bonfiglioli Riduttori's Technical Service if an exact calculation is required.

|                                   | $R_{n2}$ [kN]                        |       |                                |       |                                      |       |
|-----------------------------------|--------------------------------------|-------|--------------------------------|-------|--------------------------------------|-------|
|                                   | HDP/HD0 ... 2                        |       | HDP/HD0 ... 3                  |       | HDP/HD0 ... 4                        |       |
| $n_2$                             | $\leq 150$ [min <sup>-1</sup> ]      |       | $\leq 75$ [min <sup>-1</sup> ] |       | $\leq 25$ [min <sup>-1</sup> ]       |       |
|                                   | Shaft arrangement                    |       |                                |       |                                      |       |
|                                   | LR/RL                                | LL/RR | LR/RL                          | LL/RR | LL/RR                                | LR/RL |
|                                   | L1/R2                                | L2/R1 | L1/R2                          | L2/R1 | L1/R2                                | L2/R1 |
| <b>HDP 60</b>                     | 22                                   | 14    | 31                             | 22    | <br>BONFIGLIOLI<br>TECHNICAL SERVICE |       |
| <b>HDP 70 - HDO 71</b>            | 18                                   | 9     | 25                             | 16    |                                      |       |
| <b>HDP 80 - HDO 81</b>            | 15                                   | 8     | 28                             | 15    |                                      |       |
| <b>HDP 90 - HDO 91</b>            | 20                                   | 10    | 36                             | 20    |                                      |       |
| <b>HDP 100 - HDO 95 - HDO 100</b> | 28                                   | 13    | 52                             | 26    | 80                                   | 55    |
| <b>HDP 110 - HDO 110</b>          | 46                                   | 33    | 61                             | 37    | 86                                   | 72    |
| <b>HDP 120 - HDO 120</b>          | 62                                   | 34    | 83                             | 54    | 107                                  | 101   |
| <b>HDP 125 - HDO 125</b>          | 75                                   | 48    | 98                             | 69    | 130                                  | 122   |
| <b>HDP 130 - HDO 130</b>          | 90                                   | 46    | 119                            | 73    | 160                                  | 137   |
| <b>HDP 140 - HDO 140</b>          | 85                                   | 43    | 116                            | 73    | 183                                  | 138   |
| <b>HDP 150 - HDO 150</b>          | <br>BONFIGLIOLI<br>TECHNICAL SERVICE |       | 109                            | 52    | 183                                  | 132   |
| <b>HDP 160 - HDO 160</b>          |                                      |       | 88                             | 36    | 172                                  | 110   |
| <b>HDP 170 - HDO 170</b>          | <br>BONFIGLIOLI TECHNICAL SERVICE    |       |                                |       |                                      |       |
| <b>HDP 180 - HDO 180</b>          |                                      |       |                                |       |                                      |       |



For other load conditions, such as:

- high overhung loads
- thrust loads
- combined overhung and thrust loads
- different output shaft configurations

consult Bonfiglioli Riduttori's Technical Service.

### 11.6.2 Overhung and thrust loads on input shaft

When checking the overhung load capacity refer to scheme shown at paragraph 11.5. Calculate the admissible overhung load **R<sub>x</sub>** that is relevant to the distance the force applies from shaft midpoint and compare this with the force **R<sub>c</sub>** that acts onto the shaft. Multiply the nominal radial load **R<sub>n1</sub>**, as listed in the technical data section, for the load location factor **K<sub>1</sub>** to get the permissible overhung load **R<sub>x1</sub>** for the output shaft.

Rated overhung loads **R<sub>n</sub>** are calculated for the most unfavourable condition as far as direction of rotation and the angle the force applies onto the shaft. Catalogue values are therefore conservative, for an in-depth calculation, or in case of HDP with 4 reductions and through-shafts (LD, RD and DD), contact the Technical Service of Bonfiglioli Riduttori.

When a radial force applies a thrust load **A<sub>n1</sub> ≤ 0.2 x R<sub>n1</sub>** is also permitted.

In the case of HDP gearboxes with through-shafts the maximum permitted overhung load refers to the shaft end highlighted in black below:

| HDP |  |    |    | 2x |    | 3x |    | 4x |    |
|-----|--|----|----|----|----|----|----|----|----|
|     |  | LL | LR | LD | RD | LD | RD | LD | RD |
|     |  |    |    |    |    |    |    |    |    |
|     |  |    |    |    |    |    |    |    |    |
|     |  |    |    |    |    |    |    |    |    |

If an overhung load is applied to both shaft ends, contact Bonfiglioli Riduttori's Technical Service for advise.



## 11.7 THERMAL CAPACITY

Thermal power  $P_T$  is the maximum power that the gearbox can transmit mechanically, under continuous operation, without the internal temperature rising to a value that could damage the gearbox components.

Under the following operating conditions:

- mounting position B3, gearbox connected through a metallic support
- continuous functioning
- installation in large areas (air speed > 1.4 m/s)
- max. installation altitude 1000 m

total thermal capacity values and thermal capacity values inclusive of contributions from auxiliary cooling units are listed in sections [17](#) and [28](#).

For other conditions contact Bonfiglioli's Technical Service.

The figure determined must be greater than the  $Pr_1$  power value for the gearbox input shaft. It is therefore important to verify the following formula:

$$P_{T...} \geq Pr_1$$



## 12 SAMPLE APPLICATIONS

|  | Application data              |                          |
|--|-------------------------------|--------------------------|
|  | $n_1 = 1500 \text{ min}^{-1}$ | $f_s = 1.5$              |
|  | $n_2 = 83 \text{ min}^{-1}$   | $Mr_2 = 7850 \text{ Nm}$ |
|  | Mounting position: <b>B3</b>  |                          |
|  | Environmental conditions      |                          |
| Ambient temperature = $40^\circ\text{C}$ |                               |                          |
| Installation in large areas              |                               |                          |

### Product selection:

$$\text{a) } i = \frac{n_1}{n_2} = \frac{1500}{83} \approx 18.1$$

$$\text{b) } Pr_1 = \frac{Mr_2 \times n_2}{9550 \times \eta} = \frac{7850 \times 83}{9550 \times 0.96} \approx 71.1 \text{ kW}$$

$$\text{c) } Pn_1 \geq Pr_1 \cdot f_s \approx 106.6 \text{ kW}$$



**HDP 80 2 18.0 LP LR VP B3**

[ $Pn_1 = 108.7 \text{ kW @ } n_1 = 1500 \text{ min}^{-1}$ ]

### Thermal capacity check:

$$P_T = 55 \text{ kW} < Pr_1 = 71.1 \text{ kW}$$



#### Option 1

- Fan cooling

$$P_{TFANL/R} = 76 \text{ kW @ } n_1 = 1500 \text{ min}^{-1}$$

$$P_{TFANL/R} > Pr_1$$

✓ OK

#### Option 2

- Cooling coil

$$P_{TSR} = 96 \text{ kW @ } n_1 = 1500 \text{ min}^{-1}$$

$$P_{TSR} > Pr_1$$

✓ OK



|                             | Application data              |                           |
|-----------------------------|-------------------------------|---------------------------|
|                             | $n_1 = 1500 \text{ min}^{-1}$ | $f_s = 1.5$               |
|                             | $n_2 = 120 \text{ min}^{-1}$  | $Mr_2 = 13500 \text{ Nm}$ |
|                             | Mounting position: <b>B3</b>  |                           |
|                             | Environmental conditions      |                           |
|                             | Ambient temperature           | = 40°C                    |
| Installation in large areas |                               |                           |

### Product selection:

a)  $i = \frac{n_1}{n_2} = \frac{1500}{120} = 12.5$     b)  $Pr_1 = \frac{Mr_2 \times n_2}{9550 \times \eta} = \frac{13500 \times 120}{9550 \times 0.96} \approx 176.7 \text{ kW}$     c)  $Pn_1 \geq Pr_1 \cdot f_s \approx 265.1 \text{ kW}$



**HDO 110 2 12.5 LP L 1 VP B3**

[ $Pn_1 = 329.4 \text{ kW @ } n_1 = 1500 \text{ min}^{-1}$ ]

### Thermal capacity check:

$P_T = 52 \text{ kW} < Pr_1 = 176.7 \text{ kW}$



### Option 1

- Cooling units with air/oil heat exchanger

$P_{TMCR A9} = 184 \text{ kW @ } n_1 = 1500 \text{ min}^{-1}$

$P_{TMCR A9} > Pr_1$

✓ OK

### Option 2

- Cooling units with water/oil heat exchanger

$P_{TMCR W5} = 250 \text{ kW @ } n_1 = 1500 \text{ min}^{-1}$

$P_{TMCR W5} > Pr_1$

✓ OK





## GEAR UNITS ATEX CONFIGURATION

### 13 INTRODUCTION TO THE ATEX DIRECTIVES

#### 13.1 Explosive atmosphere

An **explosive atmosphere** for the purposes of Directive 2014/34/EU is defined as a mixture:

- a. of **flammable substances**, in the form of gases, vapours, mists or dusts;
- b. with **air**;
- c. under atmospheric conditions;
- d. in which, after ignition, the combustion spreads to the entire unburned mixture (it has to be noted that sometimes, mainly with dust, not always the whole quantity of the combustible material is consumed by the combustion).

An atmosphere, which could become explosive due to local and/or operational conditions is called a **potentially explosive atmosphere**.

It is only in this kind of potentially explosive atmosphere which products falling under the Directive 2014/34/EU are designed for.

#### 13.2 European harmonised atex standards

Directive 2014/34/EU stipulates the minimum safety requirements for products intended for use in explosion risk areas within the member countries of the European Union. The directive also assigns such equipment to **categories**, which are defined by the directive itself.

The following table describes the **zones** into which the user of a plant, in which an explosive atmosphere may occur, is required to divide the equipment application areas.

| Zones                   |                       | Formation frequency of a potentially explosive atmosphere                                       | Type of danger |
|-------------------------|-----------------------|---|----------------|
| Gaseous atmosphere<br>G | Dusty atmosphere<br>D |   |                |
| 0                       | 20                    | Present continuously or for long periods  | Permanent      |
| 1                       | 21                    | Likely to occur in normal operation occasionally  | Potential      |
| 2                       | 22                    | Not likely to occur in normal operation but if it does occur will persist for short period only | Minimal        |





**BONFIGLIOLI RIDUTTORI gear units selected in this catalogue are marked (marking and data on the plate) and are suitable for installation in zones 1, 21, as highlighted in light gray in the above diagram. With the same marking they may of course also be installed in areas (minor risk) 2 and 22, highlighted in dark gray in the above diagram. Contacting our sales department, a special marking on the plate for the same zones 2 and 22 can be requested.**

As from 20 April 2016 the ATEX directive 2014/34/EU come into force throughout the entire European Union, and replace existing conflicting national and European laws on explosive atmospheres and the previous directive 94/9/EC.

The directives apply to mechanical, hydraulic and pneumatic equipment.

### 13.3 Levels of protection for the various categories of equipment

The various categories of equipment must be able to operate in conformity with the Manufacturer's operational specifications, at certain defined levels of protection.

The availability of BONFIGLIOLI RIDUTTORI products is highlighted in grey.

| Protection level | Category |          | Type of protection  | Operating conditions   |
|------------------|----------|----------|---|--|
|                  | Group I  | Group II |   |  |
| Very high        | M1       |          | Two independent means of protection or safety capable of operating even when two independent faults occur | The equipment remains powered and operational even in the presence of an explosive atmosphere  |
| Very high        |          | 1        | Two independent means of protection or safety capable of operating even when two independent faults occur | The equipment remains powered and operational in zones 0, 1, 2 (G) and/or zones 20, 21, 22 (D) |
| High             | M2       |          | Protection suitable for normal operation and heavy duty conditions  | Power to the equipment is shut off in the presence of a potentially explosive atmosphere       |
| High             |          | 2        | Protection suitable for normal operation and frequent faults or equipment in which malfunction is normal. | The equipment remains powered and operational in zones 1, 2 (G) and/or zones 21, 22 (D)        |
| Normal           |          | 3        | Protection suitable for normal operation  | The equipment remains powered and operational in zones 2 (G) and/or 22 (D)                     |



### 13.4 Definition of groups

**Group I** Applies to equipment intended for use underground in parts of mines and those parts of surface installations of such mines, liable to be endangered by fire damp and/or combustible dust.

**Group II** Applies to equipment intended for use in other places liable to be endangered by explosive atmospheres.

BONFIGLIOLI RIDUTTORI products may not therefore be installed in mines, classified in **Group I** and in **Group II**, category 1.

To summarise, the classification of equipment in to groups, categories and zones is illustrated in the table below, where by the availability of BONFIGLIOLI RIDUTTORI products is highlighted in grey.



| Group                                       | I               |    | II  |    |      |      |      |      |
|---|-----------------|----|---|----|------|------|------|------|
|   | mines, firedamp |    | other potentially explosive areas (gas, dust) |    |      |      |      |      |
| Category                                    | M1              | M2 | 1   |    | 2    |      | 3    |      |
| Atmosphere <sup>(1)</sup>                   |                 |    | G   | D  | G    | D    | G    | D    |
| Zone  |                 |    | 0   | 20 | 1    | 21   | 2    | 22   |
| Type of protection gear unit <sup>(2)</sup> |                 |    |   |    | c, k | c, k | c, k | c, k |



(1) **G** = gas    **D** = DUST

(2) as per EN13463

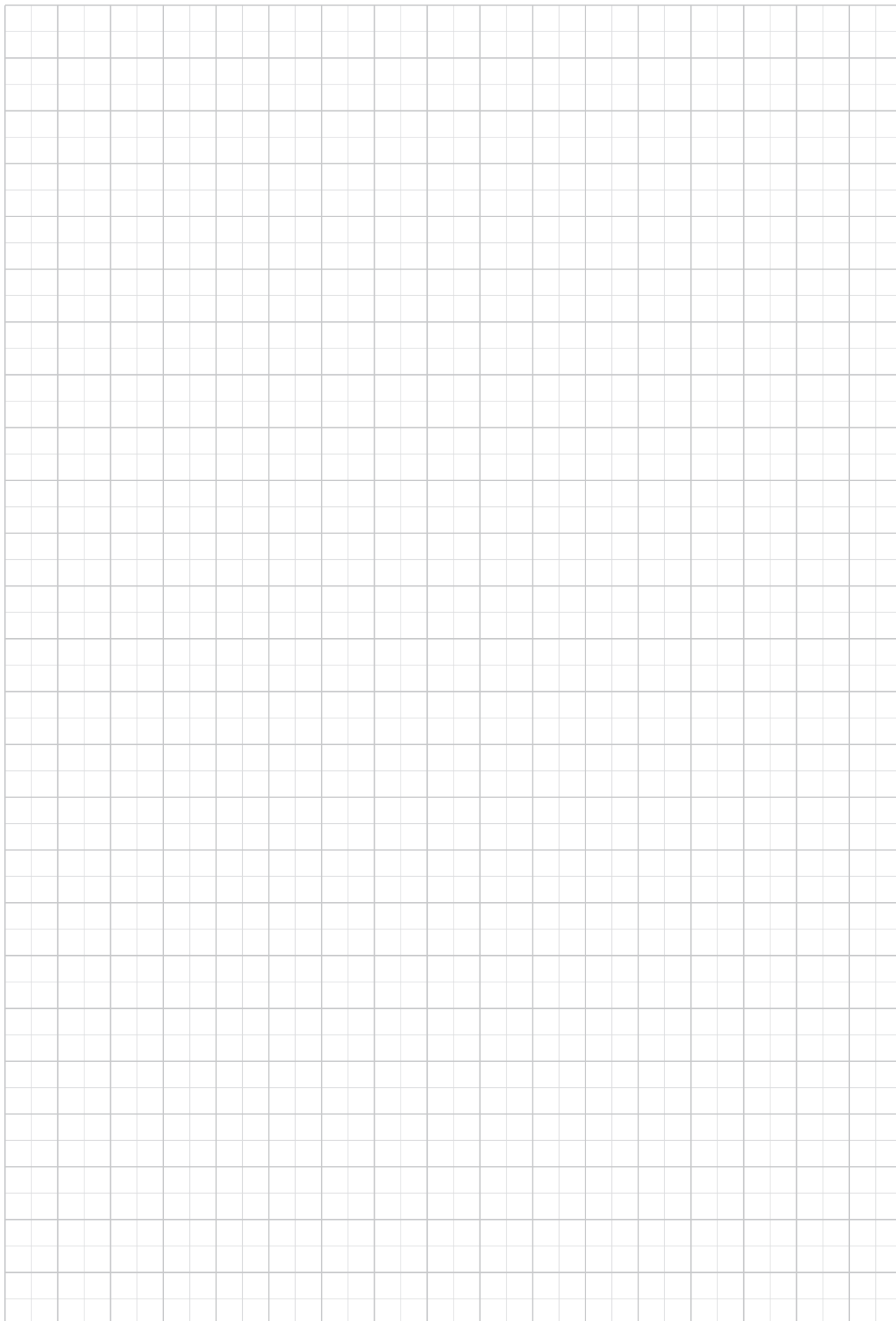
### 13.5 Declaration of conformity

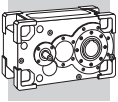
The Declaration of Conformity, is the document which attests to the conformity of the product to Directive 2014/34/EU.

The validity of the Declaration is bound to observance of the instructions given in the User, Installation and Service Manual for safe use of the product throughout its service life.

This can be downloaded from [www.bonfiglioli.com](http://www.bonfiglioli.com) where the manual is available in PDF format in a number of languages.

The instructions regarding ambient conditions are of particular importance inasmuch as failure to observe them during operation of the product renders the certificate null and void. In case of doubt regarding the validity of the certificate of conformity, contact the BONFIGLIOLI RIDUTTORI technical department.





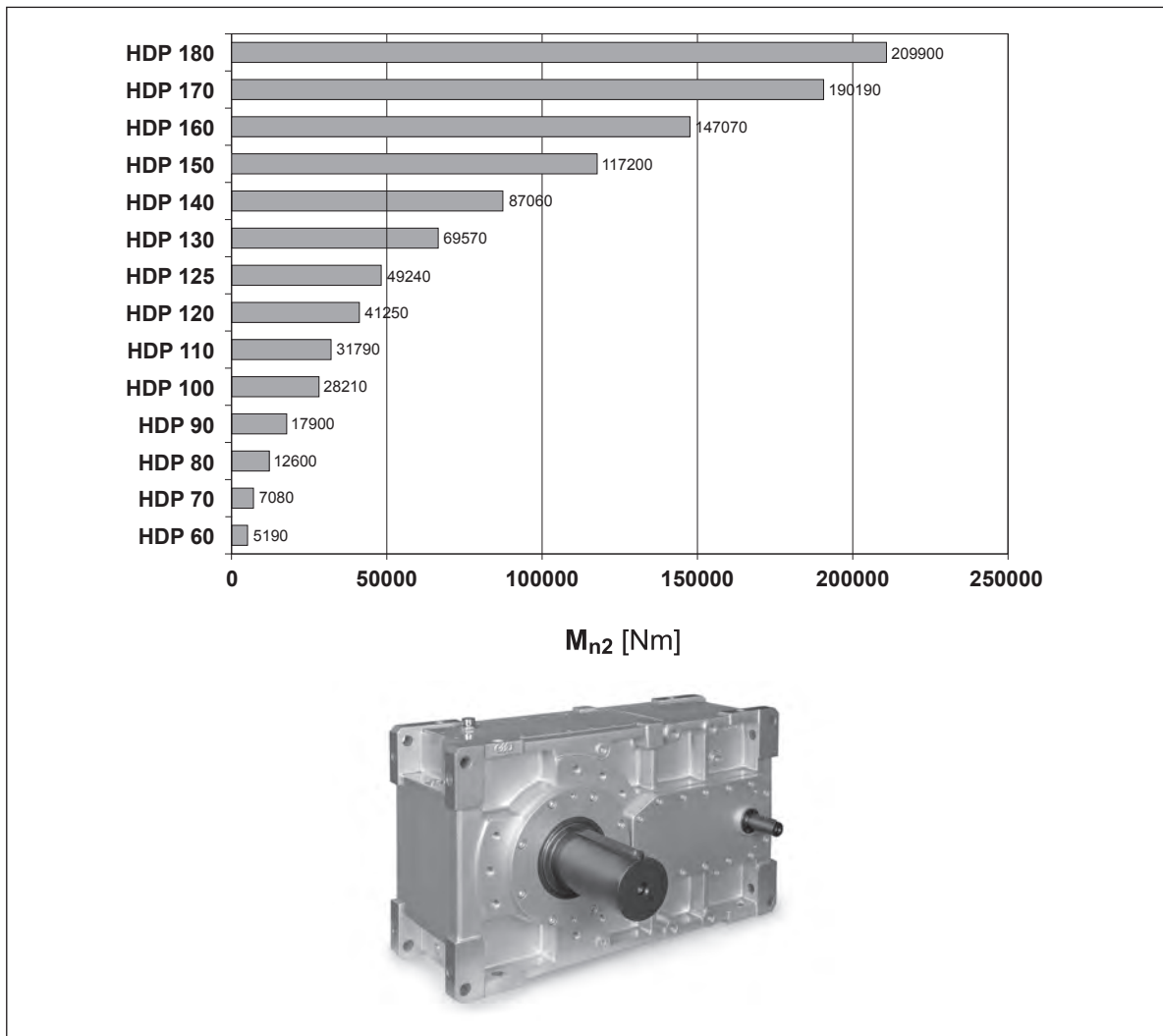
## PARALLEL SHAFT GEAR UNIT SERIES HDP

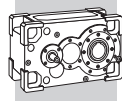
HDP

### 14 DESIGN FEATURES

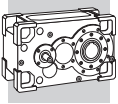
The main construction features of the HDP parallel shaft gear unit range are:

- sizes from HDP 60 to HDP 90 with double and triple reduction.
- sizes from HDP 100 to HDP 180 with double, triple and quadruple reduction.
- Favourable distribution of rated torque values across the entire ratio range.
- Gear ratios in a 12% progression between consecutive values.
- HDP 60 ... HDP 125: Monobloc housing in rigid, spheroidal cast iron, paint coated both internally and externally. Universal mounting thanks to the many machined surfaces. Profiles and dimensions optimised by FEM analysis for superior structural rigidity and low acoustic emissions.
- HDP 130 ... HDP 180: housing in spheroidal cast iron or electrically-welded steel, horizontally split. This design makes maintenance quick and economical. Profiles and dimensions optimised by FEM analysis for superior structural rigidity and low acoustic emissions.
- Casehardened and hardened alloy steel helical gears ground finished and with profile corrected for:
  - more silent operation and smoother transmission of high speed input gears
  - maximum transmissible torque of the lower speed output gear reductions
- Input shafts generally casehardened and ground finished on outer diameter. Output shafts from hardened and tempered alloy steel.





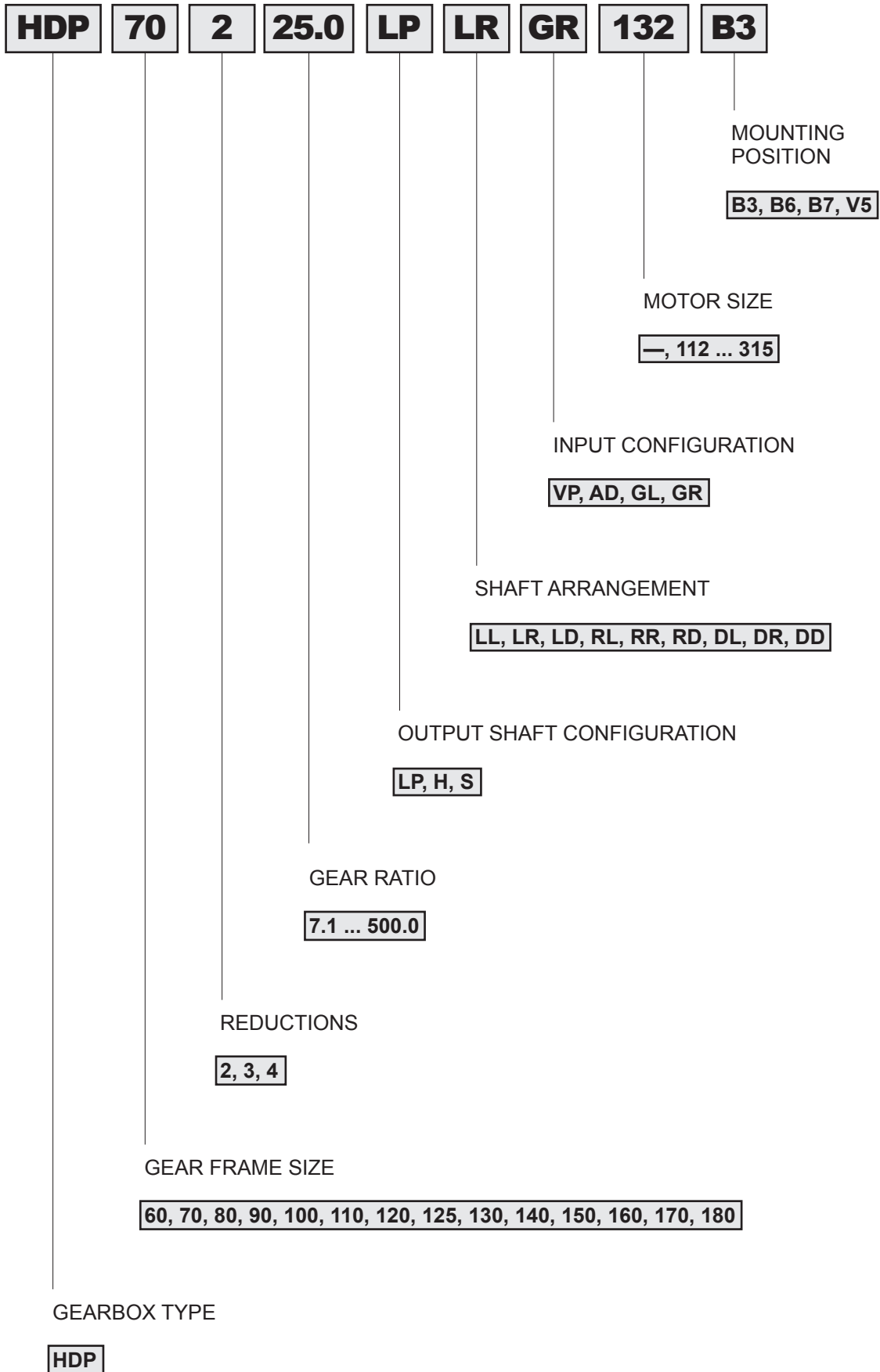
- Input shaft configurations:
  - HDP 60 ... HDP 180: solid, single or double-sided shaft with dimensions to UNI/ISO 775-88
  - HDP 60 ... HDP 90: direct motor mounting or lantern housing and flexible coupling provision.
  - HDP 100 ... HDP 180: motor mounting with bell and housing and flexible coupling.
- Output shaft configurations:
  - solid, single or double-sided shaft with dimensions to UNI/ISO 775-88
  - hollow shaft with keyway
  - hollow shaft with shrink disc
- Heavy duty taper roller bearings or extra large self-aligning roller bearings from the most reputed brands for unparalleled overhung load capacity.
  
- A wide range of customisation options are available upon request, including:
  - auxiliary cooling/heating devices
  - forced lubrication systems
  - backstop device
  - mounting or manifold flanges
  - bearings for increased overhung load capacity (only for HDP 60 ... HDP 90)
  - seals and gaskets in various types and materials
  - sensors
  - dry-well device for vertical shaft installations
  - fixing elements



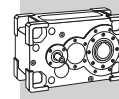
## 15 PRODUCT CONFIGURATIONS

### 15.1 BASE VARIANTS

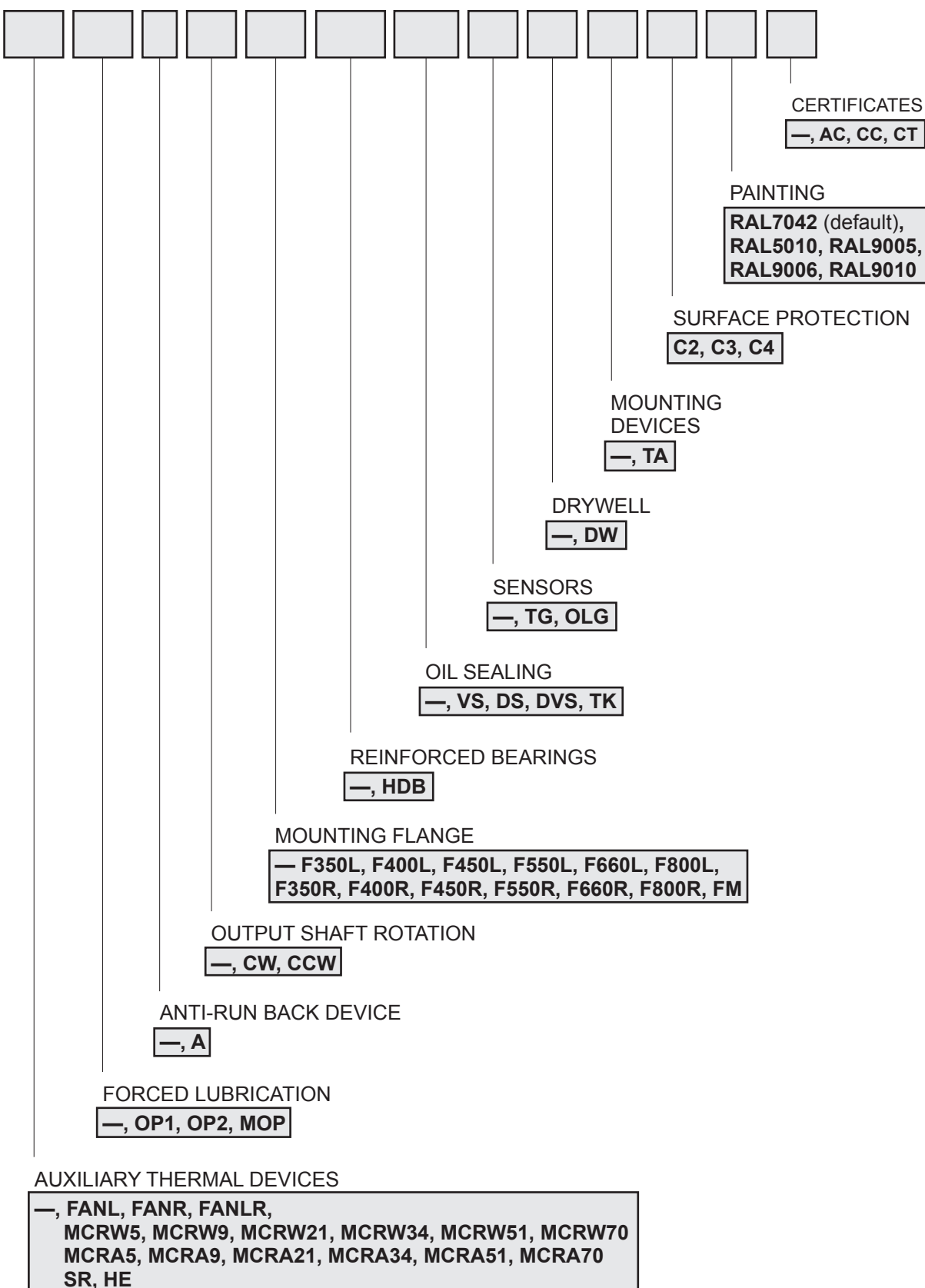
HDP







## 15.2 OPTIONAL VARIANTS

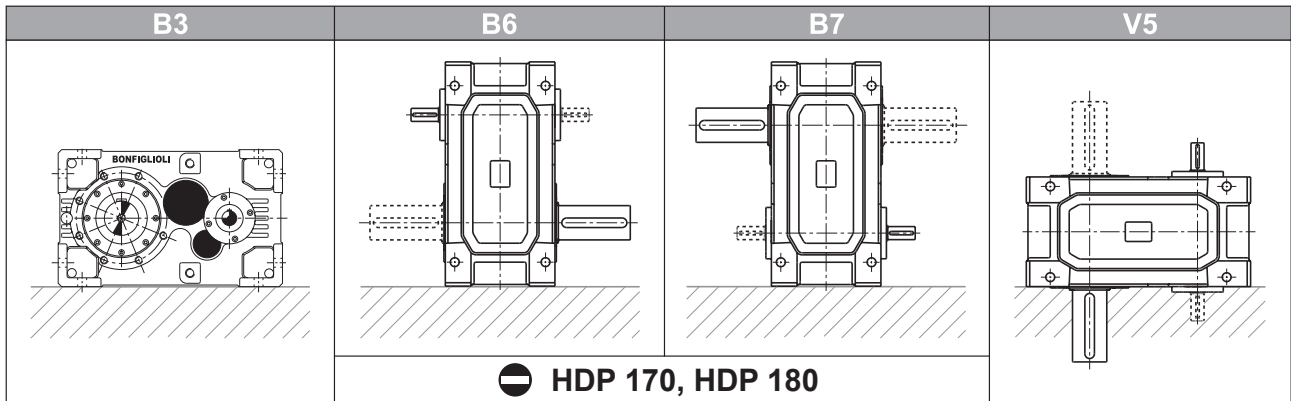


REMARK: The multiple selection of some of the variants may be subject to technical or dimensional constraints. Consult with the factory to have your selection approved.



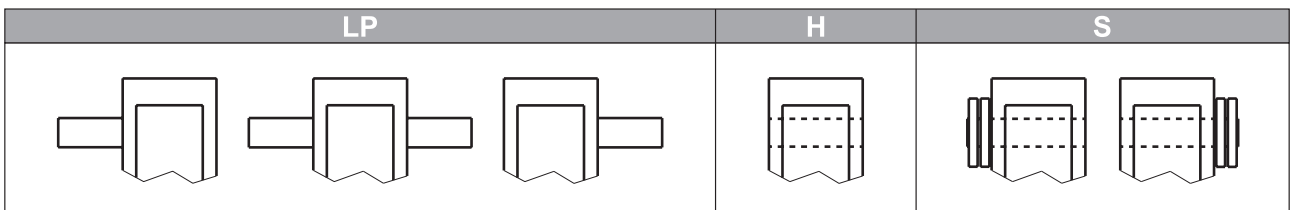
### 15.3 MOUNTING POSITION

HDP



### 15.4 INPUT AND OUTPUT CONFIGURATION

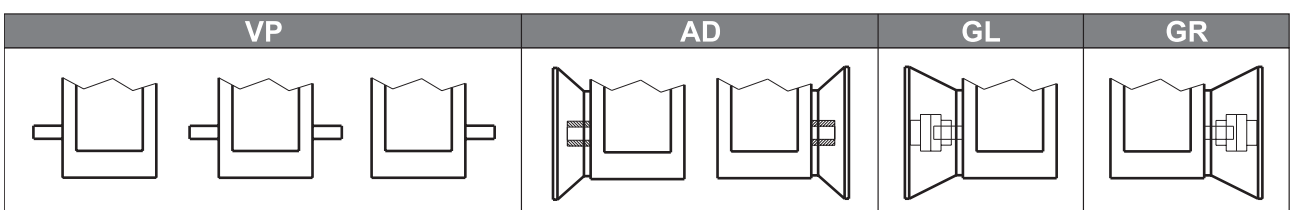
#### 15.4.1 OUTPUT SHAFT CONFIGURATION

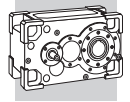


#### 15.4.2 INPUT CONFIGURATION

On the input side the gear unit can be arranged in either one of the configurations described here after:

- **Solid input shaft**, single- or double-sided – Specify **VP**
- **Motor flange mounting** for an IEC-standard electric motor with IM B5 flange. The option is only applicable to units HDP 60... HDP 90 in the triple reduction configuration – Specify **AD**.
- **Motor mounting through bell housing and flexible coupling**. The option is designated **GL** or **GR** depending on what side of the gear unit the coupling is mounted. The flexible coupling is within the scope for supply.



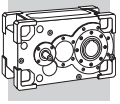


### 15.4.3 SHAFT ARRANGEMENT

|           |           | VP - GL - AD | VP - GR - AD | VP - GL - GR |
|-----------|-----------|--------------|--------------|--------------|
| <b>B3</b> | <b>LP</b> | LL           | LR           | LD           |
|           |           | RL           | RR           | RD           |
|           |           | DL           | DR           | DD           |
|           | <b>H</b>  | LL           | LR           | LD           |
|           |           | LL           | LR           | LD           |
|           | <b>S</b>  | LL           | LR           | LD           |
| RL        |           | RR           | RD           |              |

|           |           | VP - GL - AD | VP - GR - AD | VP - GL - GR |
|-----------|-----------|--------------|--------------|--------------|
| <b>B6</b> | <b>LP</b> | LL           | LR           | LD           |
|           |           | RL           | RR           | RD           |
|           |           | DL           | DR           | DD           |
|           | <b>H</b>  | LL           | LR           | LD           |
|           |           | LL           | LR           | LD           |
|           | <b>S</b>  | LL           | LR           | LD           |
| RL        |           | RR           | RD           |              |

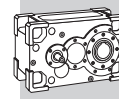
**HDP**



HDP

|           |           | VP - GL - AD | VP - GR - AD | VP - GL - GR |
|-----------|-----------|--------------|--------------|--------------|
| <b>B7</b> | <b>LP</b> | LL           | LR           | LD           |
|           |           | RL           | RR           | RD           |
|           |           | DL           | DR           | DD           |
|           | <b>H</b>  | LL           | LR           | LD           |
|           | <b>S</b>  | LL           | LR           | LD           |
|           |           | RL           | RR           | RD           |

|           |           | VP - GL - AD | VP - GR - AD | VP - GL - GR |
|-----------|-----------|--------------|--------------|--------------|
| <b>V5</b> | <b>LP</b> | LL           | LR           | LD           |
|           |           | RL           | RR           | RD           |
|           |           | DL           | DR           | DD           |
|           | <b>H</b>  | LL           | LR           | LD           |
|           | <b>S</b>  | LL           | LR           | LD           |
|           |           | RL           | RR           | RD           |



## 15.5 MOTOR AVAILABILITY

The following charts list the motor/gearbox combinations that are geometrically feasible. Variants are only applicable if either an AD (direct motor mounting) or a GL / GR input configuration (coupling through bell housing and flexible coupling) were previously specified within the ordering code.




Because of standardisation, the rated power of the electric motor selected might be greater than nominal power  $P_{n1}$  of chosen gearbox. Make sure that the electric motor will never develop the extra power at any stage of the operating cycle. If you have any doubts about the validity of the application data, or uncertainty concerning the actual load pattern, install a torque limiting device or proportionally revise the applicable service factor.

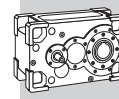
|          | Input configuration |     |     |     |     |
|----------|---------------------|-----|-----|-----|-----|
|          | AD                  |     |     |     |     |
|          | 112                 | 132 | 160 | 180 | 200 |
| HDP 60 3 | X                   | X   | X   | X   |     |
| HDP 70 3 | X                   | X   | X   | X   | X   |
| HDP 80 3 | —                   | X   | X   | X   | X   |
| HDP 90 3 | —                   | —   | X   | X   | X   |

|          |     | Input configuration |            |            |            |           |           |           |
|----------|-----|---------------------|------------|------------|------------|-----------|-----------|-----------|
|          |     | GL - GR             |            |            |            |           |           |           |
|          |     | 132                 | 160        | 180        | 200        | 225       | 250       | 280       |
| HDP 60 2 | i = | 17.3_19.4           | 7.1_19.4   | 7.1_19.4   | 7.1_19.4   | 7.1_19.4  | —         | —         |
| HDP 60 3 |     | 22.7_98.4           | 22.7_98.4  | 22.7_49.1  | 22.7_49.1  | 22.7_49.1 | —         | —         |
| HDP 70 2 |     | 19.4_22.6           | 8.0_22.6   | 8.0_22.6   | 8.0_22.6   | 8.0_22.6  | —         | —         |
| HDP 70 3 |     | 25.5_114.4          | 25.5_114.4 | 25.5_57.0  | 25.5_57.0  | 25.5_57.0 | —         | —         |
| HDP 80 2 |     | —                   | 15.5_22.6  | 15.5_22.6  | 15.5_22.6  | 8.1_22.6  | 8.1_22.6  | 8.1_22.6  |
| HDP 80 3 |     | —                   | 25.8_111.4 | 25.8_111.4 | 25.8_75.2  | 25.8_75.2 | 25.8_75.2 | 25.8_75.2 |
| HDP 90 2 |     | —                   | 15.8_22.4  | 15.8_22.4  | 15.8_22.4  | 15.8_22.4 | 7.9_22.4  | 7.9_22.4  |
| HDP 90 3 |     | —                   | 25.4_110.1 | 25.4_110.1 | 25.4_110.1 | 25.4_73.3 | 25.4_73.3 | 25.4_73.3 |



HDP

| Input configuration |  |             |             |             |             |             |             |             |             |
|---------------------|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| GL - GR             |  |             |             |             |             |             |             |             |             |
|                     | 112  | 132         | 160         | 180         | 200         | 225         | 250         | 280         | 315         |
| HDP 100 2           | —  | —           | —           | —           | —           | —           | 7.4_21.8    | 7.4_21.8    | 7.4_21.8    |
| HDP 100 3           | —  | —           | 55.5_107.6  | 55.5_107.6  | 22.8_107.6  | 22.8_107.6  | 22.8_107.6  | 22.8_50.0   | 22.8_50.0   |
| HDP 100 4           | 110.6_507.9  | 110.6_507.9 | 110.6_507.9 | 110.6_507.9 | 110.6_507.9 | —           | —           | —           | —           |
| HDP 110 2           | —  | —           | —           | —           | —           | —           | 8.1_25.0    | 8.1_25.0    | 8.1_25.0    |
| HDP 110 3           | —  | —           | 60.7_123.4  | 60.7_123.4  | 24.9_123.4  | 24.9_123.4  | 24.9_123.4  | 24.9_54.5   | 24.9_54.5   |
| HDP 110 4           | 120.9_499.4  | 120.9_499.4 | 120.9_499.4 | 120.9_499.4 | 120.9_499.4 | —           | —           | —           | —           |
| HDP 120 2           | —  | —           | —           | —           | —           | —           | —           | 7.9_25.4    | 7.9_25.4    |
| HDP 120 3           | —  | —           | —           | 64.3_125.2  | 64.3_125.2  | 25.8_125.2  | 25.8_125.2  | 25.8_56.1   | 25.8_56.1   |
| HDP 120 4           | —  | 128.0_523.7 | 128.0_523.7 | 128.0_523.7 | 128.0_523.7 | 128.0_523.7 | —           | —           | —           |
| HDP 125 2           | —  | —           | —           | —           | —           | —           | —           | 8.9_25.0    | 8.9_25.0    |
| HDP 125 3           | —  | —           | —           | 72.5_123.6  | 72.5_123.6  | 29.1_123.6  | 29.1_123.6  | 29.1_62.6   | 29.1_62.6   |
| HDP 125 4           | —  | 144.4_506.5 | 144.4_506.5 | 144.4_506.5 | 144.4_506.5 | 144.4_506.5 | —           | —           | —           |
| HDP 130 2           | —  | —           | —           | —           | —           | —           | —           | —           | 7.3_21.7    |
| HDP 130 3           | —  | —           | —           | —           | —           | 56.5_108.3  | 56.5_108.3  | 21.8_108.3  | 21.8_108.3  |
| HDP 130 4           | —  | —           | 111.2_534.5 | 111.2_534.5 | 111.2_534.5 | 111.2_217.9 | 111.2_217.9 | —           | —           |
| HDP 140 2           | —  | —           | —           | —           | —           | —           | —           | —           | 8.4_24.9    |
| HDP 140 3           | —  | —           | —           | —           | —           | 65.1_124.7  | 65.1_124.7  | 25.1_124.7  | 25.1_124.7  |
| HDP 140 4           | —  | —           | 141.6_495.3 | 141.6_495.3 | 141.6_495.3 | 141.6_277.5 | 141.6_277.5 | —           | —           |
| HDP 150 2           | —  | —           | —           | —           | —           | —           | —           | —           | —           |
| HDP 150 3           | —  | —           | —           | —           | —           | —           | —           | 43.5_77.0   | 21.5_77.0   |
| HDP 150 4           | —  | —           | 170.9_303.1 | 170.9_303.1 | 89.0_303.1  | 89.0_303.1  | 89.0_303.1  | 89.0_303.1  | 89.0_157.8  |
| HDP 160 2           | —  | —           | —           | —           | —           | —           | —           | —           | —           |
| HDP 160 3           | —  | —           | —           | —           | —           | —           | —           | 49.4_87.0   | 24.4_87.0   |
| HDP 160 4           | —  | —           | 194.1_342.2 | 194.1_342.2 | 101.1_342.2 | 101.1_342.2 | 101.1_342.2 | 101.1_342.2 | 101.1_178.1 |
| HDP 170             |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |             |             |             |             |             |             |             |             |
| HDP 180             |  |             |             |             |             |             |             |             |             |



## 15.6 OPTIONAL VARIANTS

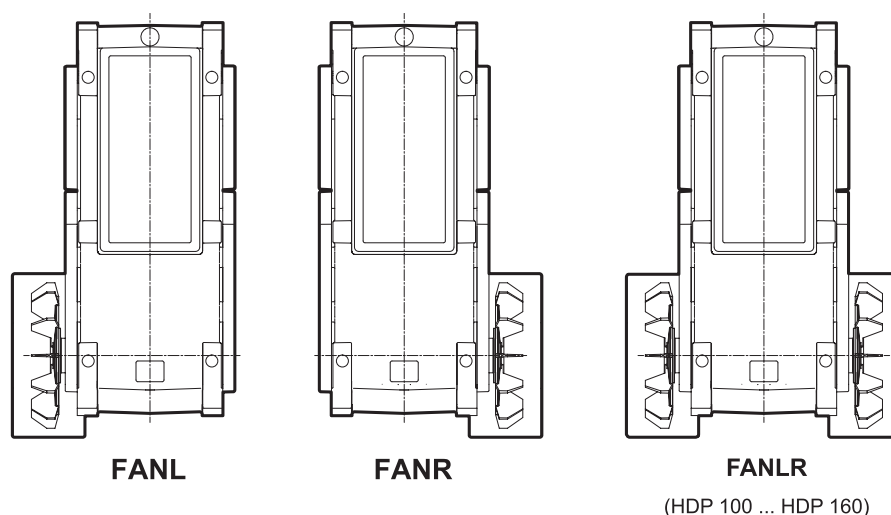
### 15.6.1 AUXILIARY COOLING DEVICES

#### 15.6.1.1 FAN COOLING

Greater heat dissipation capacity can be achieved by installing cooling fans, which are keyed on to the gearbox input shaft. Gear units HDP 60 ... HDP 90 and HDP 100 ... HDP 160 with lantern type motor adapter (GL/GR) may have an auxiliary fan fitted to the side opposite the drive end. Specify code **FANL** or **FANR**. On units ranging from HDP 100 to HDP 160 in the solid input shaft configuration (VP), the fan can be mounted on the right or left side irrespective of whether a drive shaft is present or not.

It is also possible to maximise the cooling capacity on HDP 100 to HDP 160 gearboxes by fitting two fans, specifying code FANLR in the order.

On the gearboxes HDP 170 and HDP 180, are used axial fans with fixed airfoil profile as standard. Along with the specification of the option FANL or FANR, the direction of rotation for the output shaft (CW or CCW) must also be specified in the order, according to the conventions given in paragraph [15.6.3](#).

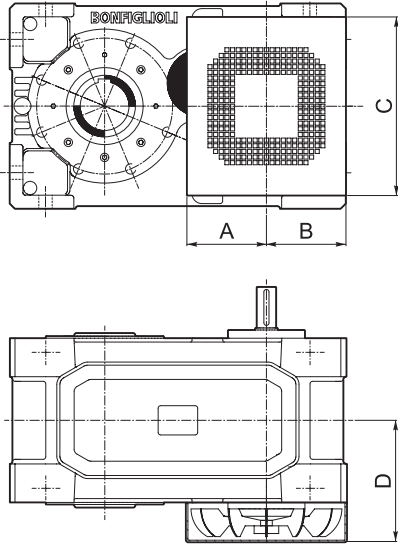


This option is not available in conjunction with configurations that use the same shaft end or with MOP variant (forced lubrication with electric pump).

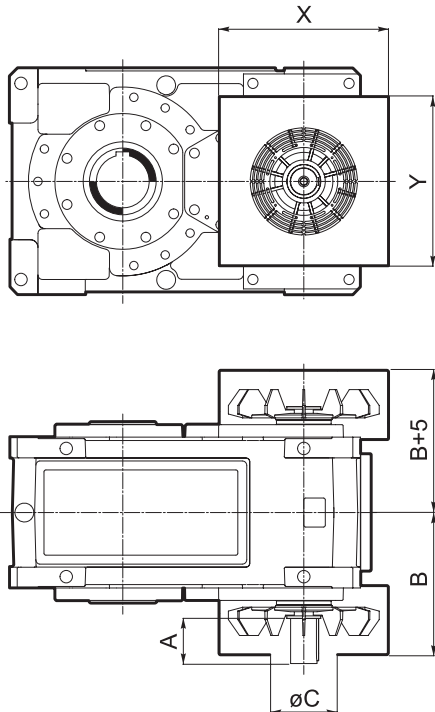
The increased cooling effect is shown by the thermal capacity value  $P_{TFAN}$ . See chapter [17](#). The efficiency of forced ventilation falls drastically below the drive speed of  $n_1 = 900 \text{ min}^{-1}$ . In this case, it is advisable to adopt other auxiliary cooling devices to increase the thermal capacity of the gearbox.




**HDP**

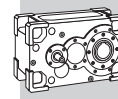


|                    | A   | B   | C   | D   |
|--------------------|-----|-----|-----|-----|
| <b>HDP 60 FAN_</b> | 125 | 130 | 255 | 200 |
| <b>HDP 70 FAN_</b> | 125 | 130 | 255 | 200 |
| <b>HDP 80 FAN_</b> | 155 | 155 | 348 | 235 |
| <b>HDP 90 FAN_</b> | 178 | 178 | 360 | 260 |



|                     | i   | A   | B   | C   | X   | Y   |
|---------------------|---|-----|-----|-----|-----|-----|
| <b>HDP 100 FAN_</b> | $7.4 \leq i \leq 21.8$  | 105 | 330 | 180 | 424 | 420 |
|                     | $22.8 \leq i \leq 107.6$  | 82  | 330 | 180 | 424 | 420 |
|                     | $110.6 \leq i \leq 507.9$   | 58  | 330 | 180 | 424 | 420 |
| <b>HDP 110 FAN_</b> | $8.1 \leq i \leq 25.0$  | 105 | 330 | 180 | 424 | 420 |
|                     | $24.9 \leq i \leq 123.4$  | 82  | 330 | 180 | 424 | 420 |
|                     | $120.9 \leq i \leq 499.4$   | 58  | 330 | 180 | 424 | 420 |
| <b>HDP 120 FAN_</b> | $7.9 \leq i \leq 25.4$  | 105 | 345 | 180 | 450 | 450 |
|                     | $25.8 \leq i \leq 125.2$  | 85  | 345 | 180 | 450 | 450 |
|                     | $128.0 \leq i \leq 523.7$   | 58  | 345 | 180 | 450 | 450 |
| <b>HDP 125 FAN_</b> | $8.9 \leq i \leq 25.0$  | 105 | 345 | 180 | 450 | 450 |
|                     | $29.1 \leq i \leq 123.6$  | 85  | 345 | 180 | 450 | 450 |
|                     | $144.4 \leq i \leq 506.5$   | 58  | 345 | 180 | 450 | 450 |
| <b>HDP 130 FAN_</b> | $7.3 \leq i \leq 12.3$  | 130 | 422 | 230 | 540 | 590 |
|                     | $14.1 \leq i \leq 48.1$   | 105 | 422 | 230 | 540 | 590 |
|                     | $56.5 \leq i \leq 237.9$  | 82  | 422 | 230 | 540 | 590 |
|                     | $274.5 \leq i \leq 534.5$   | 58  | 422 | 230 | 540 | 590 |
| <b>HDP 140 FAN_</b> | $8.4 \leq i \leq 14.4$  | 130 | 422 | 230 | 540 | 590 |
|                     | $16.3 \leq i \leq 56.2$   | 105 | 422 | 230 | 540 | 590 |
|                     | $65.1 \leq i \leq 277.5$  | 82  | 422 | 230 | 540 | 590 |
|                     | $315.9 \leq i \leq 495.3$   | 58  | 422 | 230 | 540 | 590 |
| <b>HDP 150 FAN_</b> | $7.9 \leq i \leq 14.1$  | 165 | 472 | 230 | 540 | 665 |
|                     | $15.4 \leq i \leq 38.1$   | 130 | 472 | 230 | 540 | 665 |
|                     | $43.5 \leq i \leq 77.0$   | 105 | 472 | 230 | 540 | 665 |
|                     | $89.0 \leq i \leq 303.1$  | 82  | 472 | 230 | 540 | 665 |
| <b>HDP 160 FAN_</b> | $9.0 \leq i \leq 15.9$  | 165 | 472 | 230 | 540 | 665 |
|                     | $17.5 \leq i \leq 43.1$   | 130 | 472 | 230 | 540 | 665 |
|                     | $49.4 \leq i \leq 87.0$   | 105 | 472 | 230 | 540 | 665 |
|                     | $101.1 \leq i \leq 342.2$   | 82  | 472 | 230 | 540 | 665 |
| <b>HDP 170 FAN_</b> |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |     |     |     |     |     |
| <b>HDP 180 FAN_</b> |   |     |     |     |     |     |





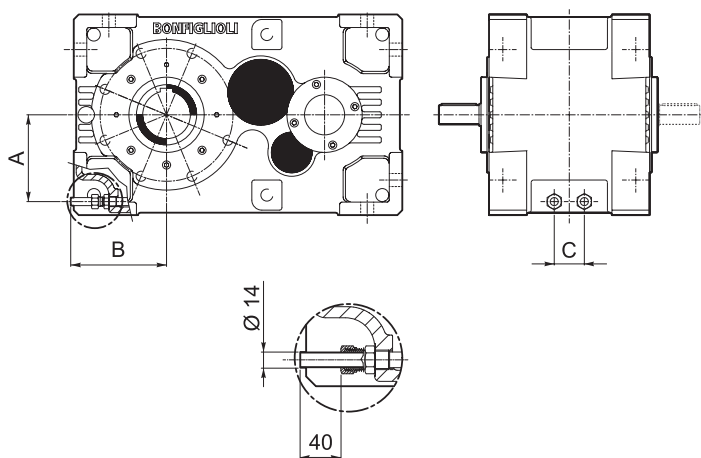
### 15.6.1.2 HEAT DISSIPATION THROUGH COOLING COIL

The cooling coil option **SR** is designed for integration in a cooling circuit to be provided by the installer.

For optimal efficiency the cooling circuit supply must comply with the following specifications:

- max. pressure 8 bar
- min flow rate 5 l/min for HDP 60 ... HDP 90
- min flow rate 10 l/min for HDP 100 ... HDP 140
- max. water temperature 20°C

The increased cooling effect obtained in these conditions is shown by the thermal capacity value  $P_{TSR}$ . See the section 17.



|            | A   | B   | C   |
|------------|-----|-----|-----|
| HDP 60_SR  | 147 | 170 | 60  |
| HDP 70_SR  | 147 | 170 | 60  |
| HDP 80_SR  | 173 | 190 | 60  |
| HDP 90_SR  | 190 | 210 | 60  |
| HDP 100_SR | 230 | 285 | 100 |
| HDP 110_SR | 230 | 270 | 100 |
| HDP 120_SR | 258 | 305 | 100 |
| HDP 125_SR | 288 | 345 | 100 |
| HDP 130_SR | 325 | 340 | 100 |
| HDP 140_SR | 325 | 365 | 100 |
| HDP 150    |     |     |     |
| HDP 160    |     |     |     |
| HDP 170    |     |     |     |
| HDP 180    |     |     |     |

### 15.6.1.3 AUXILIARY COOLING WITH AUTONOMOUS COOLING UNIT

Two types of cooling units are available, each in a range of sizes providing different cooling capacities. The two types use different cooling media for the oil: MCRW... – water/oil heat exchanger and MCRA... – air/oil heat exchanger.

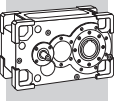
If an independent cooling unit is installed on the advice of the Bonfiglioli Technical Service, no additional forced lubrication devices are required. See section 15.6.2. The following chart shows device availability according to gearbox size.

Your selection must take into account the deficit in thermal capacity that must be made up by contribution  $P_{TMCRW}$  or  $P_{TMCRA}$  as shown in the chart in section 17.

|         | MCRW5<br>MCRA5 | MCRW9<br>MCRA9 | MCRW21<br>MCRA21 | MCRW34<br>MCRA34 | MCRW51<br>MCRA51 | MCRW70<br>MCRA70 |
|---------|----------------|----------------|------------------|------------------|------------------|------------------|
| HDP 100 | X              | X              |                  |                  |                  |                  |
| HDP 110 | X              | X              |                  |                  |                  |                  |
| HDP 120 | X              | X              | X (*)            |                  |                  |                  |
| HDP 125 | X              | X              | X (**)           |                  |                  |                  |
| HDP 130 | X              | X              | X                | X (**)           |                  |                  |
| HDP 140 | X              | X              | X                | X (**)           |                  |                  |
| HDP 150 | X              | X              | X                | X                | X (**)           |                  |
| HDP 160 | X              | X              | X                | X                | X (**)           |                  |
| HDP 170 |                |                |                  |                  |                  |                  |
| HDP 180 |                |                |                  |                  |                  |                  |

(\*) not available for mounting position B3.

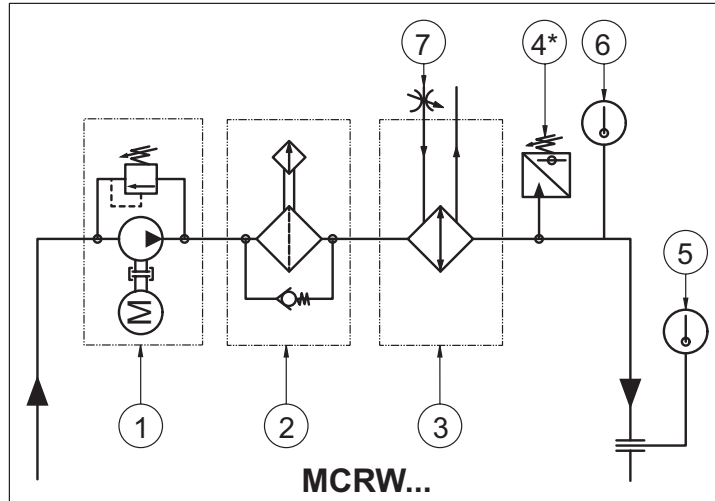
(\*\*) not available for double reduction units in the mounting position B3.



The main components of the cooling units are as follows:

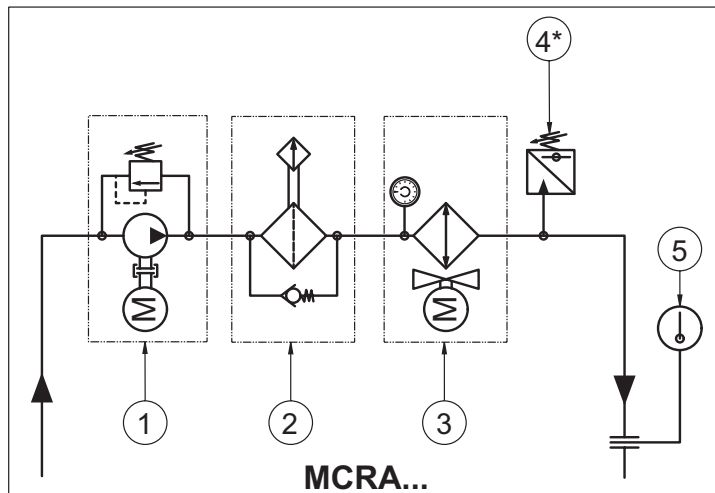
**MCRW...**

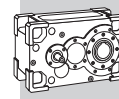
- 1) motorpump complete with by-pass circuit
- 2) filter with clogging visual indicator
- 3) water/oil heat exchanger
- 4) minimum pressure switch (only available in combination with forced lubrication)
- 5) maximum temperature thermostat
- 6) minimum temperature switch
- 7) electro-valve



**MCRA...**

- 1) motorpump complete with by-pass circuit
- 2) filter with clogging visual indicator
- 3) air/oil heat exchanger with thermostat
- 4) minimum pressure switch (only available in combination with forced lubrication)
- 5) maximum temperature thermostat





**General warnings:**

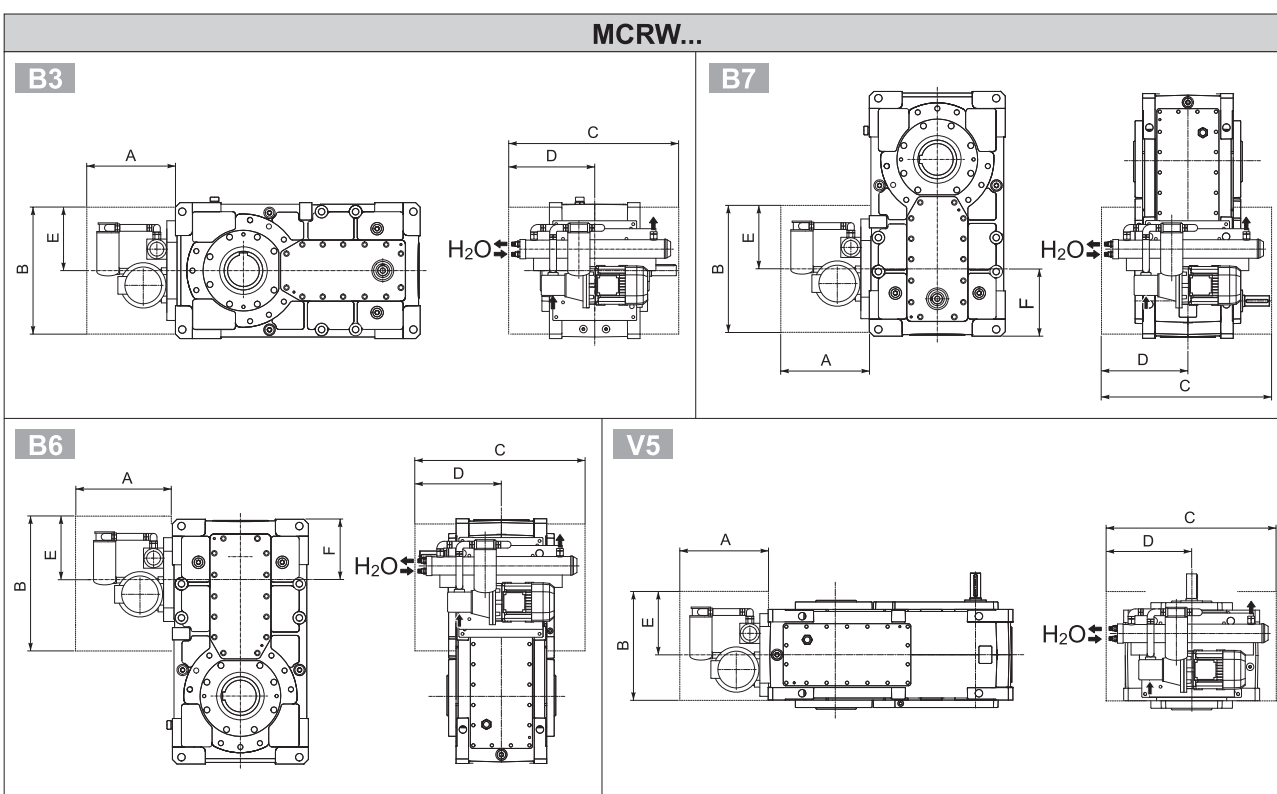
**MCRW...** : provide a water supply system that corresponds to the following specifications:

- max. pressure 10 bar
- maximum delivery temperature 20°C
- minimum flow rate  $Q_{H_2O}$  as per the chart:

|                    | MCRW5 | MCRW9 | MCRW21 | MCRW34 | MCRW51 | MCRW70                        |
|--------------------|-------|-------|--------|--------|--------|-------------------------------|
| $Q_{H_2O}$ [l/min] | 10    | 18    | 31     | 56     | 81     | BONFIGLIOLI TECHNICAL SERVICE |

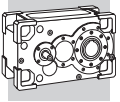
**MCRA...** : leave sufficient space around the heat exchanger to ensure an unrestricted air flow.

The cooling units are mounted as shown in the figure below.

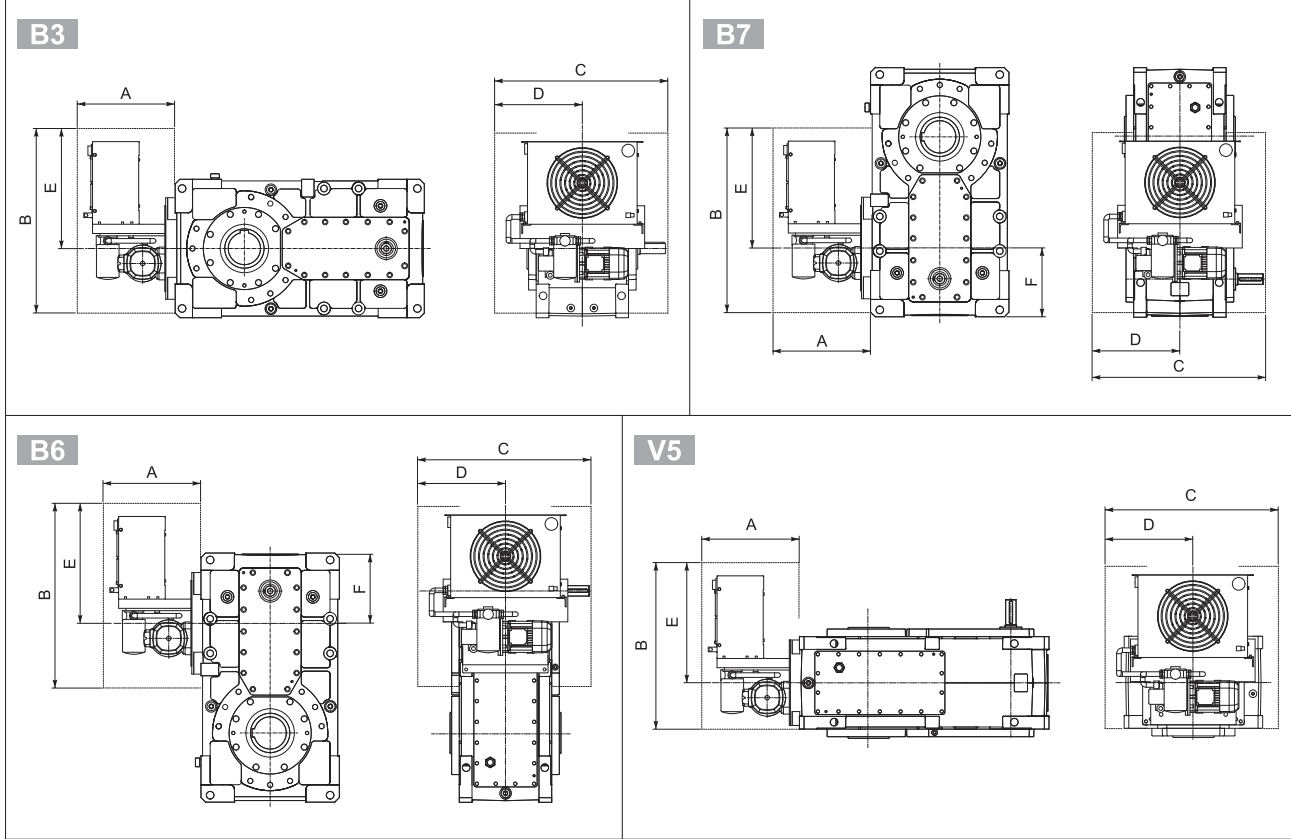


|        | A                             | B   | C    | D   | E   | F                 |       |         |       |                               |       |                   |       |                   |       |  |  |  |  |  |
|--------|-------------------------------|-----|------|-----|-----|-------------------|-------|---------|-------|-------------------------------|-------|-------------------|-------|-------------------|-------|--|--|--|--|--|
|        |                               |     |      |     |     | HDP 100 - HDP 110 |       | HDP 120 |       | HDP 125                       |       | HDP 130 - HDP 140 |       | HDP 150 - HDP 160 |       |  |  |  |  |  |
|        |                               |     |      |     |     | 2x                | 3x/4x | 2x      | 3x/4x | 2x                            | 3x/4x | 2x                | 3x/4x | 2x                | 3x/4x |  |  |  |  |  |
| MCRW5  | 360                           | 415 | 730  | 365 | 230 |                   |       |         |       |                               |       |                   |       |                   |       |  |  |  |  |  |
| MCRW9  | 360                           | 380 | 870  | 435 | 195 |                   |       |         |       |                               |       |                   |       |                   |       |  |  |  |  |  |
| MCRW21 | 400                           | 425 | 780  | 390 | 240 | 325               | 270   | 350     | 300   | BONFIGLIOLI TECHNICAL SERVICE | 420   | 380               | 475   | 395               |       |  |  |  |  |  |
| MCRW34 | 430                           | 650 | 1000 | 500 | 465 |                   |       |         |       |                               |       |                   |       |                   |       |  |  |  |  |  |
| MCRW51 | 520                           | 650 | 1250 | 625 | 465 |                   |       |         |       |                               |       |                   |       |                   |       |  |  |  |  |  |
| MCRW70 | BONFIGLIOLI TECHNICAL SERVICE |     |      |     |     |                   |       |         |       |                               |       |                   |       |                   |       |  |  |  |  |  |

Overall dimensions A, B, C, D and E are indicative only



MCRA...

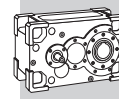


|        | A                             | B    | C    | D   | E   | F                 |       |         |       |                                  |       |                   |       |                   |       |  |  |  |  |  |
|--------|-------------------------------|------|------|-----|-----|-------------------|-------|---------|-------|----------------------------------|-------|-------------------|-------|-------------------|-------|--|--|--|--|--|
|        |                               |      |      |     |     | HDP 100 - HDP 110 |       | HDP 120 |       | HDP 125                          |       | HDP 130 - HDP 140 |       | HDP 150 - HDP 160 |       |  |  |  |  |  |
|        |                               |      |      |     |     | 2x                | 3x/4x | 2x      | 3x/4x | 2x                               | 3x/4x | 2x                | 3x/4x | 2x                | 3x/4x |  |  |  |  |  |
| MCRA5  | 400                           | 560  | 500  | 250 | 375 |                   |       |         |       |                                  |       |                   |       |                   |       |  |  |  |  |  |
| MCRA9  | 435                           | 650  | 640  | 320 | 465 |                   |       |         |       |                                  |       |                   |       |                   |       |  |  |  |  |  |
| MCRA21 | 440                           | 815  | 700  | 350 | 630 | 325               | 270   | 350     | 300   | BONFIGLIOLI<br>TECHNICAL SERVICE | 420   | 380               | 475   | 395               |       |  |  |  |  |  |
| MCRA34 | 500                           | 920  | 840  | 420 | 735 |                   |       |         |       |                                  |       |                   |       |                   |       |  |  |  |  |  |
| MCRA51 | 560                           | 1075 | 1000 | 500 | 890 |                   |       |         |       |                                  |       |                   |       |                   |       |  |  |  |  |  |
| MCRA70 | BONFIGLIOLI TECHNICAL SERVICE |      |      |     |     |                   |       |         |       |                                  |       |                   |       |                   |       |  |  |  |  |  |

Overall dimensions A, B, C, D and E are indicative only

15.6.1.4 HEATERS

In very low ambient temperatures it may prove necessary to pre-heat the lubricant in the sump before start-up and/or during operation. The **HE** option envisages the installation of an electrical heating element, supplied with a thermostat to detect when the minimum temperature needed for correct operation has been reached. The wiring necessary for the thermostat must be provided by the installer.



## 15.6.2 FORCED LUBRICATION

Pattern for MANDATORY specification of forced lubrication devices.

|                            |           |           |           |              |
|----------------------------|-----------|-----------|-----------|--------------|
|                            |           |           |           |              |
|                            | <b>B3</b> | <b>B6</b> | <b>B7</b> | <b>V5</b>    |
| <b>HDP 60 ... HDP 90</b>   | ●         | ●         | ●         | (*)          |
| <b>HDP 100 ... HDP 180</b> | ●         | ●         | ●         | OP...<br>MOP |

Remark: Forced lubrication devices may be replaced, upon approval from Bonfiglioli Technical Service, by independent cooling systems, type MCR...

(\*) Forced lubrication in this case is only optionally requested, NOT MANDATORY.

### 15.6.2.1 MECHANICAL PUMP

In continuous duty applications and V5 mounting position installations, an optional forced lubrication circuit is available on request, complete with a pump keyed to the shaft end opposite the drive side. This system ensures adequate lubrication of the top bearings.

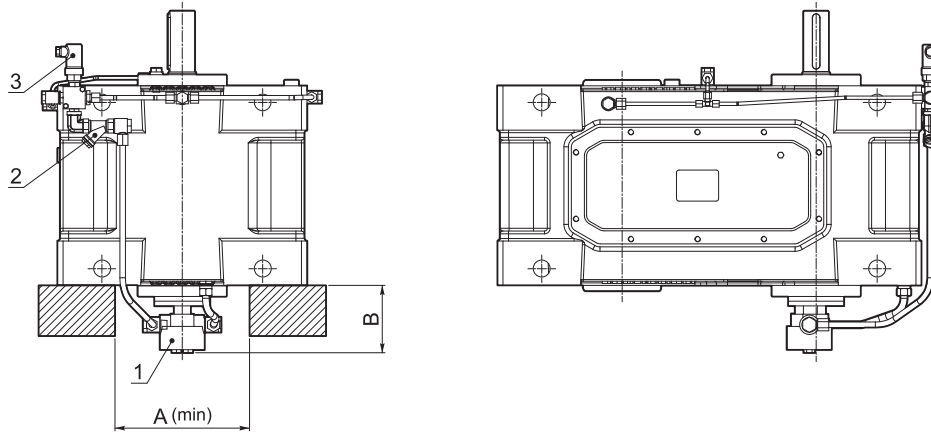
When ordering, specify the pump type - **OP1** or **OP2** to suit drive speed  $n_1$ . See the table below.

|                           | $n_1 = 1000 \text{ min}^{-1}$        | $n_1 = 1200 \text{ min}^{-1}$ | $n_1 = 1500 \text{ min}^{-1}$ |
|---------------------------|--------------------------------------|-------------------------------|-------------------------------|
| <b>HDP 60 ... HDP 140</b> | OP2                                  | OP2                           | OP1                           |
| <b>HDP 150, HDP 160</b>   | OP2                                  | OP2                           | OP2                           |
| <b>HDP 170, HDP 180</b>   | <b>BONFIGLIOLI TECHNICAL SERVICE</b> |                               |                               |

This option is not available with other configurations that use the same shaft end.



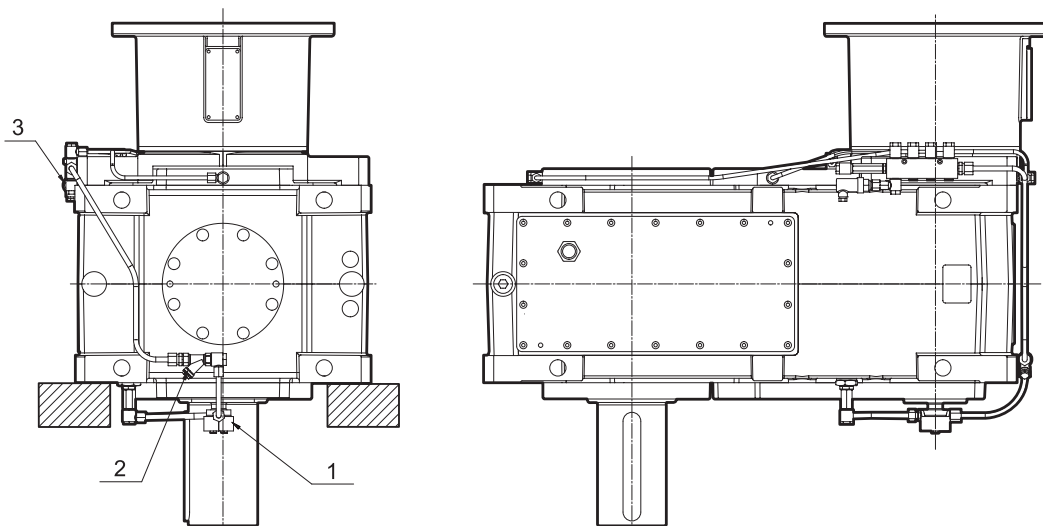
### HDP 60 ... HDP 90



- 1 - Pump
- 2 - Filter
- 3 - Minimum pressure switch

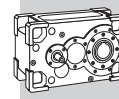
|            | A (min) | B   |
|------------|---------|-----|
| HDP 60_OP1 | 190     | 105 |
| HDP 60_OP2 | 190     | 105 |
| HDP 70_OP1 | 215     | 105 |
| HDP 70_OP2 | 215     | 105 |
| HDP 80_OP1 | 240     | 105 |
| HDP 80_OP2 | 240     | 130 |
| HDP 90_OP1 | 240     | 130 |
| HDP 90_OP2 | 240     | 130 |

### HDP 100 ... HDP 160



- 1 - Pump
- 2 - Filter
- 3 - Minimum pressure switch

Contact the Bonfiglioli Technical Service for overall dimensions.



The chart shows the applicability for the pump depending on the input and output configuration.

|                    |  |    | LL<br>RL<br>DL | LR<br>RR<br>DR | LD<br>RD<br>DD |
|--------------------|--|----|----------------|----------------|----------------|
| HDP 60 ... HDP 180 |  | LP | ⊖              | VP<br>GR<br>AD | ⊖              |
|                    |  | H  | ⊖              | VP<br>GR<br>AD | ⊖              |
|                    |  | S  | ⊖              | VP<br>GR<br>AD | ⊖              |

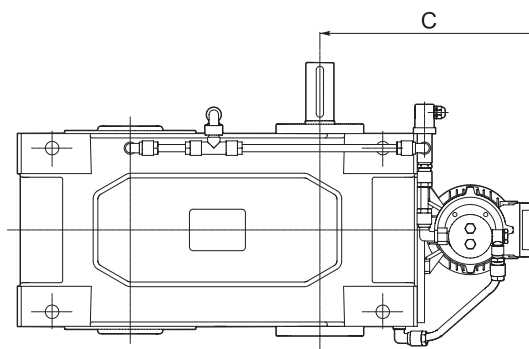
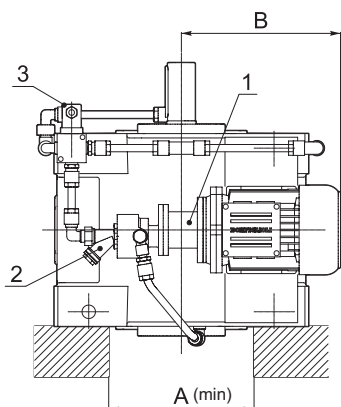
HDP

### 15.6.2.2 MOTOR PUMP

For intermittent duty applications and V5 mounting position installations, a forced lubrication circuit is available on request, complete with an independently powered motor pump. This system ensures a constant oil flow to the top bearings. Specify the **MOP** option.

Option MOP is not available if fan cooling - option FAN\_ - is also specified.

#### HDP 60 ... HDP 90



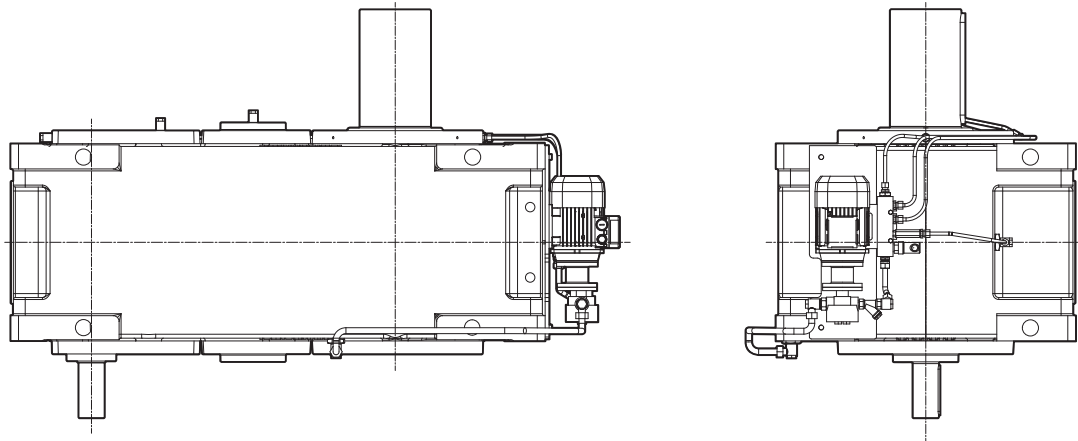
- 1 - Motorpump
- 2 - Filter
- 3 - Minimum pressure switch

|             | A (min) | B   | C   |
|-------------|---------|-----|-----|
| HDP 60_ MOP | 190     | 260 | 310 |
| HDP 70_ MOP | 215     | 260 | 330 |
| HDP 80_ MOP | 240     | 270 | 355 |
| HDP 90_ MOP | 240     | 285 | 390 |



**HDP 100 ... HDP 160**

**HDP**



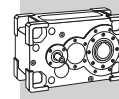
- 1 - Motorpump
- 2 - Filter
- 3 - Minimum pressure switch

Contact the Bonfiglioli Technical Service for overall dimensions.

The chart shows the applicability for the motorpump depending on the input and output configuration.

|                            |  |           | LL<br>RD<br>DL | LR<br>RR<br>DR | LD<br>RD<br>DD |
|----------------------------|--|-----------|----------------|----------------|----------------|
| <b>HDP 60 ... HDP 90</b>   |  | <b>LP</b> | VP             | VP<br>GR<br>AD | VP<br>GR       |
|                            |  | <b>H</b>  | VP             | VP<br>GR<br>AD | VP<br>GR       |
|                            |  | <b>S</b>  | VP             | VP<br>GR<br>AD | VP<br>GR       |
| <b>HDP 100 ... HDP 180</b> | No limitation on the basis of output or input configurations |           |                |                |                |





### 15.6.3 BACKSTOP DEVICE

The backstop device ensures that only one direction of rotation is allowed, and prevents the gearbox to be backdriven by the load connected to the output shaft.

In addition to verifying the shock loads shown in section 11.1, also make sure that the torque transmitted to the backstop  $M_1 = M_2 / (i \times \eta)$  is less than the admissible torque  $M_{1max}$  listed in the chart below.

The backstop is keyed to the input shaft opposite the drive end and it is accessible for inspection. Along with the specification of the backstop device, option **A**, the direction of free rotation for the output shaft (**CW** or **CCW**) must also be specified in the order. This option is not available with other configurations that use the same shaft end.

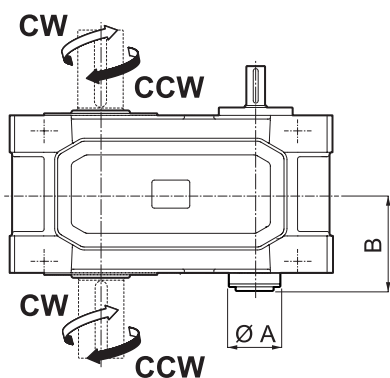
If special operating conditions require it, the user can reverse the direction of rotation of the backstop device by opening the backstop compartment and reversing the direction of the freewheel. If you need to perform this operation, contact Bonfiglioli's Technical Service for the necessary instructions. The type of backstop device used, based on centrifugally released shoes, does not require any regular maintenance.

This option is not available with other configurations that use the same shaft end.

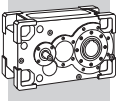


**Under continuous operating conditions, it is advisable to maintain a neutral rotation speed  $n_{1min}$  greater than that specified in the chart in order to ensure the effective centrifugal release of all the shoes and avoid unnecessary wear.**

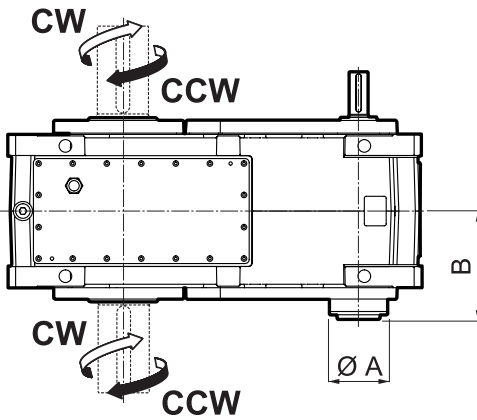
**For further details, contact the Bonfiglioli Technical Service.**




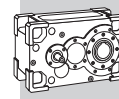
|                   | <i>i</i>                 | <b>A</b> | <b>B</b> | $M_{1max}$<br>[Nm] | $n_{1min}$<br>[min <sup>-1</sup> ] |
|-------------------|--------------------------|----------|----------|--------------------|------------------------------------|
| <b>HDP 60 2_A</b> | $7.1 \leq i \leq 15.2$   | 125      | 202.5    | 800                | 720                                |
|                   | $i = 17.3; 19.4$         | 100      | 197.5    | 375                | 780                                |
| <b>HDP 60 3_A</b> | $22.7 \leq i \leq 98.4$  | 100      | 197.5    | 375                | 780                                |
| <b>HDP 70 2_A</b> | $8.0 \leq i \leq 17.7$   | 125      | 202.5    | 800                | 720                                |
|                   | $i = 19.4; 22.6$         | 100      | 197.5    | 375                | 780                                |
| <b>HDP 70 3_A</b> | $25.5 \leq i \leq 114.4$ | 100      | 197.5    | 375                | 780                                |
| <b>HDP 80 2_A</b> | $8.1 \leq i \leq 22.6$   | 130      | 233      | 912                | 665                                |
| <b>HDP 80 3_A</b> | $25.8 \leq i \leq 111.4$ | 110      | 228      | 550                | 740                                |
| <b>HDP 90 2_A</b> | $7.9 \leq i \leq 22.4$   | 150      | 261      | 1400               | 610                                |
| <b>HDP 90 3_A</b> | $25.4 \leq i \leq 110.1$ | 125      | 256      | 800                | 720                                |



# HDP



|             | $i$  | A   | B     | $M_{1max}$<br>[Nm] | $n_{1min}$<br>[min <sup>-1</sup> ] |
|-------------|--|-----|-------|--------------------|------------------------------------|
| HDP 100 2_A | $7.4 \leq i \leq 21.8$   | 175 | 285   | 2350               | 490                                |
| HDP 100 3_A | $22.8 \leq i \leq 50.0$  | 150 | 298   | 1400               | 610                                |
|             | $55.5 \leq i \leq 107.6$   | 125 | 293   | 800                | 720                                |
| HDP 100 4_A | $110.6 \leq i \leq 507.9$  | 95  | 262   | 310                | 825                                |
| HDP 110 2_A | $8.1 \leq i \leq 25.0$   | 175 | 285   | 2350               | 490                                |
| HDP 110 3_A | $24.9 \leq i \leq 54.5$  | 150 | 298   | 1400               | 610                                |
|             | $60.7 \leq i \leq 123.4$   | 125 | 293   | 800                | 720                                |
| HDP 110 4_A | $120.9 \leq i \leq 499.4$  | 95  | 262   | 310                | 825                                |
| HDP 120 2_A | $7.9 \leq i \leq 25.4$   | 190 | 315   | 3050               | 480                                |
| HDP 120 3_A | $25.8 \leq i \leq 56.1$  | 150 | 285   | 1400               | 610                                |
|             | $64.3 \leq i \leq 125.2$   | 125 | 279   | 800                | 720                                |
| HDP 120 4_A | $128.0 \leq i \leq 523.7$  | 95  | 277   | 310                | 825                                |
| HDP 125 2_A | $8.9 \leq i \leq 25.0$   | 190 | 315   | 3050               | 480                                |
| HDP 125 3_A | $29.1 \leq i \leq 62.6$  | 150 | 285   | 1400               | 610                                |
|             | $72.5 \leq i \leq 123.6$   | 125 | 279   | 800                | 720                                |
| HDP 125 4_A | $144.4 \leq i \leq 506.5$  | 95  | 277   | 310                | 825                                |
| HDP 130 2_A | $7.3 \leq i \leq 12.3$   | 230 | 425   | 5600               | 420                                |
|             | $14.1 \leq i \leq 21.7$  | 210 | 395   | 4500               | 450                                |
| HDP 130 3_A | $21.8 \leq i \leq 48.1$  | 190 | 366   | 3050               | 480                                |
|             | $56.5 \leq i \leq 108.3$   | 175 | 366   | 2350               | 490                                |
| HDP 130 4_A | $i = 111.2; 121.4$   | 110 | 332   | 550                | 740                                |
| HDP 140 2_A | $8.4 \leq i \leq 14.4$   | 230 | 425   | 5600               | 420                                |
|             | $16.3 \leq i \leq 24.9$  | 210 | 395   | 4500               | 450                                |
| HDP 140 3_A | $25.1 \leq i \leq 56.2$  | 190 | 366   | 3050               | 480                                |
|             | $65.1 \leq i \leq 124.7$   | 175 | 342   | 2350               | 490                                |
| HDP 140 4_A | $141.6 \leq i \leq 495.3$  | 110 | 332   | 550                | 740                                |
| HDP 150 2_A | $7.9 \leq i \leq 14.1$   | 290 | 487.5 | 10500              | 455                                |
|             | $15.4 \leq i \leq 19.6$  | 230 | 447.5 | 5600               | 420                                |
| HDP 150 3_A | $21.5 \leq i \leq 38.1$  | 230 | 445.5 | 5600               | 420                                |
|             | $43.5 \leq i \leq 77.0$  | 190 | 417   | 3050               | 480                                |
| HDP 150 4_A | $89.0 \leq i \leq 303.1$   | 150 | 385   | 1400               | 610                                |
| HDP 160 2_A | $9.0 \leq i \leq 15.9$   | 290 | 487.5 | 10500              | 455                                |
|             | $17.5 \leq i \leq 22.1$  | 230 | 447.5 | 5600               | 420                                |
| HDP 160 3_A | $24.4 \leq i \leq 43.1$  | 230 | 445.5 | 5600               | 420                                |
|             | $49.4 \leq i \leq 87.0$  | 190 | 417   | 3050               | 480                                |
| HDP 160 4_A | $101.1 \leq i \leq 342.2$  | 150 | 385   | 1400               | 610                                |
| HDP 170     |  BONFIGLIOLI TECHNICAL SERVICE |     |       |                    |                                    |
| HDP 180     |  |     |       |                    |                                    |



#### 15.6.4 REINFORCED BEARINGS

Optional heavy-duty bearings are also available, with increased overhung load capacity. The HDB option can only be applied to HDP 60 ... HDP 90 units with the LP shaft arrangement (solid shaft). Option cannot be specified along with variant DW -drywell-.

#### 15.6.5 SEALS AND GASKETS

On request, gearboxes can be equipped with different oil sealing systems. These are:

**TK** - Taconite seals are recommended for environments characterised by the presence of abrasive dust or powders. Taconite seals incorporate a combination of sealing rings, labyrinths and a grease chamber. This option is not available for HDP 60 ... HDP 90.

Greasing must be ensured as part of the scheduled maintenance programme.

**VS** – Fluoro elastomer compound seal rings.

**DS** – Dual set of seal rings at each shaft end.

**DVS** – Dual set of Fluoro elastomer compound seal rings at each shaft end.

#### 15.6.6 SENSORS

**Bimetal thermostat** – If the **TG** option is specified, a bimetallic thermostat detects when the oil temperature exceeds  $90^{\circ}\text{C} \pm 5^{\circ}\text{C}$ .

The device is supplied with the gear unit, but installation and wiring are the responsibility of the installer.

**Oil level indicator** – If the **OLG** option is specified in the order, the gearbox is supplied with a device to permit remote control of the oil level. The device best operates when the gearbox is idle and should be bypassed when the gearbox is operating. Wiring is the responsibility of the installer.

The device may not be available in combination with other accessories and/or particular product configurations. Please contact Bonfiglioli Technical Service for advise.

#### 15.6.7 DRYWELL

The Drywell device, option **DW**, guarantees proper sealing for the output shaft. It can only be applied to gearboxes in vertical mounting position V5.

When specified, it necessarily requires the installation of a forced lubrication system, selected from those available for the gearbox, as illustrated in the relevant section of this catalogue.

At scheduled intervals, check and refill the grease in the vane underneath the output shaft's bottom bearing.

The chart shows the applicability for the drywell depending on the input and output configurations.



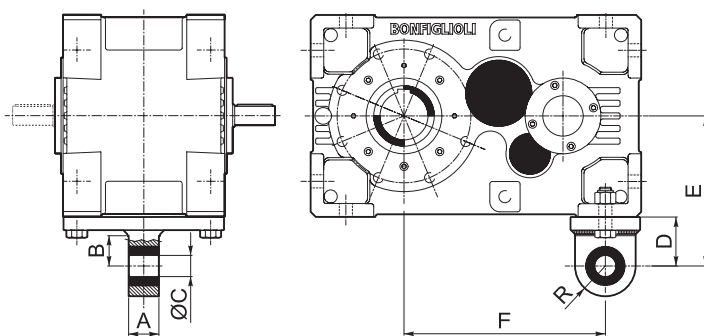
|                    |  |    | LR    | DR    | LD       | DD       | LL | DL |
|--------------------|--|----|-------|-------|----------|----------|----|----|
| HDP 60 ... HDP 180 |  | LP | VP GR | VP GR | VP GR GL | VP GR GL | AD | AD |
|                    |  | H  | VP GR | ⊖     | VP GR GL | ⊖        | AD | ⊖  |
|                    |  | S  | VP GR | ⊖     | VP GR GL | ⊖        | AD | ⊖  |

The drywell is **NOT available** for the gear ratios listed here under:

| ⊖ DW | HDP 60 | HDP 70 | HDP 80 | HDP 90 | HDP 100                       | HDP 110 | HDP 120 | HDP 125 | HDP 130 | HDP 140 | HDP 150 | HDP 160 | HDP 170 | HDP 180 |
|------|--------|--------|--------|--------|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| i =  | 17.3   | 19.4   | —      | 20.1   | BONFIGLIOLI TECHNICAL SERVICE |         |         |         |         |         |         |         |         |         |
|      | 19.4   | 22.6   |        | 22.4   |                               |         |         |         |         |         |         |         |         |         |
|      | 43.7   | 49.1   |        | 65.8   |                               |         |         |         |         |         |         |         |         |         |
|      | 49.1   | 57.0   |        | 73.3   |                               |         |         |         |         |         |         |         |         |         |
|      | 87.6   | 98.5   |        | 98.9   |                               |         |         |         |         |         |         |         |         |         |
|      | 98.4   | 114.4  |        | 110.1  |                               |         |         |         |         |         |         |         |         |         |

### 15.6.8 FIXING ELEMENTS

For shaft-mounted installations, HDP 60 ... HDP 90 gearboxes can be fitted with an electro-welded steel torque arm, complete with anti-vibration bushing.



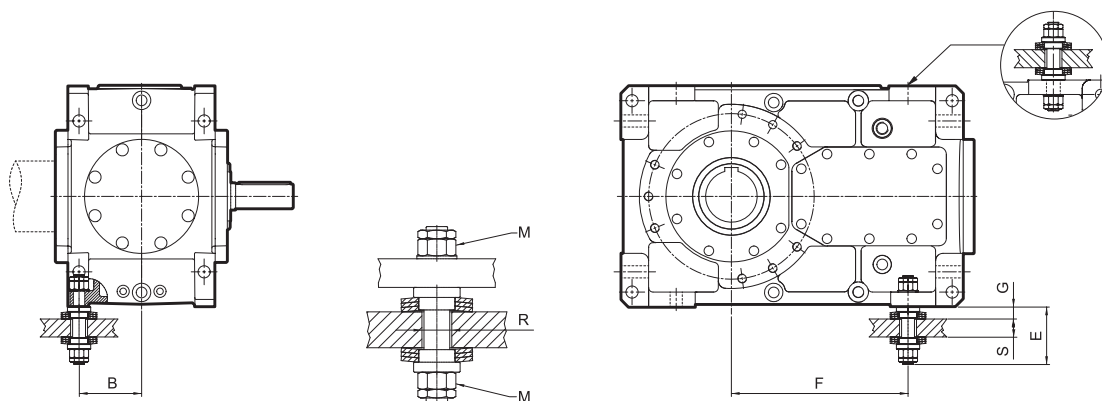
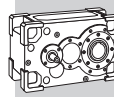
|           | A  | B  | C  | D   | E   | F   | R  |
|-----------|----|----|----|-----|-----|-----|----|
| HDP 60_TA | 40 | 47 | 32 | 76  | 251 | 340 | 47 |
| HDP 70_TA | 40 | 47 | 32 | 76  | 251 | 375 | 47 |
| HDP 80_TA | 60 | 60 | 42 | 97  | 297 | 400 | 60 |
| HDP 90_TA | 60 | 68 | 42 | 113 | 338 | 460 | 68 |


To perform the same function, gearboxes HDP 100 and larger can be supplied with a hardened steel bolt to secure the units to the machine framework.

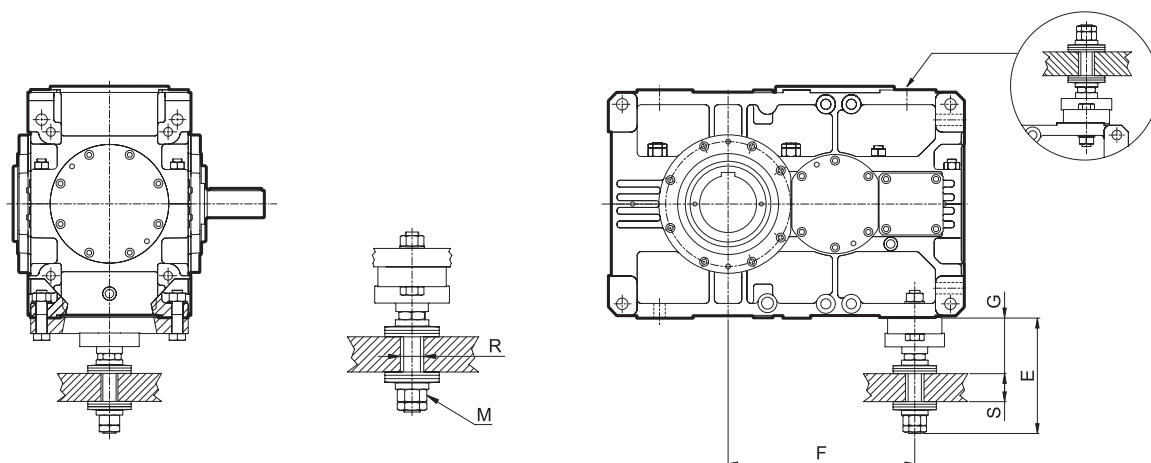
Vibration damping cup springs are also supplied within the kit. The customer must adjust the preload of these springs during installation, respecting the value G given in the chart below.



The reaction bolt must be fitted on the side of the gearbox next to the driven machine and in the farthest hole from output shaft centre (see dimension F in the following figure).

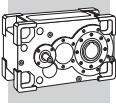
Fitting the bolt on same side as the inspection cover is not possible. In this case please contact Bonfiglioli Technical Service for advise.



|              | F   | B   | E   | G<br>Rated value | M   | R  | S       | <br>DIN2093 |
|--------------|-----|-----|-----|------------------|-----|----|---------|--|
| HDP 100 2_TA | 420 | 160 | 153 | 33.4             | M27 | 35 | 30 - 40 | A100   |
| HDP 100 3_TA | 540 |     |     |                  |     |    |         |  |
| HDP 100 4_TA | 540 |     |     |                  |     |    |         |  |
| HDP 110 2_TA | 435 | 160 | 153 | 33.4             | M27 | 35 | 30 - 40 | A100   |
| HDP 110 3_TA | 555 |     |     |                  |     |    |         |  |
| HDP 110 4_TA | 555 |     |     |                  |     |    |         |  |
| HDP 120 2_TA | 480 | 170 | 166 | 33.4             | M30 | 40 | 40 - 50 | A100   |
| HDP 120 3_TA | 630 |     |     |                  |     |    |         |  |
| HDP 120 4_TA | 630 |     |     |                  |     |    |         |  |
| HDP 125 2_TA | 530 | 170 | 166 | 33.4             | M30 | 40 | 40 - 50 | A100   |
| HDP 125 3_TA | 680 |     |     |                  |     |    |         |  |
| HDP 125 4_TA | 680 |     |     |                  |     |    |         |  |
| HDP 130 2_TA | 585 | 216 | 205 | 42.7             | M36 | 45 | 50 - 60 | A125   |
| HDP 130 3_TA | 780 |     |     |                  |     |    |         |  |
| HDP 130 4_TA | 780 |     |     |                  |     |    |         |  |
| HDP 140 2_TA | 625 | 216 | 205 | 42.7             | M36 | 45 | 50 - 60 | A125   |
| HDP 140 3_TA | 790 |     |     |                  |     |    |         |  |
| HDP 140 4_TA | 790 |     |     |                  |     |    |         |  |



|              | F   | E   | G<br>Rated value | M     | R  | S       | <br>DIN2093 |
|--------------|---|-----|------------------|-------|----|---------|--|
| HDP 150 2_TA | 687.5   | 405 | 204.3            | M48x2 | 52 | 70 - 80 | A160   |
| HDP 150 3_TA | 877.5   |     |                  |       |    |         |  |
| HDP 150 4_TA | 877.5   |     |                  |       |    |         |  |
| HDP 160 2_TA | 727.5   | 405 | 204.3            | M48x2 | 52 | 70 - 80 | A160   |
| HDP 160 3_TA | 927.5   |     |                  |       |    |         |  |
| HDP 160 4_TA | 927.5   |     |                  |       |    |         |  |
| HDP 170      |  BONFIGLIOLI TECHNICAL SERVICE |     |                  |       |    |         |  |
| HDP 180      |   |     |                  |       |    |         |  |

**15.6.9 SURFACE PROTECTION****HDP 60 ... 90**

When no specific protection class is requested, the painted (ferrous) surfaces of gearboxes are protected to at least corrosivity class C2 (UNI EN ISO 12944-2). For improved resistance to atmospheric corrosion, gearboxes can be delivered with C3 and C4 surface protection, obtained by painting the complete gearbox.

**HDP 100 ... 180**

When no specific protection class is requested, the painted surfaces of gearboxes are protected to at least corrosivity class C3 (UNI EN ISO 12944-2). For improved resistance to atmospheric corrosion, gearboxes can be delivered with C4 surface protection, obtained by painting the complete gearbox.

| <b>SURFACE PROTECTION</b> | Typical environments  | Maximum surface temperature | Corrosivity class according to UNI EN ISO 12944-2 |
|---------------------------|---|-----------------------------|---|
| <b>C3</b>                 | Urban and industrial environments with up to 100% relative humidity (medium air pollution)              | 120°C                       | C3  |
| <b>C4</b>                 | Industrial areas, coastal areas, chemical plant, with up to 100% relative humidity (high air pollution) | 120°C                       | C4  |

Gearboxes with optional protection to class C3 or C4 are available in a choice of colours. If no specific colour is requested (see the “PAINTING” option) gearboxes are finished in RAL 7042. Gearboxes can also be supplied with surface protection for corrosivity class C5 according to UNI EN ISO 12944-2. Contact our Technical Service for further details.

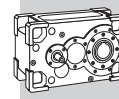
**15.6.10 PAINTING**

Gearboxes with optional protection to class C3 or C4 are available in the colours listed in the following table.

| <b>PAINTING</b> | Colour          | RAL number |
|-----------------|-----------------|------------|
| <b>RAL7042*</b> | Traffic Grey A  | 7042       |
| <b>RAL5010</b>  | Gentian Blue    | 5010       |
| <b>RAL9005</b>  | Jet Black       | 9005       |
| <b>RAL9006</b>  | White Aluminium | 9006       |
| <b>RAL9010</b>  | Pure White      | 9010       |

\* Gearboxes are supplied in this standard colour if no other colour is specified.

NOTE - “PAINTING” options can only be specified in conjunction with “SURFACE PROTECTION” options.



## 15.6.11 CERTIFICATES

### **AC - Certificate of compliance**

The document certifies the compliance of the product with the purchase order and the construction in conformity with the applicable procedures of the Bonfiglioli Quality System.

### **CC - Inspection certificate**

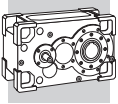
The document entails checking on order compliance, the visual inspection of external conditions and of mating dimensions. Checking on main functional parameters in unloaded conditions is also performed along with oil seal proofing, both in static and in running conditions. Units inspected are sampled within the shipping batch and marked individually.

### **CT - Type certificate**

Further to the activities relevant to the Inspection certificate the following checks are also conducted:

- noise
- surface temperature
- tightness of external hardware
- functionality of ancillary devices, if fitted

All checks are conducted with the gear unit running unloaded. Units inspected are sampled within the shipping batch and marked individually.



## 15.7 EXECUTION FOR EXTRUDER

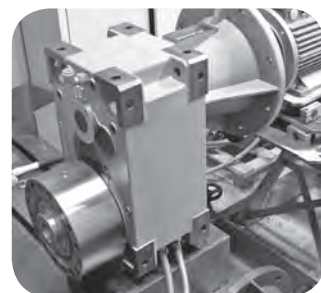
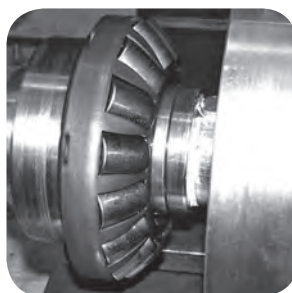
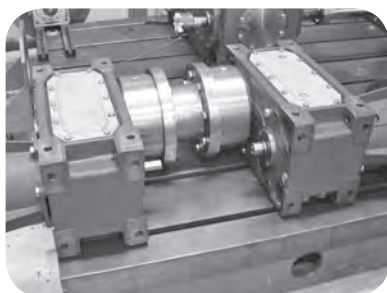
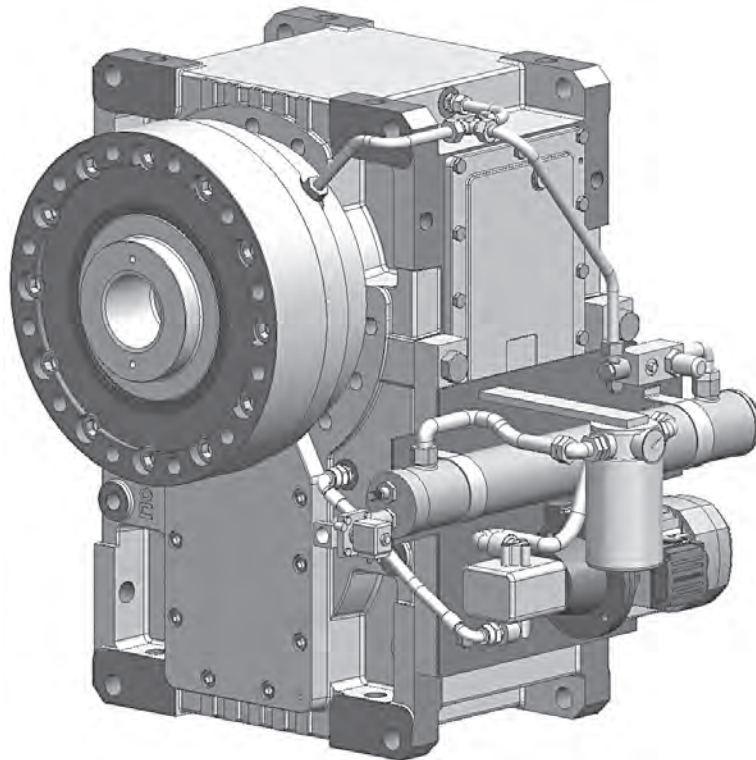
The HDPE series is the configuration specifically developed for **single-screw extruder drive** generated from the renowned heavy duty series HDP, with which it shares most of the component parts and gearing.

Mounted forward to the sturdy nodular cast iron case, and housed into a robust extruder support, HDPE units feature a heavy duty spherical roller thrust bearing of series 294...E, exclusively sourced from primary brands.

### Design features

- Spheroidal graphite cast iron casing with universal mounting options
- Thrust bearing optimised for each application
- Radial roller bearings on the output shaft
- Customisable extruder screw/cylinder interface dimensions
- External cooling and forced lubrication units
- Lubrication shared between gearbox casing and screw box
- Fluoro elastomer compound seal rings

For more information see HDPE catalog.







## 16 REFERENCE TORQUE

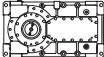
The torque values given in the table are influenced by the following elements: gear teeth, shafts and couplings. Performance may therefore vary with application conditions (see the “Thermal Capacity and Rating Charts”).

| HDP            |       |                         |        |        |        |         |         |         |         |         |         |         |         |         |         |
|----------------|-------|-------------------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                |       | Mn <sub>2REF</sub> [Nm] |        |        |        |         |         |         |         |         |         |         |         |         |         |
| i <sub>N</sub> |       | HDP 60                  | HDP 70 | HDP 80 | HDP 90 | HDP 100 | HDP 110 | HDP 120 | HDP 125 | HDP 130 | HDP 140 | HDP 150 | HDP 160 | HDP 170 | HDP 180 |
| 2x             | 7.1   | 5.190                   | —      | —      | —      | 24.400  | —       | —       | —       | 68.800  | —       | —       | —       | —       | —       |
|                | 8.0   | 4.720                   | 6.200  | 10.350 | 14.000 | 24.710  | 26.080  | 36.820  | —       | 65.830  | 86.990  | 113.880 | —       | 150.450 | —       |
|                | 9.0   | 5.190                   | 7.080  | 12.050 | 15.600 | 24.840  | 27.420  | 38.290  | 42.100  | 68.360  | 86.040  | 116.900 | 129.320 | 174.600 | 167.150 |
|                | 10.0  | 4.720                   | 6.750  | 11.350 | 17.700 | 24.740  | 26.540  | 37.550  | 43.940  | 65.410  | 86.990  | 112.740 | 150.940 | 189.150 | 193.450 |
|                | 11.2  | 5.190                   | 7.080  | 12.350 | 17.120 | 25.230  | 27.880  | 39.010  | 42.910  | 67.690  | 85.490  | 123.320 | 144.620 | 188.900 | 207.610 |
|                | 12.5  | 4.720                   | 6.750  | 11.500 | 17.700 | 24.740  | 26.940  | 38.140  | 44.300  | 64.770  | 86.990  | 115.490 | 142.390 | 197.670 | 209.900 |
|                | 14.0  | 5.190                   | 7.080  | 12.500 | 17.120 | 25.620  | 28.270  | 39.590  | 43.590  | 67.180  | 84.660  | 111.370 | 151.130 | 188.150 | 215.480 |
|                | 16.0  | 4.720                   | 6.750  | 11.750 | 17.000 | 24.570  | 27.330  | 38.580  | 44.980  | 64.290  | 86.990  | 123.610 | 142.840 | 188.900 | 204.880 |
|                | 18.0  | 5.190                   | 7.080  | 11.950 | 17.120 | 25.890  | 28.660  | 40.030  | 44.090  | 66.730  | 84.030  | 114.210 | 142.390 | 195.560 | 209.900 |
|                | 20.0  | 4.720                   | 6.750  | 11.900 | 17.700 | 24.410  | 27.660  | 39.000  | 45.480  | 63.860  | 86.990  | 110.150 | 149.410 | 186.170 | 213.180 |
|                | 22.4  | —                       | 7.080  | 12.600 | 17.120 | 22.790  | 28.990  | 39.780  | 44.580  | 64.070  | 83.480  | —       | 141.240 | —       | 202.720 |
| 25.0           | —     | —                       | —      | —      | —      | 26.960  | 36.630  | 45.950  | —       | 82.230  | —       | —       | —       | —       |         |
| 3x             | 22.4  | 5.190                   | —      | —      | —      | 26.130  | —       | —       | —       | 66.280  | —       | 113.760 | —       | 183.920 | —       |
|                | 25.0  | 4.720                   | 6.750  | 9.900  | 17.900 | 24.260  | 30.360  | 40.090  | —       | 63.450  | 77.440  | 113.030 | 129.180 | 190.190 | 204.380 |
|                | 28.0  | 5.190                   | 7.080  | 11.500 | 17.120 | 25.990  | 29.680  | 39.550  | 45.940  | 65.790  | 82.930  | 109.030 | 146.300 | 182.320 | 202.450 |
|                | 31.5  | 4.720                   | 6.750  | 11.650 | 17.900 | 24.140  | 30.740  | 40.810  | 47.450  | 62.990  | 84.810  | 117.200 | 139.790 | 188.900 | 200.130 |
|                | 35.5  | 5.190                   | 7.080  | 12.600 | 17.120 | 25.860  | 29.540  | 39.330  | 46.680  | 65.430  | 82.330  | 112.010 | 143.440 | 190.190 | 209.900 |
|                | 40.0  | 4.720                   | 6.750  | 12.600 | 17.900 | 24.030  | 31.130  | 40.620  | 48.180  | 62.650  | 84.810  | 108.070 | 146.300 | 182.210 | 202.450 |
|                | 45.0  | 5.190                   | 7.080  | 12.600 | 17.120 | 25.740  | 29.400  | 39.150  | 47.230  | 65.120  | 81.890  | 117.200 | 138.540 | 183.920 | 198.410 |
|                | 50.0  | 4.720                   | 6.750  | 11.950 | 17.900 | 23.920  | 31.100  | 40.410  | 48.720  | 62.360  | 82.170  | 111.000 | 138.770 | 189.610 | 204.380 |
|                | 56.0  | 5.190                   | 7.080  | 12.600 | 17.120 | 25.650  | 29.270  | 38.960  | 47.750  | 64.780  | 81.510  | 107.110 | 145.150 | 180.610 | 202.450 |
|                | 63.0  | 4.720                   | 6.750  | 12.600 | 17.900 | 23.830  | 30.740  | 40.250  | 49.240  | 62.050  | 84.810  | 117.200 | 137.300 | 188.900 | 196.680 |
|                | 71.0  | 5.190                   | 7.080  | 12.600 | 17.120 | 25.880  | 29.160  | 38.800  | 46.680  | 65.650  | 81.100  | 110.230 | 143.440 | 188.320 | 209.900 |
|                | 80.0  | 4.720                   | 6.750  | 12.000 | 17.900 | 24.050  | 31.130  | 40.600  | 48.180  | 62.890  | 84.810  | 106.390 | 144.140 | 179.410 | 202.450 |
|                | 90.0  | 5.190                   | 7.080  | 12.600 | 17.120 | 26.850  | 29.430  | 39.160  | 47.230  | 67.750  | 82.200  | —       | 136.370 | —       | 195.370 |
|                | 100.0 | 4.720                   | 6.750  | 12.600 | 17.900 | 24.880  | 31.350  | 41.250  | 48.720  | 64.910  | 82.170  | —       | —       | —       | —       |
| 112.0          | —     | 7.080                   | 12.600 | 17.120 | 23.340 | 30.550  | 40.740  | 47.750  | 63.140  | 84.850  | —       | —       | —       | —       |         |
| 125.0          | —     | —                       | —      | —      | —      | 27.630  | 37.570  | 49.240  | —       | 78.870  | —       | —       | —       | —       |         |
| 4x             | 90.0  | —                       | —      | —      | —      | —       | —       | —       | —       | —       | —       | 116.800 | —       | 183.920 | —       |
|                | 100.0 | —                       | —      | —      | —      | —       | —       | —       | —       | —       | —       | 116.060 | 132.640 | 190.190 | 204.380 |
|                | 112.0 | —                       | —      | —      | —      | 27.790  | —       | —       | —       | 69.570  | —       | 112.070 | 146.300 | 182.320 | 202.450 |
|                | 125.0 | —                       | —      | —      | —      | 24.880  | 31.350  | 41.250  | —       | 66.770  | —       | 117.200 | 143.630 | 188.900 | 205.480 |
|                | 140.0 | —                       | —      | —      | —      | 28.210  | 31.630  | 40.920  | 46.680  | 69.570  | 87.060  | 117.090 | 142.380 | 190.190 | 209.900 |
|                | 160.0 | —                       | —      | —      | —      | 24.880  | 31.790  | 41.250  | 48.180  | 66.770  | 84.860  | 114.780 | 146.300 | 182.320 | 202.450 |
|                | 180.0 | —                       | —      | —      | —      | 28.210  | 31.570  | 40.920  | 46.680  | 69.570  | 87.060  | 116.800 | 147.070 | 183.920 | 207.020 |
|                | 200.0 | —                       | —      | —      | —      | 24.880  | 31.570  | 41.250  | 48.180  | 66.770  | 81.580  | 117.090 | 132.640 | 190.190 | 204.380 |
|                | 224.0 | —                       | —      | —      | —      | 28.210  | 31.790  | 40.920  | 47.230  | 69.570  | 87.060  | 114.780 | 146.300 | 182.320 | 202.450 |
|                | 250.0 | —                       | —      | —      | —      | 24.880  | 31.350  | 41.250  | 49.240  | 66.770  | 81.230  | 117.200 | 147.070 | 188.900 | 205.480 |
|                | 280.0 | —                       | —      | —      | —      | 28.210  | 31.790  | 40.920  | 47.750  | 69.570  | 87.060  | 117.090 | 140.530 | 190.190 | 209.900 |
|                | 315.0 | —                       | —      | —      | —      | 25.110  | 31.570  | 41.250  | 48.180  | 66.770  | 84.860  | 114.780 | 146.300 | 182.320 | 202.450 |
|                | 355.0 | —                       | —      | —      | —      | 28.210  | 31.790  | 40.920  | 47.230  | 69.570  | 87.060  | —       | 147.070 | —       | 207.020 |
|                | 400.0 | —                       | —      | —      | —      | 25.410  | 31.570  | 41.250  | 48.180  | 66.770  | 84.860  | —       | —       | —       | —       |
|                | 450.0 | —                       | —      | —      | —      | 28.210  | 31.790  | 40.920  | 47.230  | 66.770  | 87.060  | —       | —       | —       | —       |
| 500.0          | —     | —                       | —      | —      | 25.410 | 31.570  | 41.250  | 49.240  | 63.140  | 82.170  | —       | —       | —       | —       |         |



17 THERMAL CAPACITY AND RATING CHARTS

HDP

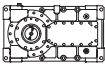
| HDP 60  |      |                                |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i    | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |      |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 60 2  | 7.1  | 252                            | 4300           | 118            | 52                            | 72                    | 84                | *                        | *                     | 64                |
| HDP 60 2  | 8.0  | 224                            | 4410           | 108            | 52                            | 72                    | 84                | *                        | 46                    | 64                |
| HDP 60 2  | 9.0  | 201                            | 4630           | 101            | 52                            | 72                    | 84                | *                        | 46                    | 64                |
| HDP 60 2  | 10.1 | 179                            | 4690           | 91             | 57                            | 77                    | 89                | 37                       | 51                    | 69                |
| HDP 60 2  | 11.2 | 161                            | 4960           | 87             | 57                            | 77                    | 89                | 37                       | 51                    | 69                |
| HDP 60 2  | 12.5 | 144                            | 4720           | 74             | 61                            | 81                    | 93                | 41                       | 55                    | 73                |
| HDP 60 2  | 13.5 | 133                            | 5190           | 75             | 61                            | 81                    | 93                | 41                       | 55                    | 73                |
| HDP 60 2  | 15.2 | 118                            | 4720           | 61             | —                             | —                     | —                 | 44                       | 58                    | 76                |
| HDP 60 2  | 17.3 | 104                            | 5190           | 59             | —                             | —                     | —                 | 44                       | 58                    | 76                |
| HDP 60 2  | 19.4 | 93                             | 4720           | 48             | —                             | —                     | —                 | 46                       | 60                    | 78                |
| HDP 60 3  | 22.7 | 79                             | 4460           | 39             | 39                            | 53                    | 57                | 26                       | 36                    | 44                |
| HDP 60 3  | 25.5 | 71                             | 4630           | 36             | —                             | —                     | —                 | 26                       | 36                    | 44                |
| HDP 60 3  | 28.2 | 64                             | 4960           | 35             | —                             | —                     | —                 | 26                       | 36                    | 44                |
| HDP 60 3  | 31.7 | 57                             | 4720           | 30             | —                             | —                     | —                 | 27                       | 37                    | 45                |
| HDP 60 3  | 34.2 | 53                             | 5180           | 30             | —                             | —                     | —                 | 27                       | 37                    | 45                |
| HDP 60 3  | 38.5 | 47                             | 4720           | 25             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 43.7 | 41                             | 5190           | 24             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 49.1 | 37                             | 4720           | 19.3           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 56.6 | 32                             | 5190           | 18.4           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 63.6 | 28.3                           | 4720           | 14.9           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 68.6 | 26.2                           | 5190           | 15.1           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 77.1 | 23.3                           | 4720           | 12.3           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 87.6 | 20.6                           | 5190           | 11.9           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 98.4 | 18.3                           | 4720           | 9.6            | —                             | —                     | —                 | —                        | —                     | —                 |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



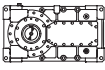
**HDP**

| HDP 60  |      |                               |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i    | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |      |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 60 2  | 7.1  | 210                           | 4570           | 105            | 57                            | 74                    | 89                | *                        | 50                    | 69                |
| HDP 60 2  | 8.0  | 187                           | 4630           | 94             | 57                            | 74                    | 89                | *                        | 50                    | 69                |
| HDP 60 2  | 9.0  | 167                           | 4900           | 89             | 57                            | 74                    | 89                | 37                       | 50                    | 69                |
| HDP 60 2  | 10.1 | 149                           | 4720           | 77             | 61                            | 78                    | 93                | 41                       | 54                    | 73                |
| HDP 60 2  | 11.2 | 134                           | 5190           | 76             | 61                            | 78                    | 93                | 41                       | 54                    | 73                |
| HDP 60 2  | 12.5 | 120                           | 4720           | 62             | —                             | —                     | —                 | 44                       | 57                    | 76                |
| HDP 60 2  | 13.5 | 111                           | 5190           | 63             | —                             | —                     | —                 | 44                       | 57                    | 76                |
| HDP 60 2  | 15.2 | 99                            | 4720           | 51             | —                             | —                     | —                 | 46                       | 59                    | 78                |
| HDP 60 2  | 17.3 | 87                            | 5190           | 49             | —                             | —                     | —                 | 46                       | 59                    | 78                |
| HDP 60 2  | 19.4 | 77                            | 4720           | 40             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 22.7 | 66                            | 4740           | 35             | —                             | —                     | —                 | 28                       | 37                    | 46                |
| HDP 60 3  | 25.5 | 59                            | 4720           | 31             | —                             | —                     | —                 | 28                       | 37                    | 46                |
| HDP 60 3  | 28.2 | 53                            | 5190           | 31             | —                             | —                     | —                 | 28                       | 37                    | 46                |
| HDP 60 3  | 31.7 | 47                            | 4720           | 25             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 34.2 | 44                            | 5190           | 25             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 38.5 | 39                            | 4720           | 20             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 43.7 | 34                            | 5190           | 19.8           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 49.1 | 31                            | 4720           | 16.0           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 56.6 | 26.5                          | 5190           | 15.3           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 63.6 | 23.6                          | 4720           | 12.4           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 68.6 | 21.9                          | 5190           | 12.6           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 77.1 | 19.4                          | 4720           | 10.2           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 87.6 | 17.1                          | 5190           | 9.9            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 98.4 | 15.2                          | 4720           | 8.0            | —                             | —                     | —                 | —                        | —                     | —                 |

\*  BONFIGLIOLI TECHNICAL SERVICE

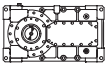
— Thermal verification not necessary



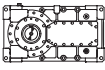
| HDP 60  |      |                                |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i    | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |      |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 60 2  | 7.1  | 168                            | 4870           | 89             | 61                            | 76                    | 93                | 41                       | 52                    | 73                |
| HDP 60 2  | 8.0  | 149                            | 4720           | 77             | 61                            | 76                    | 93                | 41                       | 52                    | 73                |
| HDP 60 2  | 9.0  | 134                            | 5190           | 76             | 61                            | 76                    | 93                | 41                       | 52                    | 73                |
| HDP 60 2  | 10.1 | 119                            | 4720           | 61             | —                             | —                     | —                 | 44                       | 55                    | 76                |
| HDP 60 2  | 11.2 | 108                            | 5190           | 61             | —                             | —                     | —                 | 44                       | 55                    | 76                |
| HDP 60 2  | 12.5 | 96                             | 4720           | 49             | —                             | —                     | —                 | 46                       | 57                    | 78                |
| HDP 60 2  | 13.5 | 89                             | 5190           | 50             | —                             | —                     | —                 | 46                       | 57                    | 78                |
| HDP 60 2  | 15.2 | 79                             | 4720           | 41             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 2  | 17.3 | 69                             | 5190           | 39             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 2  | 19.4 | 62                             | 4720           | 32             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 22.7 | 53                             | 5040           | 30             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 25.5 | 47                             | 4720           | 25             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 28.2 | 43                             | 5190           | 25             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 31.7 | 38                             | 4720           | 20             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 34.2 | 35                             | 5190           | 20             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 38.5 | 31                             | 4720           | 16.4           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 43.7 | 27.5                           | 5190           | 15.9           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 49.1 | 24.4                           | 4720           | 12.8           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 56.6 | 21.2                           | 5190           | 12.2           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 63.6 | 18.9                           | 4720           | 9.9            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 68.6 | 17.5                           | 5190           | 10.1           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 77.1 | 15.6                           | 4720           | 8.2            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 87.6 | 13.7                           | 5190           | 7.9            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 98.4 | 12.2                           | 4720           | 6.4            | —                             | —                     | —                 | —                        | —                     | —                 |



**HDP**

| HDP 60  |      |                                |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i    | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |      |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 60 2  | 7.1  | 140                            | 5120           | 78             | 63                            | 75                    | 95                | 43                       | 52                    | 75                |
| HDP 60 2  | 8.0  | 125                            | 4720           | 64             | 63                            | 75                    | 95                | 43                       | 52                    | 75                |
| HDP 60 2  | 9.0  | 111                            | 5190           | 63             | 63                            | 75                    | 95                | 43                       | 52                    | 75                |
| HDP 60 2  | 10.1 | 99                             | 4720           | 51             | —                             | —                     | —                 | 45                       | 54                    | 77                |
| HDP 60 2  | 11.2 | 90                             | 5190           | 51             | —                             | —                     | —                 | 45                       | 54                    | 77                |
| HDP 60 2  | 12.5 | 80                             | 4720           | 41             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 2  | 13.5 | 74                             | 5190           | 42             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 2  | 15.2 | 66                             | 4720           | 34             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 2  | 17.3 | 58                             | 5190           | 33             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 2  | 19.4 | 52                             | 4720           | 27             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 22.7 | 44                             | 5190           | 25             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 25.5 | 39                             | 4720           | 21             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 28.2 | 35                             | 5190           | 20             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 31.7 | 32                             | 4720           | 16.6           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 34.2 | 29.2                           | 5190           | 16.9           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 38.5 | 26.0                           | 4720           | 13.7           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 43.7 | 22.9                           | 5190           | 13.2           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 49.1 | 20.4                           | 4720           | 10.7           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 56.6 | 17.7                           | 5190           | 10.2           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 63.6 | 15.7                           | 4720           | 8.3            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 68.6 | 14.6                           | 5190           | 8.4            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 77.1 | 13.0                           | 4720           | 6.8            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 87.6 | 11.4                           | 5190           | 6.6            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 60 3  | 98.4 | 10.2                           | 4720           | 5.3            | —                             | —                     | —                 | —                        | —                     | —                 |

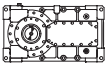


| HDP 70  |       |                                |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 70 2  | 8.0   | 224                            | 5620           | 137            | *                             | 75                    | 87                | *                        | *                     | 66                |
| HDP 70 2  | 9.3   | 193                            | 5840           | 123            | 55                            | 75                    | 87                | *                        | *                     | 66                |
| HDP 70 2  | 10.1  | 178                            | 6010           | 117            | 60                            | 80                    | 92                | *                        | 53                    | 71                |
| HDP 70 2  | 11.7  | 154                            | 6230           | 104            | 60                            | 80                    | 92                | *                        | 53                    | 71                |
| HDP 70 2  | 12.6  | 143                            | 6510           | 102            | 64                            | 84                    | 96                | 43                       | 57                    | 75                |
| HDP 70 2  | 14.6  | 124                            | 6730           | 91             | 64                            | 84                    | 96                | 43                       | 57                    | 75                |
| HDP 70 2  | 15.2  | 118                            | 6750           | 87             | 67                            | 87                    | 99                | 46                       | 60                    | 78                |
| HDP 70 2  | 17.7  | 102                            | 7080           | 79             | 67                            | 87                    | 99                | 46                       | 60                    | 78                |
| HDP 70 2  | 19.4  | 93                             | 6750           | 68             | —                             | —                     | —                 | 49                       | 63                    | 81                |
| HDP 70 2  | 22.6  | 80                             | 7080           | 62             | —                             | —                     | —                 | 49                       | 63                    | 81                |
| HDP 70 3  | 25.5  | 71                             | 6750           | 53             | 39                            | 53                    | 57                | 25                       | 35                    | 43                |
| HDP 70 3  | 29.6  | 61                             | 7080           | 48             | 39                            | 53                    | 57                | 25                       | 35                    | 43                |
| HDP 70 3  | 31.7  | 57                             | 6620           | 42             | 41                            | 55                    | 59                | 27                       | 37                    | 45                |
| HDP 70 3  | 36.9  | 49                             | 6840           | 37             | —                             | —                     | —                 | 27                       | 37                    | 45                |
| HDP 70 3  | 38.5  | 47                             | 6750           | 35             | —                             | —                     | —                 | 28                       | 38                    | 46                |
| HDP 70 3  | 44.7  | 40                             | 7080           | 32             | —                             | —                     | —                 | 28                       | 38                    | 46                |
| HDP 70 3  | 49.1  | 37                             | 6750           | 28             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 57.0  | 32                             | 7080           | 25             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 63.7  | 28.3                           | 6670           | 21             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 73.9  | 24.4                           | 7080           | 19.2           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 77.2  | 23.3                           | 6750           | 17.5           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 89.6  | 20.1                           | 7080           | 15.8           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 98.5  | 18.3                           | 6750           | 13.7           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 114.4 | 15.7                           | 7080           | 12.4           | —                             | —                     | —                 | —                        | —                     | —                 |

\*  BONFIGLIOLI  
TECHNICAL SERVICE

— Thermal verification not necessary

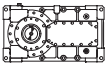


| HDP 70  |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 70 2  | 8.0   | 187                            | 5940           | 121            | 60                            | 77                    | 92                | *                        | 52                    | 71                |
| HDP 70 2  | 9.3   | 161                            | 6150           | 108            | 60                            | 77                    | 92                | *                        | 52                    | 71                |
| HDP 70 2  | 10.1  | 149                            | 6370           | 103            | 64                            | 81                    | 96                | 43                       | 56                    | 75                |
| HDP 70 2  | 11.7  | 128                            | 6590           | 92             | 64                            | 81                    | 96                | 43                       | 56                    | 75                |
| HDP 70 2  | 12.6  | 120                            | 6750           | 88             | 67                            | 84                    | 99                | 46                       | 59                    | 78                |
| HDP 70 2  | 14.6  | 103                            | 7080           | 79             | 67                            | 84                    | 99                | 46                       | 59                    | 78                |
| HDP 70 2  | 15.2  | 99                             | 6750           | 73             | 70                            | 87                    | 102               | 49                       | 62                    | 81                |
| HDP 70 2  | 17.7  | 85                             | 7080           | 66             | —                             | —                     | —                 | 49                       | 62                    | 81                |
| HDP 70 2  | 19.4  | 77                             | 6750           | 57             | —                             | —                     | —                 | 51                       | 64                    | 83                |
| HDP 70 2  | 22.6  | 67                             | 7080           | 51             | —                             | —                     | —                 | 51                       | 64                    | 83                |
| HDP 70 3  | 25.5  | 59                             | 6750           | 44             | 42                            | 54                    | 60                | 28                       | 37                    | 46                |
| HDP 70 3  | 29.6  | 51                             | 7080           | 40             | —                             | —                     | —                 | 28                       | 37                    | 46                |
| HDP 70 3  | 31.7  | 47                             | 6750           | 35             | —                             | —                     | —                 | 29                       | 38                    | 47                |
| HDP 70 3  | 36.9  | 41                             | 7080           | 32             | —                             | —                     | —                 | 29                       | 38                    | 47                |
| HDP 70 3  | 38.5  | 39                             | 6750           | 29             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 44.7  | 34                             | 7080           | 26             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 49.1  | 31                             | 6750           | 23             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 57.0  | 26.3                           | 7080           | 21             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 63.7  | 23.6                           | 6750           | 17.7           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 73.9  | 20.3                           | 7080           | 16.0           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 77.2  | 19.4                           | 6750           | 14.6           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 89.6  | 16.7                           | 7080           | 13.2           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 98.5  | 15.2                           | 6750           | 11.4           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 114.4 | 13.1                           | 7080           | 10.3           | —                             | —                     | —                 | —                        | —                     | —                 |

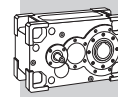
\*  BONFIGLIOLI TECHNICAL SERVICE

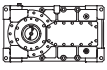
— Thermal verification not necessary



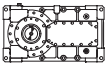
| HDP 70  |       |                                |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 70 2  | 8.0   | 149                            | 6200           | 101            | 64                            | 79                    | 96                | 43                       | 54                    | 75                |
| HDP 70 2  | 9.3   | 129                            | 6550           | 92             | 64                            | 79                    | 96                | 43                       | 54                    | 75                |
| HDP 70 2  | 10.1  | 119                            | 6750           | 88             | 67                            | 82                    | 99                | 46                       | 57                    | 78                |
| HDP 70 2  | 11.7  | 102                            | 7040           | 79             | 67                            | 82                    | 99                | 46                       | 57                    | 78                |
| HDP 70 2  | 12.6  | 96                             | 6750           | 70             | 70                            | 85                    | 102               | 49                       | 60                    | 81                |
| HDP 70 2  | 14.6  | 82                             | 7080           | 64             | —                             | —                     | —                 | 49                       | 60                    | 81                |
| HDP 70 2  | 15.2  | 79                             | 6750           | 58             | —                             | —                     | —                 | 51                       | 62                    | 83                |
| HDP 70 2  | 17.7  | 68                             | 7080           | 52             | —                             | —                     | —                 | 51                       | 62                    | 83                |
| HDP 70 2  | 19.4  | 62                             | 6750           | 45             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 2  | 22.6  | 53                             | 7080           | 41             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 25.5  | 47                             | 6750           | 35             | —                             | —                     | —                 | 30                       | 38                    | 48                |
| HDP 70 3  | 29.6  | 40                             | 7080           | 32             | —                             | —                     | —                 | 30                       | 38                    | 48                |
| HDP 70 3  | 31.7  | 38                             | 6750           | 28             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 36.9  | 33                             | 7080           | 26             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 38.5  | 31                             | 6750           | 23             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 44.7  | 26.8                           | 7080           | 21             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 49.1  | 24.4                           | 6750           | 18.3           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 57.0  | 21.0                           | 7080           | 16.6           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 63.7  | 18.9                           | 6750           | 14.2           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 73.9  | 16.2                           | 7080           | 12.8           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 77.2  | 15.5                           | 6750           | 11.7           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 89.6  | 13.4                           | 7080           | 10.5           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 98.5  | 12.2                           | 6750           | 9.1            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 114.4 | 10.5                           | 7080           | 8.3            | —                             | —                     | —                 | —                        | —                     | —                 |





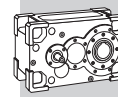
| HDP 70  |       |                                |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 70 2  | 8.0   | 124                            | 6200           | 84             | 67                            | 79                    | 99                | 46                       | 55                    | 78                |
| HDP 70 2  | 9.3   | 107                            | 6950           | 81             | 67                            | 79                    | 99                | 46                       | 55                    | 78                |
| HDP 70 2  | 10.1  | 99                             | 6750           | 73             | 69                            | 81                    | 101               | 48                       | 57                    | 80                |
| HDP 70 2  | 11.7  | 85                             | 7080           | 66             | —                             | —                     | —                 | 48                       | 57                    | 80                |
| HDP 70 2  | 12.6  | 80                             | 6750           | 59             | —                             | —                     | —                 | 50                       | 59                    | 82                |
| HDP 70 2  | 14.6  | 69                             | 7080           | 53             | —                             | —                     | —                 | 50                       | 59                    | 82                |
| HDP 70 2  | 15.2  | 66                             | 6750           | 48             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 2  | 17.7  | 57                             | 7080           | 44             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 2  | 19.4  | 51                             | 6750           | 38             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 2  | 22.6  | 44                             | 7080           | 34             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 25.5  | 39                             | 6750           | 29             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 29.6  | 34                             | 7080           | 27             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 31.7  | 31                             | 6750           | 24             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 36.9  | 27.1                           | 7080           | 21             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 38.5  | 26.0                           | 6750           | 19.5           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 44.7  | 22.4                           | 7080           | 17.6           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 49.1  | 20.4                           | 6750           | 15.3           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 57.0  | 17.5                           | 7080           | 13.8           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 63.7  | 15.7                           | 6750           | 11.8           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 73.9  | 13.5                           | 7080           | 10.7           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 77.2  | 13.0                           | 6750           | 9.7            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 89.6  | 11.2                           | 7080           | 8.8            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 98.5  | 10.2                           | 6750           | 7.6            | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 70 3  | 114.4 | 8.7                            | 7080           | 6.9            | —                             | —                     | —                 | —                        | —                     | —                 |

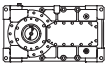


| HDP 80  |       |                                |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 80 2  | 8.1   | 223                            | 9820           | 239            | *                             | 122                   | 130               | *                        | *                     | 102               |
| HDP 80 2  | 9.4   | 192                            | 10150          | 213            | 89                            | 122                   | 130               | *                        | 85                    | 102               |
| HDP 80 2  | 9.8   | 183                            | 10480          | 209            | 92                            | 125                   | 133               | *                        | 88                    | 105               |
| HDP 80 2  | 11.4  | 158                            | 10870          | 187            | 92                            | 125                   | 133               | *                        | 88                    | 105               |
| HDP 80 2  | 12.6  | 143                            | 11420          | 178            | 94                            | 127                   | 135               | *                        | 91                    | 108               |
| HDP 80 2  | 14.6  | 123                            | 11750          | 158            | 94                            | 127                   | 135               | 67                       | 91                    | 108               |
| HDP 80 2  | 15.5  | 116                            | 11750          | 149            | 96                            | 129                   | 137               | 69                       | 93                    | 110               |
| HDP 80 2  | 18.0  | 100                            | 11950          | 130            | 96                            | 129                   | 137               | 69                       | 93                    | 110               |
| HDP 80 2  | 19.4  | 93                             | 11900          | 120            | 97                            | 130                   | 138               | 70                       | 94                    | 111               |
| HDP 80 2  | 22.6  | 80                             | 12600          | 110            | 97                            | 130                   | 138               | 70                       | 94                    | 111               |
| HDP 80 3  | 25.8  | 70                             | 9900           | 77             | 56                            | 78                    | 84                | 37                       | 53                    | 65                |
| HDP 80 3  | 30.0  | 60                             | 11500          | 77             | 56                            | 78                    | 84                | 37                       | 53                    | 65                |
| HDP 80 3  | 31.7  | 57                             | 11310          | 71             | 58                            | 80                    | 86                | 39                       | 55                    | 67                |
| HDP 80 3  | 36.8  | 49                             | 12600          | 69             | 58                            | 80                    | 86                | 39                       | 55                    | 67                |
| HDP 80 3  | 39.8  | 45                             | 12020          | 60             | 59                            | 81                    | 87                | 40                       | 56                    | 68                |
| HDP 80 3  | 46.2  | 39                             | 12600          | 55             | —                             | —                     | —                 | 40                       | 56                    | 68                |
| HDP 80 3  | 51.6  | 35                             | 11950          | 46             | —                             | —                     | —                 | 41                       | 57                    | 69                |
| HDP 80 3  | 59.9  | 30                             | 12600          | 42             | —                             | —                     | —                 | 41                       | 57                    | 69                |
| HDP 80 3  | 64.8  | 27.8                           | 12600          | 39             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 75.2  | 23.9                           | 12600          | 34             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 76.4  | 23.6                           | 11200          | 29             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 88.7  | 20.3                           | 12600          | 28             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 95.9  | 18.8                           | 12600          | 26             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 111.4 | 16.2                           | 12600          | 23             | —                             | —                     | —                 | —                        | —                     | —                 |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary

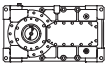


| HDP 80  |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 80 2  | 8.1   | 186                            | 10350          | 210            | 92                            | 120                   | 133               | *                        | 85                    | 105               |
| HDP 80 2  | 9.4   | 160                            | 10730          | 187            | 92                            | 120                   | 133               | *                        | 85                    | 105               |
| HDP 80 2  | 9.8   | 152                            | 11060          | 184            | 94                            | 122                   | 135               | *                        | 88                    | 108               |
| HDP 80 2  | 11.4  | 131                            | 11500          | 165            | 94                            | 122                   | 135               | 67                       | 88                    | 108               |
| HDP 80 2  | 12.6  | 119                            | 11500          | 149            | 96                            | 124                   | 137               | 69                       | 90                    | 110               |
| HDP 80 2  | 14.6  | 103                            | 12420          | 139            | 96                            | 124                   | 137               | 69                       | 90                    | 110               |
| HDP 80 2  | 15.5  | 97                             | 11750          | 124            | 97                            | 125                   | 138               | 70                       | 91                    | 111               |
| HDP 80 2  | 18.0  | 83                             | 11950          | 109            | 97                            | 125                   | 138               | 70                       | 91                    | 111               |
| HDP 80 2  | 19.4  | 77                             | 11900          | 100            | 99                            | 127                   | 140               | 71                       | 92                    | 112               |
| HDP 80 2  | 22.6  | 66                             | 12600          | 91             | —                             | —                     | —                 | 71                       | 92                    | 112               |
| HDP 80 3  | 25.8  | 58                             | 9900           | 64             | 59                            | 79                    | 87                | 40                       | 54                    | 68                |
| HDP 80 3  | 30.0  | 50                             | 11500          | 64             | 59                            | 79                    | 87                | 40                       | 54                    | 68                |
| HDP 80 3  | 31.7  | 47                             | 11650          | 61             | 60                            | 80                    | 88                | 42                       | 56                    | 70                |
| HDP 80 3  | 36.8  | 41                             | 12600          | 57             | —                             | —                     | —                 | 42                       | 56                    | 70                |
| HDP 80 3  | 39.8  | 38                             | 12600          | 53             | —                             | —                     | —                 | 43                       | 57                    | 71                |
| HDP 80 3  | 46.2  | 32                             | 12600          | 45             | —                             | —                     | —                 | 43                       | 57                    | 71                |
| HDP 80 3  | 51.6  | 29.1                           | 11950          | 39             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 59.9  | 25.0                           | 12600          | 35             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 64.8  | 23.1                           | 12600          | 32             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 75.2  | 19.9                           | 12600          | 28             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 76.4  | 19.6                           | 12000          | 26             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 88.7  | 16.9                           | 12600          | 24             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 95.9  | 15.6                           | 12600          | 22             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 111.4 | 13.5                           | 12600          | 18.9           | —                             | —                     | —                 | —                        | —                     | —                 |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



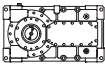
| HDP 80  |       |                                |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 80 2  | 8.1   | 149                            | 10350          | 168            | 94                            | 120                   | 135               | *                        | 86                    | 108               |
| HDP 80 2  | 9.4   | 128                            | 11430          | 160            | 94                            | 120                   | 135               | 67                       | 86                    | 108               |
| HDP 80 2  | 9.8   | 122                            | 11350          | 151            | 96                            | 122                   | 137               | 68                       | 87                    | 109               |
| HDP 80 2  | 11.4  | 105                            | 12300          | 141            | 96                            | 122                   | 137               | 68                       | 87                    | 109               |
| HDP 80 2  | 12.6  | 95                             | 11500          | 119            | 97                            | 123                   | 138               | 70                       | 89                    | 111               |
| HDP 80 2  | 14.6  | 82                             | 12500          | 112            | 97                            | 123                   | 138               | 70                       | 89                    | 111               |
| HDP 80 2  | 15.5  | 77                             | 11750          | 99             | 98                            | 124                   | 139               | 71                       | 90                    | 112               |
| HDP 80 2  | 18.0  | 67                             | 11950          | 87             | —                             | —                     | —                 | 71                       | 90                    | 112               |
| HDP 80 2  | 19.4  | 62                             | 11900          | 80             | —                             | —                     | —                 | 72                       | 91                    | 113               |
| HDP 80 2  | 22.6  | 53                             | 12600          | 73             | —                             | —                     | —                 | 72                       | 91                    | 113               |
| HDP 80 3  | 25.8  | 47                             | 9900           | 51             | —                             | —                     | —                 | 43                       | 56                    | 71                |
| HDP 80 3  | 30.0  | 40                             | 11500          | 51             | —                             | —                     | —                 | 43                       | 56                    | 71                |
| HDP 80 3  | 31.7  | 38                             | 11650          | 49             | —                             | —                     | —                 | 44                       | 57                    | 72                |
| HDP 80 3  | 36.8  | 33                             | 12600          | 46             | —                             | —                     | —                 | 44                       | 57                    | 72                |
| HDP 80 3  | 39.8  | 30                             | 12600          | 42             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 46.2  | 26.0                           | 12600          | 36             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 51.6  | 23.2                           | 11950          | 31             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 59.9  | 20.0                           | 12600          | 28             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 64.8  | 18.5                           | 12600          | 26             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 75.2  | 15.9                           | 12600          | 22             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 76.4  | 15.7                           | 12000          | 21             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 88.7  | 13.5                           | 12600          | 19.0           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 95.9  | 12.5                           | 12600          | 17.5           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 111.4 | 10.8                           | 12600          | 15.1           | —                             | —                     | —                 | —                        | —                     | —                 |

\*  BONFIGLIOLI TECHNICAL SERVICE

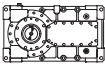
— Thermal verification not necessary



**HDP**

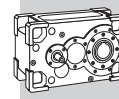
| HDP 80  |       |                                |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 80 2  | 8.1   | 124                            | 10350          | 140            | 96                            | 116                   | 137               | 68                       | 83                    | 109               |
| HDP 80 2  | 9.4   | 107                            | 12050          | 140            | 96                            | 116                   | 137               | 68                       | 83                    | 109               |
| HDP 80 2  | 9.8   | 102                            | 11350          | 126            | 97                            | 117                   | 138               | 70                       | 85                    | 111               |
| HDP 80 2  | 11.4  | 88                             | 12350          | 118            | 97                            | 117                   | 138               | 70                       | 85                    | 111               |
| HDP 80 2  | 12.6  | 79                             | 11500          | 100            | 98                            | 118                   | 139               | 71                       | 86                    | 112               |
| HDP 80 2  | 14.6  | 68                             | 12500          | 93             | —                             | —                     | —                 | 71                       | 86                    | 112               |
| HDP 80 2  | 15.5  | 65                             | 11750          | 83             | —                             | —                     | —                 | 72                       | 87                    | 113               |
| HDP 80 2  | 18.0  | 56                             | 11950          | 72             | —                             | —                     | —                 | 72                       | 87                    | 113               |
| HDP 80 2  | 19.4  | 51                             | 11900          | 67             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 2  | 22.6  | 44                             | 12600          | 61             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 25.8  | 39                             | 9900           | 43             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 30.0  | 33                             | 11500          | 43             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 31.7  | 32                             | 11650          | 41             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 36.8  | 27.2                           | 12600          | 38             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 39.8  | 25.1                           | 12600          | 35             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 46.2  | 21.6                           | 12600          | 30             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 51.6  | 19.4                           | 11950          | 26             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 59.9  | 16.7                           | 12600          | 23             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 64.8  | 15.4                           | 12600          | 22             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 75.2  | 13.3                           | 12600          | 18.6           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 76.4  | 13.1                           | 12000          | 17.5           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 88.7  | 11.3                           | 12600          | 15.8           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 95.9  | 10.4                           | 12600          | 14.6           | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 80 3  | 111.4 | 9.0                            | 12600          | 12.6           | —                             | —                     | —                 | —                        | —                     | —                 |



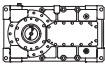
| HDP 90  |       |                                |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 90 2  | 7.9   | 227                            | 12910          | 320            | *                             | 154                   | 163               | *                        | *                     | *                 |
| HDP 90 2  | 8.8   | 204                            | 13510          | 300            | *                             | 154                   | 163               | *                        | *                     | 127               |
| HDP 90 2  | 10.1  | 179                            | 14010          | 273            | 119                           | 158                   | 167               | *                        | 111                   | 131               |
| HDP 90 2  | 11.2  | 161                            | 14620          | 256            | 119                           | 158                   | 167               | *                        | 111                   | 131               |
| HDP 90 2  | 12.2  | 147                            | 14840          | 238            | 122                           | 161                   | 170               | *                        | 114                   | 134               |
| HDP 90 2  | 13.6  | 132                            | 15560          | 225            | 122                           | 161                   | 170               | *                        | 114                   | 134               |
| HDP 90 2  | 15.8  | 114                            | 15830          | 197            | 125                           | 164                   | 173               | 89                       | 117                   | 137               |
| HDP 90 2  | 17.6  | 102                            | 16930          | 189            | 125                           | 164                   | 173               | 89                       | 117                   | 137               |
| HDP 90 2  | 20.1  | 90                             | 16990          | 166            | 127                           | 166                   | 175               | 91                       | 119                   | 139               |
| HDP 90 2  | 22.4  | 80                             | 17120          | 150            | 127                           | 166                   | 175               | 91                       | 119                   | 139               |
| HDP 90 3  | 25.4  | 71                             | 16110          | 127            | 72                            | 99                    | 94                | *                        | 67                    | 69                |
| HDP 90 3  | 28.3  | 64                             | 16710          | 118            | 72                            | 99                    | 94                | *                        | 67                    | 69                |
| HDP 90 3  | 32.9  | 55                             | 17210          | 105            | 74                            | 101                   | 96                | 50                       | 70                    | 72                |
| HDP 90 3  | 36.6  | 49                             | 17120          | 94             | 74                            | 101                   | 96                | 50                       | 70                    | 72                |
| HDP 90 3  | 40.0  | 45                             | 16660          | 83             | 76                            | 103                   | 98                | 51                       | 71                    | 73                |
| HDP 90 3  | 44.6  | 40                             | 17120          | 77             | 76                            | 103                   | 98                | 51                       | 71                    | 73                |
| HDP 90 3  | 51.8  | 35                             | 17900          | 69             | —                             | —                     | —                 | 53                       | 73                    | 75                |
| HDP 90 3  | 57.7  | 31                             | 17120          | 59             | —                             | —                     | —                 | 53                       | 73                    | 75                |
| HDP 90 3  | 65.8  | 27.3                           | 17900          | 54             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 73.3  | 24.6                           | 17120          | 47             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 77.8  | 23.1                           | 17820          | 46             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 86.6  | 20.8                           | 17120          | 40             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 98.9  | 18.2                           | 17900          | 36             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 110.1 | 16.3                           | 17120          | 31             | —                             | —                     | —                 | —                        | —                     | —                 |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



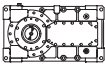
**HDP**

| <b>HDP 90</b>   |              |  |                                  |                                  | <b><math>n_1 = 1500 \text{ min}^{-1}</math></b> |   |                                     |  |   |                                     |
|---|--------------|--|----------------------------------|----------------------------------|---|---|-------------------------------------|--|---|-------------------------------------|
|  | <b>i</b>     | <b><math>n_2</math></b><br>[ $\text{min}^{-1}$ ] | <b><math>Mn_2</math></b><br>[Nm] | <b><math>Pn_1</math></b><br>[kW] | <b><math>t_a = 20^\circ\text{C}</math></b>      |   |                                     | <b><math>t_a = 40^\circ\text{C}</math></b> |   |                                     |
|   |              |  |                                  |                                  | <b><math>P_T</math></b><br>[kW]                 | <b><math>P_{TFANL/R}</math></b><br>[kW] | <b><math>P_{TSR}</math></b><br>[kW] | <b><math>P_T</math></b><br>[kW]            | <b><math>P_{TFANL/R}</math></b><br>[kW] | <b><math>P_{TSR}</math></b><br>[kW] |
| <b>HDP 90 2</b>   | <b>7.9</b>   | 189  | 13620                            | 281                              | 119   | 153                                     | 167                                 | *  | *                                       | 131                                 |
| <b>HDP 90 2</b>   | <b>8.8</b>   | 170  | 14280                            | 265                              | 119   | 153                                     | 167                                 | *  | 108                                     | 131                                 |
| <b>HDP 90 2</b>   | <b>10.1</b>  | 149  | 14770                            | 240                              | 122   | 156                                     | 170                                 | *  | 111                                     | 134                                 |
| <b>HDP 90 2</b>   | <b>11.2</b>  | 134  | 15470                            | 226                              | 122   | 156                                     | 170                                 | *  | 111                                     | 134                                 |
| <b>HDP 90 2</b>   | <b>12.2</b>  | 123  | 15640                            | 209                              | 125   | 159                                     | 173                                 | 89   | 114                                     | 137                                 |
| <b>HDP 90 2</b>   | <b>13.6</b>  | 110  | 16460                            | 198                              | 125   | 159                                     | 173                                 | 89   | 114                                     | 137                                 |
| <b>HDP 90 2</b>   | <b>15.8</b>  | 95   | 16730                            | 173                              | 127   | 161                                     | 175                                 | 91   | 116                                     | 139                                 |
| <b>HDP 90 2</b>   | <b>17.6</b>  | 85   | 17120                            | 159                              | 127   | 161                                     | 175                                 | 91   | 116                                     | 139                                 |
| <b>HDP 90 2</b>   | <b>20.1</b>  | 75   | 17700                            | 144                              | 128   | 162                                     | 176                                 | 92   | 117                                     | 140                                 |
| <b>HDP 90 2</b>   | <b>22.4</b>  | 67   | 17120                            | 125                              | —   | —                                       | —                                   | 92   | 117                                     | 140                                 |
| <b>HDP 90 3</b>   | <b>25.4</b>  | 59   | 17000                            | 112                              | 76  | 99                                      | 98                                  | 51   | 68                                      | 73                                  |
| <b>HDP 90 3</b>   | <b>28.3</b>  | 53   | 17120                            | 101                              | 76  | 99                                      | 98                                  | 51   | 68                                      | 73                                  |
| <b>HDP 90 3</b>   | <b>32.9</b>  | 46   | 17900                            | 91                               | 78  | 101                                     | 100                                 | 53   | 70                                      | 75                                  |
| <b>HDP 90 3</b>   | <b>36.6</b>  | 41   | 17120                            | 78                               | 78  | 101                                     | 100                                 | 53   | 70                                      | 75                                  |
| <b>HDP 90 3</b>   | <b>40.0</b>  | 37   | 17600                            | 73                               | —   | —                                       | —                                   | 55   | 72                                      | 77                                  |
| <b>HDP 90 3</b>   | <b>44.6</b>  | 34   | 17120                            | 64                               | —   | —                                       | —                                   | 55   | 72                                      | 77                                  |
| <b>HDP 90 3</b>   | <b>51.8</b>  | 29.0   | 17900                            | 58                               | —   | —                                       | —                                   | 56   | 73                                      | 78                                  |
| <b>HDP 90 3</b>   | <b>57.7</b>  | 26.0   | 17120                            | 50                               | —   | —                                       | —                                   | —  | —                                       | —                                   |
| <b>HDP 90 3</b>   | <b>65.8</b>  | 22.8   | 17900                            | 45                               | —   | —                                       | —                                   | —  | —                                       | —                                   |
| <b>HDP 90 3</b>   | <b>73.3</b>  | 20.5   | 17120                            | 39                               | —   | —                                       | —                                   | —  | —                                       | —                                   |
| <b>HDP 90 3</b>   | <b>77.8</b>  | 19.3   | 17900                            | 38                               | —   | —                                       | —                                   | —  | —                                       | —                                   |
| <b>HDP 90 3</b>   | <b>86.6</b>  | 17.3   | 17120                            | 33                               | —   | —                                       | —                                   | —  | —                                       | —                                   |
| <b>HDP 90 3</b>   | <b>98.9</b>  | 15.2   | 17900                            | 30                               | —   | —                                       | —                                   | —  | —                                       | —                                   |
| <b>HDP 90 3</b>   | <b>110.1</b> | 13.6   | 17120                            | 26                               | —   | —                                       | —                                   | —  | —                                       | —                                   |

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— Thermal verification not necessary

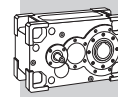


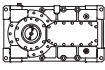
| HDP 90  |       |                                |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 90 2  | 7.9   | 151                            | 14000          | 231            | 122                           | 152                   | 170               | *                        | 108                   | 134               |
| HDP 90 2  | 8.8   | 136                            | 15230          | 226            | 122                           | 152                   | 170               | *                        | 108                   | 134               |
| HDP 90 2  | 10.1  | 119                            | 15830          | 206            | 125                           | 155                   | 173               | 89                       | 111                   | 137               |
| HDP 90 2  | 11.2  | 107                            | 16530          | 193            | 125                           | 155                   | 173               | 89                       | 111                   | 137               |
| HDP 90 2  | 12.2  | 98                             | 16750          | 179            | 127                           | 157                   | 175               | 91                       | 113                   | 139               |
| HDP 90 2  | 13.6  | 88                             | 17120          | 165            | 127                           | 157                   | 175               | 91                       | 113                   | 139               |
| HDP 90 2  | 15.8  | 76                             | 17000          | 141            | 128                           | 158                   | 176               | 92                       | 114                   | 140               |
| HDP 90 2  | 17.6  | 68                             | 17120          | 127            | —                             | —                     | —                 | 92                       | 114                   | 140               |
| HDP 90 2  | 20.1  | 60                             | 17700          | 115            | —                             | —                     | —                 | 93                       | 115                   | 141               |
| HDP 90 2  | 22.4  | 54                             | 17120          | 100            | —                             | —                     | —                 | 93                       | 115                   | 141               |
| HDP 90 3  | 25.4  | 47                             | 17900          | 94             | 79                            | 100                   | 101               | 55                       | 70                    | 77                |
| HDP 90 3  | 28.3  | 42                             | 17120          | 81             | 79                            | 100                   | 101               | 55                       | 70                    | 77                |
| HDP 90 3  | 32.9  | 36                             | 17900          | 73             | —                             | —                     | —                 | 56                       | 71                    | 78                |
| HDP 90 3  | 36.6  | 33                             | 17120          | 62             | —                             | —                     | —                 | 56                       | 71                    | 78                |
| HDP 90 3  | 40.0  | 30                             | 17900          | 60             | —                             | —                     | —                 | 57                       | 72                    | 79                |
| HDP 90 3  | 44.6  | 26.9                           | 17120          | 51             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 51.8  | 23.2                           | 17900          | 46             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 57.7  | 20.8                           | 17120          | 40             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 65.8  | 18.2                           | 17900          | 36             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 73.3  | 16.4                           | 17120          | 31             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 77.8  | 15.4                           | 17900          | 31             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 86.6  | 13.8                           | 17120          | 26             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 98.9  | 12.1                           | 17900          | 24             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 110.1 | 10.9                           | 17120          | 21             | —                             | —                     | —                 | —                        | —                     | —                 |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary

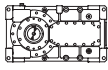




| HDP 90  |       |                                |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                   |                          |                       |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|-------------------|--------------------------|-----------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                   | $t_a = 40^\circ\text{C}$ |                       |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDP 90 2  | 7.9   | 126                            | 14000          | 193            | 124                           | 148                   | 172               | 88                       | 105                   | 136               |
| HDP 90 2  | 8.8   | 113                            | 15600          | 193            | 124                           | 148                   | 172               | 88                       | 105                   | 136               |
| HDP 90 2  | 10.1  | 99                             | 16710          | 181            | 126                           | 150                   | 174               | 90                       | 107                   | 138               |
| HDP 90 2  | 11.2  | 89                             | 17120          | 167            | 126                           | 150                   | 174               | 90                       | 107                   | 138               |
| HDP 90 2  | 12.2  | 82                             | 17680          | 158            | 128                           | 152                   | 176               | 92                       | 109                   | 140               |
| HDP 90 2  | 13.6  | 74                             | 17120          | 137            | 128                           | 152                   | 176               | 92                       | 109                   | 140               |
| HDP 90 2  | 15.8  | 63                             | 17000          | 117            | —                             | —                     | —                 | 93                       | 110                   | 141               |
| HDP 90 2  | 17.6  | 57                             | 17120          | 106            | —                             | —                     | —                 | 93                       | 110                   | 141               |
| HDP 90 2  | 20.1  | 50                             | 17700          | 96             | —                             | —                     | —                 | 94                       | 111                   | 142               |
| HDP 90 2  | 22.4  | 45                             | 17120          | 83             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 25.4  | 39                             | 17900          | 78             | —                             | —                     | —                 | 57                       | 69                    | 79                |
| HDP 90 3  | 28.3  | 35                             | 17120          | 67             | —                             | —                     | —                 | 57                       | 69                    | 79                |
| HDP 90 3  | 32.9  | 30                             | 17900          | 61             | —                             | —                     | —                 | 58                       | 70                    | 80                |
| HDP 90 3  | 36.6  | 27.3                           | 17120          | 52             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 40.0  | 25.0                           | 17900          | 50             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 44.6  | 22.4                           | 17120          | 43             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 51.8  | 19.3                           | 17900          | 38             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 57.7  | 17.3                           | 17120          | 33             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 65.8  | 15.2                           | 17900          | 30             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 73.3  | 13.6                           | 17120          | 26             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 77.8  | 12.9                           | 17900          | 26             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 86.6  | 11.5                           | 17120          | 22             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 98.9  | 10.1                           | 17900          | 20             | —                             | —                     | —                 | —                        | —                     | —                 |
| HDP 90 3  | 110.1 | 9.1                            | 17120          | 17.3           | —                             | —                     | —                 | —                        | —                     | —                 |



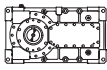
HDP

| HDP 100   |       |                                |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |  |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 100 2   | 7.4   | 243                            | 20310          | 539            | *                             | *                     | 230                  | 266                  | 344                  | *                 | *                    | 301                  |  |
| HDP 100 2   | 8.2   | 219                            | 22760          | 543            | *                             | *                     | 233                  | 269                  | 347                  | *                 | *                    | 304                  |  |
| HDP 100 2   | 9.1   | 198                            | 21360          | 460            | *                             | 199                   | 245                  | 281                  | 359                  | 194               | 222                  | 316                  |  |
| HDP 100 2   | 10.1  | 178                            | 23950          | 465            | *                             | 201                   | 247                  | 283                  | 361                  | 196               | 224                  | 318                  |  |
| HDP 100 2   | 11.3  | 160                            | 22520          | 393            | *                             | 211                   | 257                  | 293                  | 371                  | 206               | 234                  | 328                  |  |
| HDP 100 2   | 12.5  | 144                            | 24750          | 389            | *                             | 213                   | 259                  | 295                  | 373                  | 208               | 236                  | 330                  |  |
| HDP 100 2   | 14.2  | 127                            | 23550          | 326            | *                             | 221                   | 267                  | 303                  | 381                  | 216               | 244                  | 338                  |  |
| HDP 100 2   | 15.7  | 114                            | 24700          | 308            | 130                           | 223                   | 269                  | 305                  | 383                  | 218               | 246                  | 340                  |  |
| HDP 100 2   | 18.0  | 100                            | 24740          | 270            | 136                           | 229                   | 275                  | 311                  | —                    | 224               | 252                  | 346                  |  |
| HDP 100 2   | 20.0  | 90                             | 24530          | 241            | 137                           | 230                   | 276                  | 312                  | —                    | 225               | 253                  | —                    |  |
| HDP 100 2   | 21.8  | 83                             | 22900          | 206            | 138                           | 231                   | —                    | 313                  | —                    | 226               | 254                  | —                    |  |
| HDP 100 3   | 22.8  | 79                             | 22050          | 194            | 99                            | 162                   | 192                  | 226                  | —                    | 162               | 183                  | 251                  |  |
| HDP 100 3   | 25.3  | 71                             | 23480          | 186            | 100                           | 163                   | 193                  | 227                  | —                    | 163               | 184                  | 252                  |  |
| HDP 100 3   | 28.1  | 64                             | 23210          | 165            | 102                           | 165                   | 195                  | 229                  | —                    | 165               | 186                  | —                    |  |
| HDP 100 3   | 31.3  | 58                             | 23480          | 150            | 103                           | 166                   | —                    | 230                  | —                    | 166               | 187                  | —                    |  |
| HDP 100 3   | 35.4  | 51                             | 24250          | 137            | 105                           | 168                   | —                    | 232                  | —                    | 168               | 189                  | —                    |  |
| HDP 100 3   | 39.3  | 46                             | 23480          | 120            | 105                           | 168                   | —                    | 232                  | —                    | 168               | 189                  | —                    |  |
| HDP 100 3   | 45.0  | 40                             | 25410          | 113            | 107                           | 170                   | —                    | 234                  | —                    | 170               | 191                  | —                    |  |
| HDP 100 3   | 50.0  | 36                             | 23480          | 94             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 55.5  | 32                             | 25730          | 93             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 61.7  | 29.2                           | 23480          | 76             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 69.9  | 25.7                           | 25620          | 73             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 77.7  | 23.2                           | 23480          | 61             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 88.9  | 20.3                           | 26110          | 59             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 98.8  | 18.2                           | 23480          | 48             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 107.6 | 16.7                           | 22050          | 41             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 110.6 | 16.3                           | 24800          | 46             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 122.9 | 14.6                           | 23480          | 39             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 139.2 | 12.9                           | 25960          | 38             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 154.7 | 11.6                           | 23480          | 31             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 177.0 | 10.2                           | 26450          | 31             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 196.7 | 9.2                            | 23480          | 24             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 222.2 | 8.1                            | 26450          | 24             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 246.9 | 7.3                            | 24880          | 21             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 286.4 | 6.3                            | 26450          | 18.9           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 318.3 | 5.7                            | 24890          | 16.0           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 359.6 | 5.0                            | 26450          | 15.0           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 399.5 | 4.5                            | 25280          | 12.9           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 457.1 | 3.9                            | 28210          | 12.6           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 507.9 | 3.5                            | 25410          | 10.2           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDP 100   |       |                                |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |     |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|-----|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |     |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |     |
| HDP 100 2   | 7.4   | 243                            | 20310          | 539            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 257 |
| HDP 100 2   | 8.2   | 219                            | 22760          | 543            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 260 |
| HDP 100 2   | 9.1   | 198                            | 21360          | 460            | *                             | *                     | *                    | *                    | 203                  | *                 | *                    | *                    | 272 |
| HDP 100 2   | 10.1  | 178                            | 23950          | 465            | *                             | *                     | *                    | *                    | 205                  | *                 | *                    | *                    | 274 |
| HDP 100 2   | 11.3  | 160                            | 22520          | 393            | *                             | *                     | 176                  | 171                  | 215                  | 162               | 190                  | 190                  | 284 |
| HDP 100 2   | 12.5  | 144                            | 24750          | 389            | *                             | *                     | 177                  | 172                  | 216                  | 163               | 191                  | 191                  | 285 |
| HDP 100 2   | 14.2  | 127                            | 23550          | 326            | *                             | 152                   | 186                  | 181                  | 225                  | 172               | 200                  | 200                  | 294 |
| HDP 100 2   | 15.7  | 114                            | 24700          | 308            | *                             | 153                   | 187                  | 182                  | 226                  | 173               | 201                  | 201                  | 295 |
| HDP 100 2   | 18.0  | 100                            | 24740          | 270            | *                             | 160                   | 194                  | 189                  | 233                  | 180               | 208                  | 208                  | 302 |
| HDP 100 2   | 20.0  | 90                             | 24530          | 241            | *                             | 161                   | 195                  | 190                  | 234                  | 181               | 209                  | 209                  | 303 |
| HDP 100 2   | 21.8  | 83                             | 22900          | 206            | 94                            | 162                   | 196                  | 191                  | 235                  | 182               | 210                  | 210                  | —   |
| HDP 100 3   | 22.8  | 79                             | 22050          | 194            | *                             | 111                   | 133                  | 136                  | 167                  | 128               | 149                  | 149                  | 217 |
| HDP 100 3   | 25.3  | 71                             | 23480          | 186            | *                             | 112                   | 134                  | 137                  | 168                  | 129               | 150                  | 150                  | 218 |
| HDP 100 3   | 28.1  | 64                             | 23210          | 165            | 68                            | 114                   | 136                  | 139                  | 170                  | 131               | 152                  | 152                  | 220 |
| HDP 100 3   | 31.3  | 58                             | 23480          | 150            | 69                            | 115                   | 137                  | 140                  | 171                  | 132               | 153                  | 153                  | —   |
| HDP 100 3   | 35.4  | 51                             | 24250          | 137            | 71                            | 117                   | 139                  | 142                  | —                    | 134               | 155                  | 155                  | —   |
| HDP 100 3   | 39.3  | 46                             | 23480          | 120            | 71                            | 117                   | 139                  | 142                  | —                    | 134               | 155                  | 155                  | —   |
| HDP 100 3   | 45.0  | 40                             | 25410          | 113            | 73                            | 119                   | —                    | 144                  | —                    | 136               | 157                  | 157                  | —   |
| HDP 100 3   | 50.0  | 36                             | 23480          | 94             | 73                            | 119                   | —                    | 144                  | —                    | 136               | 157                  | 157                  | —   |
| HDP 100 3   | 55.5  | 32                             | 25730          | 93             | 80                            | 126                   | —                    | 151                  | —                    | 143               | 164                  | 164                  | —   |
| HDP 100 3   | 61.7  | 29.2                           | 23480          | 76             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 3   | 69.9  | 25.7                           | 25620          | 73             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 3   | 77.7  | 23.2                           | 23480          | 61             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 3   | 88.9  | 20.3                           | 26110          | 59             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 3   | 98.8  | 18.2                           | 23480          | 48             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 3   | 107.6 | 16.7                           | 22050          | 41             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 110.6 | 16.3                           | 24800          | 46             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 122.9 | 14.6                           | 23480          | 39             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 139.2 | 12.9                           | 25960          | 38             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 154.7 | 11.6                           | 23480          | 31             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 177.0 | 10.2                           | 26450          | 31             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 196.7 | 9.2                            | 23480          | 24             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 222.2 | 8.1                            | 26450          | 24             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 246.9 | 7.3                            | 24880          | 21             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 286.4 | 6.3                            | 26450          | 18.9           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 318.3 | 5.7                            | 24890          | 16.0           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 359.6 | 5.0                            | 26450          | 15.0           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 399.5 | 4.5                            | 25280          | 12.9           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 457.1 | 3.9                            | 28210          | 12.6           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 100 4   | 507.9 | 3.5                            | 25410          | 10.2           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |

\*  BONFIGLIOLI TECHNICAL SERVICE

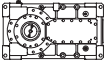
— Thermal verification not necessary



HDP

HDP 100

$n_1 = 1500 \text{ min}^{-1}$

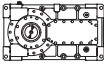
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|   |       |                                |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 100 2   | 7.4   | 203                            | 21450          | 474            | *                        | *                     | 229                  | 283                  | 361                  | 196               | 224                  | 318                  |  |
| HDP 100 2   | 8.2   | 182                            | 24040          | 478            | *                        | *                     | 231                  | 285                  | 363                  | 198               | 226                  | 320                  |  |
| HDP 100 2   | 9.1   | 165                            | 22560          | 405            | *                        | 200                   | 240                  | 294                  | 372                  | 207               | 235                  | 329                  |  |
| HDP 100 2   | 10.1  | 148                            | 24740          | 400            | *                        | 202                   | 242                  | 296                  | 374                  | 209               | 237                  | 331                  |  |
| HDP 100 2   | 11.3  | 133                            | 23790          | 346            | *                        | 210                   | 250                  | 304                  | 382                  | 217               | 245                  | 339                  |  |
| HDP 100 2   | 12.5  | 120                            | 24740          | 324            | 130                      | 211                   | 251                  | 305                  | 383                  | 218               | 246                  | 340                  |  |
| HDP 100 2   | 14.2  | 106                            | 24880          | 287            | 137                      | 218                   | 258                  | 312                  | —                    | 225               | 253                  | 347                  |  |
| HDP 100 2   | 15.7  | 95                             | 24570          | 255            | 138                      | 219                   | 259                  | 313                  | —                    | 226               | 254                  | 348                  |  |
| HDP 100 2   | 18.0  | 83                             | 25890          | 235            | 143                      | 224                   | 264                  | 318                  | —                    | 231               | 259                  | —                    |  |
| HDP 100 2   | 20.0  | 75                             | 24410          | 200            | 144                      | 225                   | —                    | 319                  | —                    | 232               | 260                  | —                    |  |
| HDP 100 2   | 21.8  | 69                             | 22790          | 171            | 144                      | 225                   | —                    | 319                  | —                    | 232               | 260                  | —                    |  |
| HDP 100 3   | 22.8  | 66                             | 23410          | 172            | 106                      | 160                   | 187                  | 233                  | —                    | 169               | 190                  | —                    |  |
| HDP 100 3   | 25.3  | 59                             | 24260          | 160            | 106                      | 160                   | 187                  | 233                  | —                    | 169               | 190                  | —                    |  |
| HDP 100 3   | 28.1  | 53                             | 24640          | 146            | 108                      | 162                   | —                    | 235                  | —                    | 171               | 192                  | —                    |  |
| HDP 100 3   | 31.3  | 48                             | 24140          | 129            | 108                      | 162                   | —                    | 235                  | —                    | 171               | 192                  | —                    |  |
| HDP 100 3   | 35.4  | 42                             | 25740          | 121            | 110                      | 164                   | —                    | 237                  | —                    | 173               | 194                  | —                    |  |
| HDP 100 3   | 39.3  | 38                             | 24030          | 102            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 45.0  | 33                             | 25740          | 95             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 50.0  | 30                             | 23920          | 80             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 55.5  | 27.0                           | 25650          | 77             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 61.7  | 24.3                           | 23830          | 64             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 69.9  | 21.5                           | 25880          | 62             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 77.7  | 19.3                           | 24050          | 52             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 88.9  | 16.9                           | 26850          | 50             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 98.8  | 15.2                           | 24880          | 42             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 107.6 | 13.9                           | 23340          | 36             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 110.6 | 13.6                           | 26300          | 40             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 122.9 | 12.2                           | 24880          | 34             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 139.2 | 10.8                           | 27540          | 34             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 154.7 | 9.7                            | 24880          | 27             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 177.0 | 8.5                            | 28210          | 27             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 196.7 | 7.6                            | 24880          | 22             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 222.2 | 6.8                            | 28210          | 22             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 246.9 | 6.1                            | 24880          | 17.2           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 286.4 | 5.2                            | 28210          | 16.8           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 318.3 | 4.7                            | 25110          | 13.4           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 359.6 | 4.2                            | 28210          | 13.4           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 399.5 | 3.8                            | 25410          | 10.8           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 457.1 | 3.3                            | 28210          | 10.5           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 507.9 | 3.0                            | 25410          | 8.5            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



HDP

| HDP 100   |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |  |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 100 2   | 7.4   | 203                            | 21450          | 474            | *                             | *                     | *                    | *                    | 205                  | *                 | *                    | 274                  |  |
| HDP 100 2   | 8.2   | 182                            | 24040          | 478            | *                             | *                     | *                    | *                    | 207                  | *                 | *                    | 276                  |  |
| HDP 100 2   | 9.1   | 165                            | 22560          | 405            | *                             | *                     | 164                  | 172                  | 216                  | 163               | 191                  | 285                  |  |
| HDP 100 2   | 10.1  | 148                            | 24740          | 400            | *                             | *                     | 166                  | 174                  | 218                  | 165               | 193                  | 287                  |  |
| HDP 100 2   | 11.3  | 133                            | 23790          | 346            | *                             | 143                   | 173                  | 181                  | 225                  | 172               | 200                  | 294                  |  |
| HDP 100 2   | 12.5  | 120                            | 24740          | 324            | *                             | 145                   | 175                  | 183                  | 227                  | 174               | 202                  | 296                  |  |
| HDP 100 2   | 14.2  | 106                            | 24880          | 287            | *                             | 151                   | 181                  | 189                  | 233                  | 180               | 208                  | 302                  |  |
| HDP 100 2   | 15.7  | 95                             | 24570          | 255            | *                             | 152                   | 182                  | 190                  | 234                  | 181               | 209                  | 303                  |  |
| HDP 100 2   | 18.0  | 83                             | 25890          | 235            | 99                            | 158                   | 188                  | 196                  | 240                  | 187               | 215                  | 309                  |  |
| HDP 100 2   | 20.0  | 75                             | 24410          | 200            | 99                            | 158                   | 188                  | 196                  | 240                  | 187               | 215                  | —                    |  |
| HDP 100 2   | 21.8  | 69                             | 22790          | 171            | 100                           | 159                   | 189                  | 197                  | —                    | 188               | 216                  | —                    |  |
| HDP 100 3   | 22.8  | 66                             | 23410          | 172            | 72                            | 112                   | 131                  | 143                  | 174                  | 135               | 156                  | 224                  |  |
| HDP 100 3   | 25.3  | 59                             | 24260          | 160            | 72                            | 112                   | 131                  | 143                  | 174                  | 135               | 156                  | 224                  |  |
| HDP 100 3   | 28.1  | 53                             | 24640          | 146            | 74                            | 114                   | 133                  | 145                  | 176                  | 137               | 158                  | —                    |  |
| HDP 100 3   | 31.3  | 48                             | 24140          | 129            | 74                            | 114                   | 133                  | 145                  | —                    | 137               | 158                  | —                    |  |
| HDP 100 3   | 35.4  | 42                             | 25740          | 121            | 76                            | 116                   | 135                  | 147                  | —                    | 139               | 160                  | —                    |  |
| HDP 100 3   | 39.3  | 38                             | 24030          | 102            | 76                            | 116                   | —                    | 147                  | —                    | 139               | 160                  | —                    |  |
| HDP 100 3   | 45.0  | 33                             | 25740          | 95             | 77                            | 117                   | —                    | 148                  | —                    | 140               | 161                  | —                    |  |
| HDP 100 3   | 50.0  | 30                             | 23920          | 80             | 77                            | 117                   | —                    | 148                  | —                    | 140               | 161                  | —                    |  |
| HDP 100 3   | 55.5  | 27.0                           | 25650          | 77             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 61.7  | 24.3                           | 23830          | 64             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 69.9  | 21.5                           | 25880          | 62             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 77.7  | 19.3                           | 24050          | 52             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 88.9  | 16.9                           | 26850          | 50             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 98.8  | 15.2                           | 24880          | 42             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 107.6 | 13.9                           | 23340          | 36             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 110.6 | 13.6                           | 26300          | 40             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 122.9 | 12.2                           | 24880          | 34             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 139.2 | 10.8                           | 27540          | 34             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 154.7 | 9.7                            | 24880          | 27             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 177.0 | 8.5                            | 28210          | 27             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 196.7 | 7.6                            | 24880          | 22             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 222.2 | 6.8                            | 28210          | 22             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 246.9 | 6.1                            | 24880          | 17.2           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 286.4 | 5.2                            | 28210          | 16.8           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 318.3 | 4.7                            | 25110          | 13.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 359.6 | 4.2                            | 28210          | 13.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 399.5 | 3.8                            | 25410          | 10.8           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 457.1 | 3.3                            | 28210          | 10.5           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 507.9 | 3.0                            | 25410          | 8.5            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

\* 

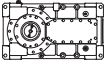
— Thermal verification not necessary



HDP

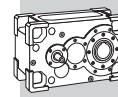
HDP 100

$n_1 = 1200 \text{ min}^{-1}$

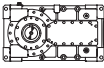
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                      |                   |                      |                      |
|---|-------|--------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|
|   |       |                                |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDP 100 2   | 7.4   | 162                            | 22930          | 405            | *                        | 193                   | 229                  | 295                  | 373                  | 208               | 236                  | 330                  |
| HDP 100 2   | 8.2   | 146                            | 24750          | 394            | *                        | 195                   | 231                  | 297                  | 375                  | 210               | 238                  | 332                  |
| HDP 100 2   | 9.1   | 132                            | 24120          | 347            | *                        | 202                   | 238                  | 304                  | 382                  | 217               | 245                  | 339                  |
| HDP 100 2   | 10.1  | 119                            | 24730          | 320            | 131                      | 204                   | 240                  | 306                  | 384                  | 219               | 247                  | 341                  |
| HDP 100 2   | 11.3  | 107                            | 25230          | 293            | 136                      | 209                   | 245                  | 311                  | —                    | 224               | 252                  | 346                  |
| HDP 100 2   | 12.5  | 96                             | 24580          | 257            | 137                      | 210                   | 246                  | 312                  | —                    | 225               | 253                  | 347                  |
| HDP 100 2   | 14.2  | 85                             | 25620          | 237            | 143                      | 216                   | 252                  | 318                  | —                    | 231               | 259                  | —                    |
| HDP 100 2   | 15.7  | 76                             | 24420          | 203            | 143                      | 216                   | —                    | 318                  | —                    | 231               | 259                  | —                    |
| HDP 100 2   | 18.0  | 67                             | 25890          | 188            | 147                      | 220                   | —                    | 322                  | —                    | 235               | 263                  | —                    |
| HDP 100 2   | 20.0  | 60                             | 24270          | 159            | 148                      | 221                   | —                    | 323                  | —                    | 236               | 264                  | —                    |
| HDP 100 2   | 21.8  | 55                             | 22660          | 136            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 22.8  | 53                             | 25030          | 147            | 110                      | 159                   | —                    | 237                  | —                    | 173               | 194                  | —                    |
| HDP 100 3   | 25.3  | 47                             | 24140          | 127            | 110                      | 159                   | —                    | 237                  | —                    | 173               | 194                  | —                    |
| HDP 100 3   | 28.1  | 43                             | 25870          | 123            | 112                      | 161                   | —                    | 239                  | —                    | 175               | 196                  | —                    |
| HDP 100 3   | 31.3  | 38                             | 24030          | 103            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 35.4  | 34                             | 25750          | 97             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 39.3  | 31                             | 23920          | 81             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 45.0  | 26.7                           | 25640          | 76             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 50.0  | 24.0                           | 23820          | 64             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 55.5  | 21.6                           | 25850          | 62             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 61.7  | 19.4                           | 24030          | 52             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 69.9  | 17.2                           | 26780          | 51             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 77.7  | 15.4                           | 24880          | 43             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 88.9  | 13.5                           | 27810          | 42             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 98.8  | 12.2                           | 24880          | 34             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 3   | 107.6 | 11.2                           | 23870          | 30             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 110.6 | 10.8                           | 26510          | 33             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 122.9 | 9.8                            | 24880          | 28             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 139.2 | 8.6                            | 27770          | 27             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 154.7 | 7.8                            | 24880          | 22             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 177.0 | 6.8                            | 28210          | 22             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 196.7 | 6.1                            | 24880          | 17.2           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 222.2 | 5.4                            | 28210          | 17.3           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 246.9 | 4.9                            | 24990          | 13.8           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 286.4 | 4.2                            | 28210          | 13.4           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 318.3 | 3.8                            | 25410          | 10.9           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 359.6 | 3.3                            | 28210          | 10.7           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 399.5 | 3.0                            | 25410          | 8.7            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 457.1 | 2.6                            | 28210          | 8.4            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 100 4   | 507.9 | 2.4                            | 25410          | 6.8            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP 100**  $n_1 = 1200 \text{ min}^{-1}$

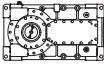
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                              |                             |                             |                             |                          |                             |                             |  |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|--|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |  |
| HDP 100 2   | 7.4   | 162                                    | 22930                   | 405                     | *                      | *                            | *                           | 173                         | 217                         | 164                      | 192                         | 286                         |  |
| HDP 100 2   | 8.2   | 146                                    | 24750                   | 394                     | *                      | *                            | 158                         | 175                         | 219                         | 166                      | 194                         | 288                         |  |
| HDP 100 2   | 9.1   | 132                                    | 24120                   | 347                     | *                      | *                            | 165                         | 182                         | 226                         | 173                      | 201                         | 295                         |  |
| HDP 100 2   | 10.1  | 119                                    | 24730                   | 320                     | *                      | 139                          | 166                         | 183                         | 227                         | 174                      | 202                         | 296                         |  |
| HDP 100 2   | 11.3  | 107                                    | 25230                   | 293                     | *                      | 145                          | 172                         | 189                         | 233                         | 180                      | 208                         | 302                         |  |
| HDP 100 2   | 12.5  | 96                                     | 24580                   | 257                     | *                      | 146                          | 173                         | 190                         | 234                         | 181                      | 209                         | 303                         |  |
| HDP 100 2   | 14.2  | 85                                     | 25620                   | 237                     | 98                     | 151                          | 178                         | 195                         | 239                         | 186                      | 214                         | 308                         |  |
| HDP 100 2   | 15.7  | 76                                     | 24420                   | 203                     | 99                     | 152                          | 179                         | 196                         | 240                         | 187                      | 215                         | —                           |  |
| HDP 100 2   | 18.0  | 67                                     | 25890                   | 188                     | 103                    | 156                          | 183                         | 200                         | —                           | 191                      | 219                         | —                           |  |
| HDP 100 2   | 20.0  | 60                                     | 24270                   | 159                     | 104                    | 157                          | 184                         | 201                         | —                           | 192                      | 220                         | —                           |  |
| HDP 100 2   | 21.8  | 55                                     | 22660                   | 136                     | 104                    | 157                          | —                           | 201                         | —                           | 192                      | 220                         | —                           |  |
| HDP 100 3   | 22.8  | 53                                     | 25030                   | 147                     | 76                     | 112                          | 129                         | 147                         | —                           | 139                      | 160                         | —                           |  |
| HDP 100 3   | 25.3  | 47                                     | 24140                   | 127                     | 76                     | 112                          | 129                         | 147                         | —                           | 139                      | 160                         | —                           |  |
| HDP 100 3   | 28.1  | 43                                     | 25870                   | 123                     | 78                     | 114                          | 131                         | 149                         | —                           | 141                      | 162                         | —                           |  |
| HDP 100 3   | 31.3  | 38                                     | 24030                   | 103                     | 78                     | 114                          | —                           | 149                         | —                           | 141                      | 162                         | —                           |  |
| HDP 100 3   | 35.4  | 34                                     | 25750                   | 97                      | 79                     | 115                          | —                           | 150                         | —                           | 142                      | 163                         | —                           |  |
| HDP 100 3   | 39.3  | 31                                     | 23920                   | 81                      | 79                     | 115                          | —                           | 150                         | —                           | 142                      | 163                         | —                           |  |
| HDP 100 3   | 45.0  | 26.7                                   | 25640                   | 76                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 3   | 50.0  | 24.0                                   | 23820                   | 64                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 3   | 55.5  | 21.6                                   | 25850                   | 62                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 3   | 61.7  | 19.4                                   | 24030                   | 52                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 3   | 69.9  | 17.2                                   | 26780                   | 51                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 3   | 77.7  | 15.4                                   | 24880                   | 43                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 3   | 88.9  | 13.5                                   | 27810                   | 42                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 3   | 98.8  | 12.2                                   | 24880                   | 34                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 3   | 107.6 | 11.2                                   | 23870                   | 30                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 110.6 | 10.8                                   | 26510                   | 33                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 122.9 | 9.8                                    | 24880                   | 28                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 139.2 | 8.6                                    | 27770                   | 27                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 154.7 | 7.8                                    | 24880                   | 22                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 177.0 | 6.8                                    | 28210                   | 22                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 196.7 | 6.1                                    | 24880                   | 17.2                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 222.2 | 5.4                                    | 28210                   | 17.3                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 246.9 | 4.9                                    | 24990                   | 13.8                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 286.4 | 4.2                                    | 28210                   | 13.4                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 318.3 | 3.8                                    | 25410                   | 10.9                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 359.6 | 3.3                                    | 28210                   | 10.7                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 399.5 | 3.0                                    | 25410                   | 8.7                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 457.1 | 2.6                                    | 28210                   | 8.4                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 100 4   | 507.9 | 2.4                                    | 25410                   | 6.8                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



HDP

| HDP 100   |       |                                |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |  |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 100 2   | 7.4   | 135                            | 24220          | 357            | *                             | 186                   | 214                  | 304                  | 382                  | 217               | 245                  | 339                  |  |
| HDP 100 2   | 8.2   | 122                            | 24750          | 328            | *                             | 187                   | 215                  | 305                  | 383                  | 218               | 246                  | 340                  |  |
| HDP 100 2   | 9.1   | 110                            | 24840          | 297            | 136                           | 193                   | 221                  | 311                  | —                    | 224               | 252                  | 346                  |  |
| HDP 100 2   | 10.1  | 99                             | 24600          | 265            | 137                           | 194                   | 222                  | 312                  | —                    | 225               | 253                  | 347                  |  |
| HDP 100 2   | 11.3  | 89                             | 25490          | 247            | 142                           | 199                   | 227                  | 317                  | —                    | 230               | 258                  | —                    |  |
| HDP 100 2   | 12.5  | 80                             | 24450          | 213            | 143                           | 200                   | 228                  | 318                  | —                    | 231               | 259                  | —                    |  |
| HDP 100 2   | 14.2  | 71                             | 25620          | 197            | 147                           | 204                   | —                    | 322                  | —                    | 235               | 263                  | —                    |  |
| HDP 100 2   | 15.7  | 64                             | 24300          | 168            | 147                           | 204                   | —                    | 322                  | —                    | 235               | 263                  | —                    |  |
| HDP 100 2   | 18.0  | 56                             | 25890          | 157            | 151                           | 208                   | —                    | 326                  | —                    | 239               | 267                  | —                    |  |
| HDP 100 2   | 20.0  | 50                             | 24170          | 132            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 2   | 21.8  | 46                             | 22570          | 113            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 22.8  | 44                             | 25880          | 126            | 113                           | 151                   | —                    | 240                  | —                    | 176               | 197                  | —                    |  |
| HDP 100 3   | 25.3  | 40                             | 24040          | 106            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 28.1  | 36                             | 25880          | 102            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 31.3  | 32                             | 23950          | 85             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 35.4  | 28.2                           | 25670          | 81             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 39.3  | 25.4                           | 23850          | 67             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 45.0  | 22.2                           | 25740          | 64             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 50.0  | 20.0                           | 23920          | 53             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 55.5  | 18.0                           | 26590          | 53             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 61.7  | 16.2                           | 24720          | 45             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 69.9  | 14.3                           | 27560          | 44             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 77.7  | 12.9                           | 24880          | 36             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 88.9  | 11.3                           | 28210          | 35             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 98.8  | 10.1                           | 24880          | 28             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 107.6 | 9.3                            | 23870          | 25             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 110.6 | 9.0                            | 28210          | 29             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 122.9 | 8.1                            | 24880          | 23             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 139.2 | 7.2                            | 28210          | 23             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 154.7 | 6.5                            | 24880          | 18.3           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 177.0 | 5.6                            | 28210          | 18.1           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 196.7 | 5.1                            | 24890          | 14.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 222.2 | 4.5                            | 28210          | 14.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 246.9 | 4.1                            | 25410          | 11.7           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 286.4 | 3.5                            | 28210          | 11.2           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 318.3 | 3.1                            | 25410          | 9.1            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 359.6 | 2.8                            | 28210          | 8.9            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 399.5 | 2.5                            | 25410          | 7.2            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 457.1 | 2.2                            | 28210          | 7.0            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 507.9 | 2.0                            | 25410          | 5.7            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

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TECHNICAL SERVICE

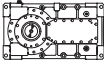
— Thermal verification not necessary





**HDP**

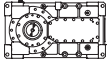
**HDP 100**  $n_1 = 1000 \text{ min}^{-1}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|-------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 100 2   | 7.4   | 135                           | 24220          | 357            | *                        | *                     | 147                  | 182                  | 226                  | 173               | 201                  | 295                  |  |
| HDP 100 2   | 8.2   | 122                           | 24750          | 328            | *                        | *                     | 148                  | 183                  | 227                  | 174               | 202                  | 296                  |  |
| HDP 100 2   | 9.1   | 110                           | 24840          | 297            | *                        | 134                   | 154                  | 189                  | 233                  | 180               | 208                  | 302                  |  |
| HDP 100 2   | 10.1  | 99                            | 24600          | 265            | *                        | 135                   | 155                  | 190                  | 234                  | 181               | 209                  | 303                  |  |
| HDP 100 2   | 11.3  | 89                            | 25490          | 247            | *                        | 140                   | 160                  | 195                  | 239                  | 186               | 214                  | 308                  |  |
| HDP 100 2   | 12.5  | 80                            | 24450          | 213            | 98                       | 140                   | 160                  | 195                  | 239                  | 186               | 214                  | —                    |  |
| HDP 100 2   | 14.2  | 71                            | 25620          | 197            | 103                      | 145                   | 165                  | 200                  | —                    | 191               | 219                  | —                    |  |
| HDP 100 2   | 15.7  | 64                            | 24300          | 168            | 103                      | 145                   | 165                  | 200                  | —                    | 191               | 219                  | —                    |  |
| HDP 100 2   | 18.0  | 56                            | 25890          | 157            | 106                      | 148                   | 168                  | 203                  | —                    | 194               | 222                  | —                    |  |
| HDP 100 2   | 20.0  | 50                            | 24170          | 132            | 107                      | 149                   | —                    | 204                  | —                    | 195               | 223                  | —                    |  |
| HDP 100 2   | 21.8  | 46                            | 22570          | 113            | 107                      | 149                   | —                    | 204                  | —                    | 195               | 223                  | —                    |  |
| HDP 100 3   | 22.8  | 44                            | 25880          | 126            | 79                       | 107                   | 120                  | 150                  | —                    | 142               | 163                  | —                    |  |
| HDP 100 3   | 25.3  | 40                            | 24040          | 106            | 79                       | 107                   | —                    | 150                  | —                    | 142               | 163                  | —                    |  |
| HDP 100 3   | 28.1  | 36                            | 25880          | 102            | 81                       | 109                   | —                    | 152                  | —                    | 144               | 165                  | —                    |  |
| HDP 100 3   | 31.3  | 32                            | 23950          | 85             | 81                       | 109                   | —                    | 152                  | —                    | 144               | 165                  | —                    |  |
| HDP 100 3   | 35.4  | 28.2                          | 25670          | 81             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 39.3  | 25.4                          | 23850          | 67             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 45.0  | 22.2                          | 25740          | 64             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 50.0  | 20.0                          | 23920          | 53             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 55.5  | 18.0                          | 26590          | 53             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 61.7  | 16.2                          | 24720          | 45             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 69.9  | 14.3                          | 27560          | 44             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 77.7  | 12.9                          | 24880          | 36             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 88.9  | 11.3                          | 28210          | 35             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 98.8  | 10.1                          | 24880          | 28             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 3   | 107.6 | 9.3                           | 23870          | 25             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 110.6 | 9.0                           | 28210          | 29             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 122.9 | 8.1                           | 24880          | 23             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 139.2 | 7.2                           | 28210          | 23             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 154.7 | 6.5                           | 24880          | 18.3           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 177.0 | 5.6                           | 28210          | 18.1           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 196.7 | 5.1                           | 24890          | 14.4           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 222.2 | 4.5                           | 28210          | 14.4           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 246.9 | 4.1                           | 25410          | 11.7           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 286.4 | 3.5                           | 28210          | 11.2           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 318.3 | 3.1                           | 25410          | 9.1            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 359.6 | 2.8                           | 28210          | 8.9            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 399.5 | 2.5                           | 25410          | 7.2            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 457.1 | 2.2                           | 28210          | 7.0            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 100 4   | 507.9 | 2.0                           | 25410          | 5.7            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

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— Thermal verification not necessary

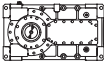


| HDP 110   |       |                               |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |  |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 110 2   | 8.1   | 223                           | 23430          | 569            | *                             | *                     | *                    | 262                  | 340                  | *                 | *                    | 297                  |  |
| HDP 110 2   | 9.0   | 201                           | 24780          | 543            | *                             | *                     | 229                  | 265                  | 343                  | *                 | *                    | 300                  |  |
| HDP 110 2   | 9.9   | 181                           | 24630          | 486            | *                             | 196                   | 242                  | 278                  | 356                  | *                 | 219                  | 313                  |  |
| HDP 110 2   | 11.0  | 163                           | 26540          | 473            | *                             | 198                   | 244                  | 280                  | 358                  | 193               | 221                  | 315                  |  |
| HDP 110 2   | 12.3  | 146                           | 25950          | 414            | *                             | 208                   | 254                  | 290                  | 368                  | 203               | 231                  | 325                  |  |
| HDP 110 2   | 13.6  | 132                           | 27970          | 403            | *                             | 210                   | 256                  | 292                  | 370                  | 205               | 233                  | 327                  |  |
| HDP 110 2   | 15.5  | 116                           | 27100          | 344            | *                             | 219                   | 265                  | 301                  | 379                  | 214               | 242                  | 336                  |  |
| HDP 110 2   | 17.1  | 105                           | 28660          | 328            | *                             | 221                   | 267                  | 303                  | 381                  | 216               | 244                  | 338                  |  |
| HDP 110 2   | 19.7  | 92                            | 27660          | 276            | 135                           | 228                   | 274                  | 310                  | —                    | 223               | 251                  | 345                  |  |
| HDP 110 2   | 21.8  | 83                            | 28990          | 261            | 136                           | 229                   | 275                  | 311                  | —                    | 224               | 252                  | 346                  |  |
| HDP 110 2   | 25.0  | 72                            | 27090          | 213            | 137                           | 230                   | —                    | 312                  | —                    | 225               | 253                  | —                    |  |
| HDP 110 3   | 24.9  | 72                            | 25300          | 204            | 99                            | 192                   | 238                  | 274                  | —                    | 187               | 215                  | —                    |  |
| HDP 110 3   | 27.6  | 65                            | 26400          | 192            | 99                            | 192                   | —                    | 274                  | —                    | 187               | 215                  | —                    |  |
| HDP 110 3   | 30.7  | 59                            | 27110          | 177            | 102                           | 195                   | —                    | 277                  | —                    | 190               | 218                  | —                    |  |
| HDP 110 3   | 34.0  | 53                            | 28320          | 167            | 102                           | 195                   | —                    | 277                  | —                    | 190               | 218                  | —                    |  |
| HDP 110 3   | 38.7  | 47                            | 28270          | 146            | 104                           | 197                   | —                    | 279                  | —                    | 192               | 220                  | —                    |  |
| HDP 110 3   | 42.8  | 42                            | 29040          | 136            | 105                           | 198                   | —                    | 280                  | —                    | 193               | 221                  | —                    |  |
| HDP 110 3   | 49.2  | 37                            | 29090          | 118            | 106                           | 199                   | —                    | 281                  | —                    | 194               | 222                  | —                    |  |
| HDP 110 3   | 54.5  | 33                            | 29040          | 107            | 107                           | 200                   | —                    | 282                  | —                    | 195               | 223                  | —                    |  |
| HDP 110 3   | 60.7  | 29.7                          | 30740          | 101            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 67.2  | 26.8                          | 29040          | 87             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 76.4  | 23.6                          | 30960          | 81             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 84.6  | 21.3                          | 29040          | 69             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 97.1  | 18.5                          | 29090          | 60             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 107.6 | 16.7                          | 29040          | 54             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 123.4 | 14.6                          | 26010          | 42             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 120.9 | 14.9                          | 28540          | 48             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 133.9 | 13.4                          | 29040          | 44             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 168.5 | 10.7                          | 29040          | 35             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 191.0 | 9.4                           | 31570          | 34             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 193.4 | 9.3                           | 29090          | 31             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 214.2 | 8.4                           | 29040          | 28             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 248.6 | 7.2                           | 31350          | 26             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 275.4 | 6.5                           | 29040          | 22             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 313.0 | 5.8                           | 31570          | 21             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 346.7 | 5.2                           | 29040          | 17.1           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 392.9 | 4.6                           | 31570          | 16.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 440.7 | 4.1                           | 29040          | 13.5           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 499.4 | 3.6                           | 29090          | 11.9           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDP 110   |       |                                |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |     |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|-----|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |     |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |     |
| HDP 110 2   | 8.1   | 223                            | 23430          | 569            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 252 |
| HDP 110 2   | 9.0   | 201                            | 24780          | 543            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 256 |
| HDP 110 2   | 9.9   | 181                            | 24630          | 486            | *                             | *                     | *                    | *                    | 199                  | *                 | *                    | *                    | 268 |
| HDP 110 2   | 11.0  | 163                            | 26540          | 473            | *                             | *                     | *                    | *                    | 202                  | *                 | *                    | *                    | 271 |
| HDP 110 2   | 12.3  | 146                            | 25950          | 414            | *                             | *                     | 173                  | 168                  | 212                  | *                 | 187                  | 187                  | 281 |
| HDP 110 2   | 13.6  | 132                            | 27970          | 403            | *                             | *                     | 175                  | 170                  | 214                  | *                 | 189                  | 189                  | 283 |
| HDP 110 2   | 15.5  | 116                            | 27100          | 344            | *                             | 150                   | 184                  | 179                  | 223                  | 170               | 198                  | 198                  | 292 |
| HDP 110 2   | 17.1  | 105                            | 28660          | 328            | *                             | 151                   | 185                  | 180                  | 224                  | 171               | 199                  | 199                  | 293 |
| HDP 110 2   | 19.7  | 92                             | 27660          | 276            | *                             | 159                   | 193                  | 188                  | 232                  | 179               | 207                  | 207                  | 301 |
| HDP 110 2   | 21.8  | 83                             | 28990          | 261            | *                             | 160                   | 194                  | 189                  | 233                  | 180               | 208                  | 208                  | 302 |
| HDP 110 2   | 25.0  | 72                             | 27090          | 213            | 93                            | 161                   | 195                  | 190                  | 234                  | 181               | 209                  | 209                  | 303 |
| HDP 110 3   | 24.9  | 72                             | 25300          | 204            | *                             | 133                   | 167                  | 162                  | 206                  | 153               | 181                  | 181                  | 275 |
| HDP 110 3   | 27.6  | 65                             | 26400          | 192            | *                             | 133                   | 167                  | 162                  | 206                  | 153               | 181                  | 181                  | 275 |
| HDP 110 3   | 30.7  | 59                             | 27110          | 177            | *                             | 136                   | 170                  | 165                  | 209                  | 156               | 184                  | 184                  | —   |
| HDP 110 3   | 34.0  | 53                             | 28320          | 167            | 68                            | 136                   | 170                  | 165                  | 209                  | 156               | 184                  | 184                  | —   |
| HDP 110 3   | 38.7  | 47                             | 28270          | 146            | 70                            | 138                   | 172                  | 167                  | —                    | 158               | 186                  | 186                  | —   |
| HDP 110 3   | 42.8  | 42                             | 29040          | 136            | 71                            | 139                   | —                    | 168                  | —                    | 159               | 187                  | 187                  | —   |
| HDP 110 3   | 49.2  | 37                             | 29090          | 118            | 72                            | 140                   | —                    | 169                  | —                    | 160               | 188                  | 188                  | —   |
| HDP 110 3   | 54.5  | 33                             | 29040          | 107            | 73                            | 141                   | —                    | 170                  | —                    | 161               | 189                  | 189                  | —   |
| HDP 110 3   | 60.7  | 29.7                           | 30740          | 101            | 80                            | 148                   | —                    | 177                  | —                    | 168               | 196                  | 196                  | —   |
| HDP 110 3   | 67.2  | 26.8                           | 29040          | 87             | 80                            | 148                   | —                    | 177                  | —                    | 168               | 196                  | 196                  | —   |
| HDP 110 3   | 76.4  | 23.6                           | 30960          | 81             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 3   | 84.6  | 21.3                           | 29040          | 69             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 3   | 97.1  | 18.5                           | 29090          | 60             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 3   | 107.6 | 16.7                           | 29040          | 54             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 3   | 123.4 | 14.6                           | 26010          | 42             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 120.9 | 14.9                           | 28540          | 48             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 133.9 | 13.4                           | 29040          | 44             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 168.5 | 10.7                           | 29040          | 35             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 191.0 | 9.4                            | 31570          | 34             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 193.4 | 9.3                            | 29090          | 31             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 214.2 | 8.4                            | 29040          | 28             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 248.6 | 7.2                            | 31350          | 26             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 275.4 | 6.5                            | 29040          | 22             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 313.0 | 5.8                            | 31570          | 21             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 346.7 | 5.2                            | 29040          | 17.1           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 392.9 | 4.6                            | 31570          | 16.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 440.7 | 4.1                            | 29040          | 13.5           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 110 4   | 499.4 | 3.6                            | 29090          | 11.9           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |

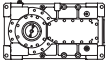
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDP 110

$n_1 = 1500 \text{ min}^{-1}$

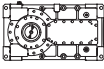
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                              |                             |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDP 110 2   | 8.1   | 186                                    | 24740                   | 500                     | *                      | *                            | 244                         | 280                         | 358                         | *                        | 221                         | 315                         |
| HDP 110 2   | 9.0   | 167                                    | 26170                   | 478                     | *                      | 200                          | 246                         | 282                         | 360                         | 195                      | 223                         | 317                         |
| HDP 110 2   | 9.9   | 151                                    | 26010                   | 428                     | *                      | 210                          | 256                         | 292                         | 370                         | 205                      | 233                         | 327                         |
| HDP 110 2   | 11.0  | 136                                    | 27880                   | 414                     | *                      | 212                          | 258                         | 294                         | 372                         | 207                      | 235                         | 329                         |
| HDP 110 2   | 12.3  | 122                                    | 26940                   | 358                     | *                      | 220                          | 266                         | 302                         | 380                         | 215                      | 243                         | 337                         |
| HDP 110 2   | 13.6  | 110                                    | 28270                   | 340                     | *                      | 221                          | 267                         | 303                         | 381                         | 216                      | 244                         | 338                         |
| HDP 110 2   | 15.5  | 97                                     | 27330                   | 289                     | 135                    | 228                          | 274                         | 310                         | —                           | 223                      | 251                         | 345                         |
| HDP 110 2   | 17.1  | 88                                     | 28660                   | 273                     | 136                    | 229                          | 275                         | 311                         | —                           | 224                      | 252                         | 346                         |
| HDP 110 2   | 19.7  | 76                                     | 27660                   | 230                     | 142                    | 235                          | —                           | 317                         | —                           | 230                      | 258                         | —                           |
| HDP 110 2   | 21.8  | 69                                     | 28990                   | 218                     | 142                    | 235                          | —                           | 317                         | —                           | 230                      | 258                         | —                           |
| HDP 110 2   | 25.0  | 60                                     | 26960                   | 176                     | 143                    | 236                          | —                           | 318                         | —                           | 231                      | 259                         | —                           |
| HDP 110 3   | 24.9  | 60                                     | 26870                   | 180                     | 105                    | 198                          | —                           | 280                         | —                           | 193                      | 221                         | —                           |
| HDP 110 3   | 27.6  | 54                                     | 28010                   | 170                     | 105                    | 198                          | —                           | 280                         | —                           | 193                      | 221                         | —                           |
| HDP 110 3   | 30.7  | 49                                     | 28750                   | 156                     | 107                    | 200                          | —                           | 282                         | —                           | 195                      | 223                         | —                           |
| HDP 110 3   | 34.0  | 44                                     | 29540                   | 145                     | 108                    | 201                          | —                           | 283                         | —                           | 196                      | 224                         | —                           |
| HDP 110 3   | 38.7  | 39                                     | 30000                   | 129                     | 109                    | 202                          | —                           | 284                         | —                           | 197                      | 225                         | —                           |
| HDP 110 3   | 42.8  | 35                                     | 29400                   | 115                     | 109                    | 202                          | —                           | 284                         | —                           | 197                      | 225                         | —                           |
| HDP 110 3   | 49.2  | 31                                     | 31100                   | 106                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 3   | 54.5  | 27.5                                   | 29270                   | 90                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 3   | 60.7  | 24.7                                   | 30740                   | 85                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 3   | 67.2  | 22.3                                   | 29160                   | 72                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 3   | 76.4  | 19.6                                   | 31130                   | 68                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 3   | 84.6  | 17.7                                   | 29430                   | 58                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 3   | 97.1  | 15.4                                   | 31120                   | 53                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 3   | 107.6 | 13.9                                   | 30550                   | 47                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 3   | 123.4 | 12.2                                   | 27630                   | 37                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 120.9 | 12.4                                   | 30410                   | 43                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 133.9 | 11.2                                   | 31630                   | 40                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 168.5 | 8.9                                    | 31790                   | 32                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 191.0 | 7.9                                    | 31570                   | 28                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 193.4 | 7.8                                    | 31570                   | 28                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 214.2 | 7.0                                    | 31790                   | 25                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 248.6 | 6.0                                    | 31350                   | 21                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 275.4 | 5.4                                    | 31790                   | 19.7                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 313.0 | 4.8                                    | 31570                   | 17.2                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 346.7 | 4.3                                    | 31790                   | 15.6                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 392.9 | 3.8                                    | 31570                   | 13.7                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 440.7 | 3.4                                    | 31790                   | 12.3                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 110 4   | 499.4 | 3.0                                    | 31570                   | 10.8                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP**

| HDP 110   |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |  |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 110 2   | 8.1   | 186                            | 24740          | 500            | *                             | *                     | *                    | *                    | 201                  | *                 | *                    | 270                  |  |
| HDP 110 2   | 9.0   | 167                            | 26170          | 478            | *                             | *                     | *                    | *                    | 204                  | *                 | *                    | 273                  |  |
| HDP 110 2   | 9.9   | 151                            | 26010          | 428            | *                             | *                     | 175                  | *                    | 214                  | *                 | 189                  | 283                  |  |
| HDP 110 2   | 11.0  | 136                            | 27880          | 414            | *                             | *                     | 176                  | 171                  | 215                  | *                 | 190                  | 284                  |  |
| HDP 110 2   | 12.3  | 122                            | 26940          | 358            | *                             | 150                   | 184                  | 179                  | 223                  | 170               | 198                  | 292                  |  |
| HDP 110 2   | 13.6  | 110                            | 28270          | 340            | *                             | 152                   | 186                  | 181                  | 225                  | 172               | 200                  | 294                  |  |
| HDP 110 2   | 15.5  | 97                             | 27330          | 289            | *                             | 159                   | 193                  | 188                  | 232                  | 179               | 207                  | 301                  |  |
| HDP 110 2   | 17.1  | 88                             | 28660          | 273            | *                             | 160                   | 194                  | 189                  | 233                  | 180               | 208                  | 302                  |  |
| HDP 110 2   | 19.7  | 76                             | 27660          | 230            | 97                            | 165                   | 199                  | 194                  | 238                  | 185               | 213                  | 307                  |  |
| HDP 110 2   | 21.8  | 69                             | 28990          | 218            | 98                            | 166                   | 200                  | 195                  | 239                  | 186               | 214                  | 308                  |  |
| HDP 110 2   | 25.0  | 60                             | 26960          | 176            | 99                            | 167                   | 201                  | 196                  | —                    | 187               | 215                  | —                    |  |
| HDP 110 3   | 24.9  | 60                             | 26870          | 180            | *                             | 139                   | 173                  | 168                  | 212                  | 159               | 187                  | —                    |  |
| HDP 110 3   | 27.6  | 54                             | 28010          | 170            | 71                            | 139                   | 173                  | 168                  | 212                  | 159               | 187                  | —                    |  |
| HDP 110 3   | 30.7  | 49                             | 28750          | 156            | 73                            | 141                   | 175                  | 170                  | —                    | 161               | 189                  | —                    |  |
| HDP 110 3   | 34.0  | 44                             | 29540          | 145            | 74                            | 142                   | 176                  | 171                  | —                    | 162               | 190                  | —                    |  |
| HDP 110 3   | 38.7  | 39                             | 30000          | 129            | 75                            | 143                   | —                    | 172                  | —                    | 163               | 191                  | —                    |  |
| HDP 110 3   | 42.8  | 35                             | 29400          | 115            | 75                            | 143                   | —                    | 172                  | —                    | 163               | 191                  | —                    |  |
| HDP 110 3   | 49.2  | 31                             | 31100          | 106            | 77                            | 145                   | —                    | 174                  | —                    | 165               | 193                  | —                    |  |
| HDP 110 3   | 54.5  | 27.5                           | 29270          | 90             | 77                            | 145                   | —                    | 174                  | —                    | 165               | 193                  | —                    |  |
| HDP 110 3   | 60.7  | 24.7                           | 30740          | 85             | 83                            | 151                   | —                    | 180                  | —                    | 171               | 199                  | —                    |  |
| HDP 110 3   | 67.2  | 22.3                           | 29160          | 72             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 76.4  | 19.6                           | 31130          | 68             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 84.6  | 17.7                           | 29430          | 58             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 97.1  | 15.4                           | 31120          | 53             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 107.6 | 13.9                           | 30550          | 47             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 123.4 | 12.2                           | 27630          | 37             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 120.9 | 12.4                           | 30410          | 43             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 133.9 | 11.2                           | 31630          | 40             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 168.5 | 8.9                            | 31790          | 32             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 191.0 | 7.9                            | 31570          | 28             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 193.4 | 7.8                            | 31570          | 28             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 214.2 | 7.0                            | 31790          | 25             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 248.6 | 6.0                            | 31350          | 21             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 275.4 | 5.4                            | 31790          | 19.7           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 313.0 | 4.8                            | 31570          | 17.2           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 346.7 | 4.3                            | 31790          | 15.6           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 392.9 | 3.8                            | 31570          | 13.7           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 440.7 | 3.4                            | 31790          | 12.3           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 499.4 | 3.0                            | 31570          | 10.8           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

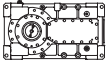
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP 110**

$n_1 = 1200 \text{ min}^{-1}$

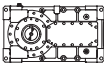
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                      |                   |                      |                      |
|---|-------|--------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|
|   |       |                                |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDP 110 2   | 8.1   | 148                            | 26080          | 422            | *                        | 191                   | 227                  | 293                  | 371                  | 206               | 234                  | 328                  |
| HDP 110 2   | 9.0   | 134                            | 27420          | 401            | *                        | 192                   | 228                  | 294                  | 372                  | 207               | 235                  | 329                  |
| HDP 110 2   | 9.9   | 121                            | 26540          | 349            | *                        | 200                   | 236                  | 302                  | 380                  | 215               | 243                  | 337                  |
| HDP 110 2   | 11.0  | 109                            | 27880          | 331            | *                        | 202                   | 238                  | 304                  | 382                  | 217               | 245                  | 339                  |
| HDP 110 2   | 12.3  | 98                             | 26940          | 287            | 135                      | 208                   | 244                  | 310                  | —                    | 223               | 251                  | 345                  |
| HDP 110 2   | 13.6  | 88                             | 28270          | 272            | 136                      | 209                   | 245                  | 311                  | —                    | 224               | 252                  | 346                  |
| HDP 110 2   | 15.5  | 78                             | 27330          | 231            | 141                      | 214                   | 250                  | 316                  | —                    | 229               | 257                  | —                    |
| HDP 110 2   | 17.1  | 70                             | 28660          | 219            | 142                      | 215                   | 251                  | 317                  | —                    | 230               | 258                  | —                    |
| HDP 110 2   | 19.7  | 61                             | 27660          | 184            | 147                      | 220                   | —                    | 322                  | —                    | 235               | 263                  | —                    |
| HDP 110 2   | 21.8  | 55                             | 28990          | 174            | 147                      | 220                   | —                    | 322                  | —                    | 235               | 263                  | —                    |
| HDP 110 2   | 25.0  | 48                             | 26810          | 140            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 24.9  | 48                             | 28730          | 154            | 110                      | 159                   | —                    | 237                  | —                    | 173               | 194                  | —                    |
| HDP 110 3   | 27.6  | 44                             | 29530          | 143            | 110                      | 159                   | —                    | 237                  | —                    | 173               | 194                  | —                    |
| HDP 110 3   | 30.7  | 39                             | 30740          | 134            | 111                      | 160                   | —                    | 238                  | —                    | 174               | 195                  | —                    |
| HDP 110 3   | 34.0  | 35                             | 29400          | 115            | 112                      | 161                   | —                    | 239                  | —                    | 175               | 196                  | —                    |
| HDP 110 3   | 38.7  | 31                             | 31110          | 107            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 42.8  | 28.0                           | 29270          | 91             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 49.2  | 24.4                           | 30980          | 84             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 54.5  | 22.0                           | 29150          | 71             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 60.7  | 19.8                           | 30740          | 68             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 67.2  | 17.8                           | 29400          | 58             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 76.4  | 15.7                           | 31130          | 54             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 84.6  | 14.2                           | 30470          | 48             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 97.1  | 12.4                           | 31350          | 43             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 107.6 | 11.2                           | 31650          | 39             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 123.4 | 9.7                            | 28180          | 30             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 120.9 | 9.9                            | 31350          | 35             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 133.9 | 9.0                            | 31790          | 32             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 168.5 | 7.1                            | 31790          | 26             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 191.0 | 6.3                            | 31570          | 23             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 193.4 | 6.2                            | 31570          | 22             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 214.2 | 5.6                            | 31790          | 20             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 248.6 | 4.8                            | 31350          | 17.2           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 275.4 | 4.4                            | 31790          | 15.7           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 313.0 | 3.8                            | 31570          | 13.7           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 346.7 | 3.5                            | 31790          | 12.5           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 392.9 | 3.1                            | 31570          | 10.9           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 440.7 | 2.7                            | 31790          | 9.8            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 499.4 | 2.4                            | 31570          | 8.6            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP**

| HDP 110   |       |                               |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |  |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 110 2   | 8.1   | 148                           | 26080          | 422            | *                             | *                     | *                    | 170                  | 214                  | *                 | 189                  | 283                  |  |
| HDP 110 2   | 9.0   | 134                           | 27420          | 401            | *                             | *                     | *                    | 172                  | 216                  | 163               | 191                  | 285                  |  |
| HDP 110 2   | 9.9   | 121                           | 26540          | 349            | *                             | *                     | 163                  | 180                  | 224                  | 171               | 199                  | 293                  |  |
| HDP 110 2   | 11.0  | 109                           | 27880          | 331            | *                             | 137                   | 164                  | 181                  | 225                  | 172               | 200                  | 294                  |  |
| HDP 110 2   | 12.3  | 98                            | 26940          | 287            | *                             | 144                   | 171                  | 188                  | 232                  | 179               | 207                  | 301                  |  |
| HDP 110 2   | 13.6  | 88                            | 28270          | 272            | *                             | 145                   | 172                  | 189                  | 233                  | 180               | 208                  | 302                  |  |
| HDP 110 2   | 15.5  | 78                            | 27330          | 231            | 97                            | 150                   | 177                  | 194                  | 238                  | 185               | 213                  | 307                  |  |
| HDP 110 2   | 17.1  | 70                            | 28660          | 219            | 98                            | 151                   | 178                  | 195                  | 239                  | 186               | 214                  | 308                  |  |
| HDP 110 2   | 19.7  | 61                            | 27660          | 184            | 102                           | 155                   | 182                  | 199                  | —                    | 190               | 218                  | —                    |  |
| HDP 110 2   | 21.8  | 55                            | 28990          | 174            | 103                           | 156                   | 183                  | 200                  | —                    | 191               | 219                  | —                    |  |
| HDP 110 2   | 25.0  | 48                            | 26810          | 140            | 104                           | 157                   | —                    | 201                  | —                    | 192               | 220                  | —                    |  |
| HDP 110 3   | 24.9  | 48                            | 28730          | 154            | 75                            | 111                   | 128                  | 146                  | 177                  | 138               | 159                  | —                    |  |
| HDP 110 3   | 27.6  | 44                            | 29530          | 143            | 76                            | 112                   | 129                  | 147                  | —                    | 139               | 160                  | —                    |  |
| HDP 110 3   | 30.7  | 39                            | 30740          | 134            | 77                            | 113                   | 130                  | 148                  | —                    | 140               | 161                  | —                    |  |
| HDP 110 3   | 34.0  | 35                            | 29400          | 115            | 78                            | 114                   | 131                  | 149                  | —                    | 141               | 162                  | —                    |  |
| HDP 110 3   | 38.7  | 31                            | 31110          | 107            | 79                            | 115                   | —                    | 150                  | —                    | 142               | 163                  | —                    |  |
| HDP 110 3   | 42.8  | 28.0                          | 29270          | 91             | 79                            | 115                   | —                    | 150                  | —                    | 142               | 163                  | —                    |  |
| HDP 110 3   | 49.2  | 24.4                          | 30980          | 84             | 80                            | 116                   | —                    | 151                  | —                    | 143               | 164                  | —                    |  |
| HDP 110 3   | 54.5  | 22.0                          | 29150          | 71             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 60.7  | 19.8                          | 30740          | 68             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 67.2  | 17.8                          | 29400          | 58             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 76.4  | 15.7                          | 31130          | 54             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 84.6  | 14.2                          | 30470          | 48             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 97.1  | 12.4                          | 31350          | 43             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 107.6 | 11.2                          | 31650          | 39             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 123.4 | 9.7                           | 28180          | 30             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 120.9 | 9.9                           | 31350          | 35             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 133.9 | 9.0                           | 31790          | 32             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 168.5 | 7.1                           | 31790          | 26             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 191.0 | 6.3                           | 31570          | 23             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 193.4 | 6.2                           | 31570          | 22             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 214.2 | 5.6                           | 31790          | 20             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 248.6 | 4.8                           | 31350          | 17.2           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 275.4 | 4.4                           | 31790          | 15.7           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 313.0 | 3.8                           | 31570          | 13.7           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 346.7 | 3.5                           | 31790          | 12.5           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 392.9 | 3.1                           | 31570          | 10.9           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 440.7 | 2.7                           | 31790          | 9.8            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 499.4 | 2.4                           | 31570          | 8.6            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

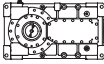
\* 

— Thermal verification not necessary



# HDP 110

$n_1 = 1000 \text{ min}^{-1}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                      |                   |                      |                      |
|---|-------|-------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDP 110 2   | 8.1   | 124                           | 26080          | 352            | *                        | 184                   | 212                  | 302                  | 380                  | 215               | 243                  | 337                  |
| HDP 110 2   | 9.0   | 112                           | 27420          | 334            | *                        | 185                   | 213                  | 303                  | 381                  | 216               | 244                  | 338                  |
| HDP 110 2   | 9.9   | 101                           | 26540          | 291            | 134                      | 191                   | 219                  | 309                  | —                    | 222               | 250                  | 344                  |
| HDP 110 2   | 11.0  | 91                            | 27880          | 276            | 136                      | 193                   | 221                  | 311                  | —                    | 224               | 252                  | 346                  |
| HDP 110 2   | 12.3  | 81                            | 26940          | 239            | 141                      | 198                   | 226                  | 316                  | —                    | 229               | 257                  | —                    |
| HDP 110 2   | 13.6  | 73                            | 28270          | 226            | 141                      | 198                   | 226                  | 316                  | —                    | 229               | 257                  | —                    |
| HDP 110 2   | 15.5  | 65                            | 27330          | 193            | 146                      | 203                   | —                    | 321                  | —                    | 234               | 262                  | —                    |
| HDP 110 2   | 17.1  | 58                            | 28660          | 182            | 146                      | 203                   | —                    | 321                  | —                    | 234               | 262                  | —                    |
| HDP 110 2   | 19.7  | 51                            | 27660          | 153            | 150                      | 207                   | —                    | 325                  | —                    | 238               | 266                  | —                    |
| HDP 110 2   | 21.8  | 46                            | 28990          | 145            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 2   | 25.0  | 40                            | 26700          | 116            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 24.9  | 40                            | 30340          | 136            | 113                      | 151                   | —                    | 240                  | —                    | 176               | 197                  | —                    |
| HDP 110 3   | 27.6  | 36                            | 29420          | 119            | 113                      | 151                   | —                    | 240                  | —                    | 176               | 197                  | —                    |
| HDP 110 3   | 30.7  | 33                            | 30740          | 111            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 34.0  | 29.4                          | 29300          | 96             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 38.7  | 25.9                          | 31010          | 89             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 42.8  | 23.3                          | 29180          | 76             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 49.2  | 20.3                          | 31100          | 70             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 54.5  | 18.4                          | 29270          | 60             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 60.7  | 16.5                          | 30740          | 56             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 67.2  | 14.9                          | 30240          | 50             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 76.4  | 13.1                          | 31130          | 45             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 84.6  | 11.8                          | 31360          | 41             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 97.1  | 10.3                          | 31350          | 36             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 107.6 | 9.3                           | 31790          | 33             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 3   | 123.4 | 8.1                           | 28180          | 25             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 120.9 | 8.3                           | 31350          | 29             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 133.9 | 7.5                           | 31790          | 27             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 168.5 | 5.9                           | 31790          | 21             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 191.0 | 5.2                           | 31570          | 18.8           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 193.4 | 5.2                           | 31570          | 18.5           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 214.2 | 4.7                           | 31790          | 16.8           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 248.6 | 4.0                           | 31350          | 14.3           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 275.4 | 3.6                           | 31790          | 13.1           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 313.0 | 3.2                           | 31570          | 11.5           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 346.7 | 2.9                           | 31790          | 10.4           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 392.9 | 2.5                           | 31570          | 9.1            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 440.7 | 2.3                           | 31790          | 8.2            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 110 4   | 499.4 | 2.0                           | 31570          | 7.2            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |

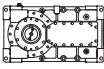
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary





**HDP**

| HDP 110   |       |                               |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |  |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 110 2   | 8.1   | 124                           | 26080          | 352            | *                             | *                     | 144                  | 179                  | 223                  | 170               | 198                  | 292                  |  |
| HDP 110 2   | 9.0   | 112                           | 27420          | 334            | *                             | *                     | 146                  | 181                  | 225                  | 172               | 200                  | 294                  |  |
| HDP 110 2   | 9.9   | 101                           | 26540          | 291            | *                             | 132                   | 152                  | 187                  | 231                  | 178               | 206                  | 300                  |  |
| HDP 110 2   | 11.0  | 91                            | 27880          | 276            | *                             | 133                   | 153                  | 188                  | 232                  | 179               | 207                  | 301                  |  |
| HDP 110 2   | 12.3  | 81                            | 26940          | 239            | 96                            | 138                   | 158                  | 193                  | 237                  | 184               | 212                  | 306                  |  |
| HDP 110 2   | 13.6  | 73                            | 28270          | 226            | 97                            | 139                   | 159                  | 194                  | 238                  | 185               | 213                  | 307                  |  |
| HDP 110 2   | 15.5  | 65                            | 27330          | 193            | 101                           | 143                   | 163                  | 198                  | —                    | 189               | 217                  | —                    |  |
| HDP 110 2   | 17.1  | 58                            | 28660          | 182            | 102                           | 144                   | 164                  | 199                  | —                    | 190               | 218                  | —                    |  |
| HDP 110 2   | 19.7  | 51                            | 27660          | 153            | 106                           | 148                   | 168                  | 203                  | —                    | 194               | 222                  | —                    |  |
| HDP 110 2   | 21.8  | 46                            | 28990          | 145            | 106                           | 148                   | —                    | 203                  | —                    | 194               | 222                  | —                    |  |
| HDP 110 2   | 25.0  | 40                            | 26700          | 116            | 107                           | 149                   | —                    | 204                  | —                    | 195               | 223                  | —                    |  |
| HDP 110 3   | 24.9  | 40                            | 30340          | 136            | 79                            | 107                   | 120                  | 150                  | —                    | 142               | 163                  | —                    |  |
| HDP 110 3   | 27.6  | 36                            | 29420          | 119            | 79                            | 107                   | 120                  | 150                  | —                    | 142               | 163                  | —                    |  |
| HDP 110 3   | 30.7  | 33                            | 30740          | 111            | 80                            | 108                   | 121                  | 151                  | —                    | 143               | 164                  | —                    |  |
| HDP 110 3   | 34.0  | 29.4                          | 29300          | 96             | 80                            | 108                   | —                    | 151                  | —                    | 143               | 164                  | —                    |  |
| HDP 110 3   | 38.7  | 25.9                          | 31010          | 89             | 81                            | 109                   | —                    | 152                  | —                    | 144               | 165                  | —                    |  |
| HDP 110 3   | 42.8  | 23.3                          | 29180          | 76             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 49.2  | 20.3                          | 31100          | 70             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 54.5  | 18.4                          | 29270          | 60             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 60.7  | 16.5                          | 30740          | 56             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 67.2  | 14.9                          | 30240          | 50             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 76.4  | 13.1                          | 31130          | 45             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 84.6  | 11.8                          | 31360          | 41             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 97.1  | 10.3                          | 31350          | 36             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 107.6 | 9.3                           | 31790          | 33             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 3   | 123.4 | 8.1                           | 28180          | 25             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 120.9 | 8.3                           | 31350          | 29             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 133.9 | 7.5                           | 31790          | 27             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 168.5 | 5.9                           | 31790          | 21             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 191.0 | 5.2                           | 31570          | 18.8           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 193.4 | 5.2                           | 31570          | 18.5           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 214.2 | 4.7                           | 31790          | 16.8           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 248.6 | 4.0                           | 31350          | 14.3           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 275.4 | 3.6                           | 31790          | 13.1           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 313.0 | 3.2                           | 31570          | 11.5           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 346.7 | 2.9                           | 31790          | 10.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 392.9 | 2.5                           | 31570          | 9.1            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 440.7 | 2.3                           | 31790          | 8.2            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 110 4   | 499.4 | 2.0                           | 31570          | 7.2            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

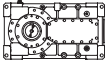
\* 

— Thermal verification not necessary



**HDP 120**

$n_1 = 1800 \text{ min}^{-1}$

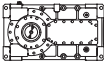
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                              |                             |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDP 120 2   | 7.9   | 228                                    | 31180                   | 774                     | *                      | *                            | *                           | *                           | 344                         | *                        | *                           | *                           |
| HDP 120 2   | 8.6   | 209                                    | 31770                   | 724                     | *                      | *                            | *                           | *                           | 347                         | *                        | *                           | 304                         |
| HDP 120 2   | 10.3  | 175                                    | 33810                   | 644                     | *                      | *                            | 277                         | 295                         | 373                         | *                        | *                           | 330                         |
| HDP 120 2   | 11.2  | 160                                    | 34440                   | 602                     | *                      | *                            | 279                         | 297                         | 375                         | *                        | *                           | 332                         |
| HDP 120 2   | 13.0  | 138                                    | 35100                   | 529                     | *                      | 245                          | 296                         | 314                         | 392                         | 227                      | 255                         | 349                         |
| HDP 120 2   | 14.2  | 127                                    | 35830                   | 496                     | *                      | 246                          | 297                         | 315                         | 393                         | 228                      | 256                         | 350                         |
| HDP 120 2   | 16.0  | 113                                    | 36900                   | 453                     | *                      | 257                          | 308                         | 326                         | 404                         | 239                      | 267                         | 361                         |
| HDP 120 2   | 17.4  | 103                                    | 37690                   | 425                     | *                      | 259                          | 310                         | 328                         | 406                         | 241                      | 269                         | 363                         |
| HDP 120 2   | 20.6  | 87                                     | 39000                   | 371                     | 164                    | 270                          | 321                         | 339                         | 417                         | 252                      | 280                         | 374                         |
| HDP 120 2   | 22.5  | 80                                     | 39990                   | 349                     | 165                    | 271                          | 322                         | 340                         | 418                         | 253                      | 281                         | 375                         |
| HDP 120 2   | 25.4  | 71                                     | 36810                   | 285                     | 166                    | 272                          | 323                         | 341                         | —                           | 254                      | 282                         | 376                         |
| HDP 120 3   | 25.8  | 70                                     | 34260                   | 266                     | 123                    | 197                          | 233                         | 250                         | 307                         | 186                      | 207                         | 275                         |
| HDP 120 3   | 28.0  | 64                                     | 34980                   | 250                     | 123                    | 197                          | 233                         | 250                         | —                           | 186                      | 207                         | 275                         |
| HDP 120 3   | 32.5  | 55                                     | 35860                   | 221                     | 127                    | 201                          | 237                         | 254                         | —                           | 190                      | 211                         | 279                         |
| HDP 120 3   | 35.4  | 51                                     | 36410                   | 206                     | 127                    | 201                          | 237                         | 254                         | —                           | 190                      | 211                         | —                           |
| HDP 120 3   | 39.9  | 45                                     | 37670                   | 189                     | 130                    | 204                          | —                           | 257                         | —                           | 193                      | 214                         | —                           |
| HDP 120 3   | 43.5  | 41                                     | 38220                   | 176                     | 130                    | 204                          | —                           | 257                         | —                           | 193                      | 214                         | —                           |
| HDP 120 3   | 51.6  | 35                                     | 38880                   | 151                     | 133                    | 207                          | —                           | 260                         | —                           | 196                      | 217                         | —                           |
| HDP 120 3   | 56.1  | 32                                     | 38500                   | 137                     | 133                    | 207                          | —                           | 260                         | —                           | 196                      | 217                         | —                           |
| HDP 120 3   | 64.3  | 28.0                                   | 38880                   | 121                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 70.0  | 25.7                                   | 38500                   | 110                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 78.9  | 22.8                                   | 38880                   | 99                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 85.9  | 21.0                                   | 38500                   | 90                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 101.8 | 17.7                                   | 38880                   | 76                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 110.9 | 16.2                                   | 38500                   | 70                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 125.2 | 14.4                                   | 34920                   | 56                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 128.0 | 14.1                                   | 35910                   | 57                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 139.4 | 12.9                                   | 39160                   | 57                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 157.1 | 11.5                                   | 37010                   | 48                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 171.1 | 10.5                                   | 38500                   | 46                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 202.8 | 8.9                                    | 38880                   | 39                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 220.8 | 8.2                                    | 38500                   | 36                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 254.6 | 7.1                                    | 38880                   | 31                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 277.2 | 6.5                                    | 38500                   | 28                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 323.2 | 5.6                                    | 38880                   | 25                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 351.9 | 5.1                                    | 38500                   | 22                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 405.7 | 4.4                                    | 38880                   | 19.6                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 454.3 | 4.0                                    | 40920                   | 18.4                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 523.7 | 3.4                                    | 41250                   | 16.1                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP**

| HDP 120   |       |                               |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |     |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|-----|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |     |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |     |
| HDP 120 2   | 7.9   | 228                           | 31180          | 774            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | *   |
| HDP 120 2   | 8.6   | 209                           | 31770          | 724            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | *   |
| HDP 120 2   | 10.3  | 175                           | 33810          | 644            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 275 |
| HDP 120 2   | 11.2  | 160                           | 34440          | 602            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 277 |
| HDP 120 2   | 13.0  | 138                           | 35100          | 529            | *                             | *                     | *                    | *                    | 225                  | *                 | *                    | *                    | 294 |
| HDP 120 2   | 14.2  | 127                           | 35830          | 496            | *                             | *                     | 201                  | *                    | 227                  | *                 | 202                  | *                    | 296 |
| HDP 120 2   | 16.0  | 113                           | 36900          | 453            | *                             | *                     | 212                  | 194                  | 238                  | 185               | 213                  | *                    | 307 |
| HDP 120 2   | 17.4  | 103                           | 37690          | 425            | *                             | 176                   | 213                  | 195                  | 239                  | 186               | 214                  | *                    | 308 |
| HDP 120 2   | 20.6  | 87                            | 39000          | 371            | *                             | 187                   | 224                  | 206                  | 250                  | 197               | 225                  | *                    | 319 |
| HDP 120 2   | 22.5  | 80                            | 39990          | 349            | *                             | 188                   | 225                  | 207                  | 251                  | 198               | 226                  | *                    | 320 |
| HDP 120 2   | 25.4  | 71                            | 36810          | 285            | *                             | 190                   | 227                  | 209                  | 253                  | 200               | 228                  | *                    | 322 |
| HDP 120 3   | 25.8  | 70                            | 34260          | 266            | *                             | 135                   | 162                  | 152                  | 183                  | 144               | 165                  | *                    | 233 |
| HDP 120 3   | 28.0  | 64                            | 34980          | 250            | *                             | 135                   | 162                  | 152                  | 183                  | 144               | 165                  | *                    | 233 |
| HDP 120 3   | 32.5  | 55                            | 35860          | 221            | *                             | 139                   | 166                  | 156                  | 187                  | 148               | 169                  | *                    | 237 |
| HDP 120 3   | 35.4  | 51                            | 36410          | 206            | 86                            | 140                   | 167                  | 157                  | 188                  | 149               | 170                  | *                    | 238 |
| HDP 120 3   | 39.9  | 45                            | 37670          | 189            | 88                            | 142                   | 169                  | 159                  | 190                  | 151               | 172                  | *                    | 240 |
| HDP 120 3   | 43.5  | 41                            | 38220          | 176            | 89                            | 143                   | 170                  | 160                  | 191                  | 152               | 173                  | *                    | 241 |
| HDP 120 3   | 51.6  | 35                            | 38880          | 151            | 91                            | 145                   | 172                  | 162                  | —                    | 154               | 175                  | —                    | —   |
| HDP 120 3   | 56.1  | 32                            | 38500          | 137            | 91                            | 145                   | —                    | 162                  | —                    | 154               | 175                  | —                    | —   |
| HDP 120 3   | 64.3  | 28.0                          | 38880          | 121            | 100                           | 154                   | —                    | 171                  | —                    | 163               | 184                  | —                    | —   |
| HDP 120 3   | 70.0  | 25.7                          | 38500          | 110            | 100                           | 154                   | —                    | 171                  | —                    | 163               | 184                  | —                    | —   |
| HDP 120 3   | 78.9  | 22.8                          | 38880          | 99             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 85.9  | 21.0                          | 38500          | 90             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 101.8 | 17.7                          | 38880          | 76             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 110.9 | 16.2                          | 38500          | 70             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 125.2 | 14.4                          | 34920          | 56             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 128.0 | 14.1                          | 35910          | 57             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 139.4 | 12.9                          | 39160          | 57             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 157.1 | 11.5                          | 37010          | 48             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 171.1 | 10.5                          | 38500          | 46             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 202.8 | 8.9                           | 38880          | 39             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 220.8 | 8.2                           | 38500          | 36             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 254.6 | 7.1                           | 38880          | 31             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 277.2 | 6.5                           | 38500          | 28             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 323.2 | 5.6                           | 38880          | 25             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 351.9 | 5.1                           | 38500          | 22             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 405.7 | 4.4                           | 38880          | 19.6           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 454.3 | 4.0                           | 40920          | 18.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 523.7 | 3.4                           | 41250          | 16.1           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |

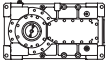
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— Thermal verification not necessary



HDP 120

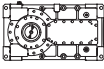
$n_1 = 1500 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                              |                             |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDP 120 2   | 7.9   | 190                                    | 32940                   | 681                     | *                      | *                            | *                           | 291                         | 369                         | *                        | *                           | 326                         |
| HDP 120 2   | 8.6   | 174                                    | 33560                   | 637                     | *                      | *                            | 255                         | 294                         | 372                         | *                        | *                           | 329                         |
| HDP 120 2   | 10.3  | 146                                    | 35710                   | 567                     | *                      | 231                          | 275                         | 314                         | 392                         | *                        | 255                         | 349                         |
| HDP 120 2   | 11.2  | 134                                    | 36370                   | 530                     | *                      | 232                          | 276                         | 315                         | 393                         | 228                      | 256                         | 350                         |
| HDP 120 2   | 13.0  | 115                                    | 37080                   | 466                     | *                      | 245                          | 289                         | 328                         | 406                         | 241                      | 269                         | 363                         |
| HDP 120 2   | 14.2  | 106                                    | 37840                   | 437                     | *                      | 247                          | 291                         | 330                         | 408                         | 243                      | 271                         | 365                         |
| HDP 120 2   | 16.0  | 94                                     | 38580                   | 395                     | 163                    | 255                          | 299                         | 338                         | 416                         | 251                      | 279                         | 373                         |
| HDP 120 2   | 17.4  | 86                                     | 39810                   | 374                     | 164                    | 256                          | 300                         | 339                         | 417                         | 252                      | 280                         | 374                         |
| HDP 120 2   | 20.6  | 73                                     | 39000                   | 309                     | 173                    | 265                          | 309                         | 348                         | —                           | 261                      | 289                         | 383                         |
| HDP 120 2   | 22.5  | 67                                     | 39780                   | 290                     | 174                    | 266                          | 310                         | 349                         | —                           | 262                      | 290                         | 384                         |
| HDP 120 2   | 25.4  | 59                                     | 36630                   | 236                     | 175                    | 267                          | —                           | 350                         | —                           | 263                      | 291                         | —                           |
| HDP 120 3   | 25.8  | 58                                     | 36330                   | 235                     | 130                    | 194                          | 226                         | 257                         | —                           | 193                      | 214                         | 282                         |
| HDP 120 3   | 28.0  | 53                                     | 37110                   | 221                     | 131                    | 195                          | 227                         | 258                         | —                           | 194                      | 215                         | 283                         |
| HDP 120 3   | 32.5  | 46                                     | 38040                   | 195                     | 133                    | 197                          | —                           | 260                         | —                           | 196                      | 217                         | —                           |
| HDP 120 3   | 35.4  | 42                                     | 38620                   | 182                     | 134                    | 198                          | —                           | 261                         | —                           | 197                      | 218                         | —                           |
| HDP 120 3   | 39.9  | 38                                     | 39930                   | 167                     | 136                    | 200                          | —                           | 263                         | —                           | 199                      | 220                         | —                           |
| HDP 120 3   | 43.5  | 34                                     | 39150                   | 150                     | 136                    | 200                          | —                           | 263                         | —                           | 199                      | 220                         | —                           |
| HDP 120 3   | 51.6  | 29.1                                   | 40410                   | 131                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 56.1  | 26.7                                   | 38960                   | 116                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 64.3  | 23.3                                   | 40250                   | 105                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 70.0  | 21.4                                   | 38800                   | 93                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 78.9  | 19.0                                   | 40600                   | 86                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 85.9  | 17.5                                   | 39160                   | 76                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 101.8 | 14.7                                   | 41250                   | 68                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 110.9 | 13.5                                   | 40740                   | 61                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 3   | 125.2 | 12.0                                   | 37570                   | 50                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 128.0 | 11.7                                   | 38110                   | 51                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 139.4 | 10.8                                   | 40920                   | 50                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 157.1 | 9.5                                    | 39600                   | 43                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 171.1 | 8.8                                    | 40920                   | 41                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 202.8 | 7.4                                    | 41250                   | 35                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 220.8 | 6.8                                    | 40920                   | 32                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 254.6 | 5.9                                    | 41250                   | 28                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 277.2 | 5.4                                    | 40920                   | 25                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 323.2 | 4.6                                    | 41250                   | 22                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 351.9 | 4.3                                    | 40920                   | 19.8                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 405.7 | 3.7                                    | 41250                   | 17.3                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 454.3 | 3.3                                    | 40920                   | 15.3                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 120 4   | 523.7 | 2.9                                    | 41250                   | 13.4                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDP 120   |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |     |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|-----|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |     |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |     |
| HDP 120 2   | 7.9   | 190                            | 32940          | 681            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | *   |
| HDP 120 2   | 8.6   | 174                            | 33560          | 637            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 275 |
| HDP 120 2   | 10.3  | 146                            | 35710          | 567            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 294 |
| HDP 120 2   | 11.2  | 134                            | 36370          | 530            | *                             | *                     | *                    | *                    | 227                  | *                 | *                    | *                    | 296 |
| HDP 120 2   | 13.0  | 115                            | 37080          | 466            | *                             | *                     | 199                  | 196                  | 240                  | 187               | 215                  | 215                  | 309 |
| HDP 120 2   | 14.2  | 106                            | 37840          | 437            | *                             | *                     | 200                  | 197                  | 241                  | 188               | 216                  | 216                  | 310 |
| HDP 120 2   | 16.0  | 94                             | 38580          | 395            | *                             | 176                   | 209                  | 206                  | 250                  | 197               | 225                  | 225                  | 319 |
| HDP 120 2   | 17.4  | 86                             | 39810          | 374            | *                             | 177                   | 210                  | 207                  | 251                  | 198               | 226                  | 226                  | 320 |
| HDP 120 2   | 20.6  | 73                             | 39000          | 309            | *                             | 185                   | 218                  | 215                  | 259                  | 206               | 234                  | 234                  | 328 |
| HDP 120 2   | 22.5  | 67                             | 39780          | 290            | 119                           | 186                   | 219                  | 216                  | 260                  | 207               | 235                  | 235                  | 329 |
| HDP 120 2   | 25.4  | 59                             | 36630          | 236            | 120                           | 187                   | 220                  | 217                  | 261                  | 208               | 236                  | 236                  | 330 |
| HDP 120 3   | 25.8  | 58                             | 36330          | 235            | *                             | 135                   | 158                  | 159                  | 190                  | 151               | 172                  | 172                  | 240 |
| HDP 120 3   | 28.0  | 53                             | 37110          | 221            | 89                            | 136                   | 159                  | 160                  | 191                  | 152               | 173                  | 173                  | 241 |
| HDP 120 3   | 32.5  | 46                             | 38040          | 195            | 92                            | 139                   | 162                  | 163                  | 194                  | 155               | 176                  | 176                  | 244 |
| HDP 120 3   | 35.4  | 42                             | 38620          | 182            | 92                            | 139                   | 162                  | 163                  | 194                  | 155               | 176                  | 176                  | 244 |
| HDP 120 3   | 39.9  | 38                             | 39930          | 167            | 94                            | 141                   | 164                  | 165                  | 196                  | 157               | 178                  | 178                  | —   |
| HDP 120 3   | 43.5  | 34                             | 39150          | 150            | 94                            | 141                   | 164                  | 165                  | —                    | 157               | 178                  | 178                  | —   |
| HDP 120 3   | 51.6  | 29.1                           | 40410          | 131            | 96                            | 143                   | —                    | 167                  | —                    | 159               | 180                  | 180                  | —   |
| HDP 120 3   | 56.1  | 26.7                           | 38960          | 116            | 96                            | 143                   | —                    | 167                  | —                    | 159               | 180                  | 180                  | —   |
| HDP 120 3   | 64.3  | 23.3                           | 40250          | 105            | 103                           | 150                   | —                    | 174                  | —                    | 166               | 187                  | 187                  | —   |
| HDP 120 3   | 70.0  | 21.4                           | 38800          | 93             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 78.9  | 19.0                           | 40600          | 86             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 85.9  | 17.5                           | 39160          | 76             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 101.8 | 14.7                           | 41250          | 68             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 110.9 | 13.5                           | 40740          | 61             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 125.2 | 12.0                           | 37570          | 50             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 128.0 | 11.7                           | 38110          | 51             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 139.4 | 10.8                           | 40920          | 50             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 157.1 | 9.5                            | 39600          | 43             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 171.1 | 8.8                            | 40920          | 41             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 202.8 | 7.4                            | 41250          | 35             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 220.8 | 6.8                            | 40920          | 32             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 254.6 | 5.9                            | 41250          | 28             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 277.2 | 5.4                            | 40920          | 25             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 323.2 | 4.6                            | 41250          | 22             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 351.9 | 4.3                            | 40920          | 19.8           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 405.7 | 3.7                            | 41250          | 17.3           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 454.3 | 3.3                            | 40920          | 15.3           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 523.7 | 2.9                            | 41250          | 13.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |

\*  BONFIGLIOLI TECHNICAL SERVICE

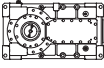
— Thermal verification not necessary



HDP

HDP 120

$n_1 = 1200 \text{ min}^{-1}$

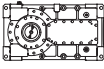
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                      |                   |                      |                      |
|---|-------|--------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|
|   |       |                                |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDP 120 2   | 7.9   | 152                            | 35220          | 583            | *                        | *                     | 258                  | 310                  | 388                  | *                 | 251                  | 345                  |
| HDP 120 2   | 8.6   | 139                            | 35880          | 545            | *                        | 220                   | 260                  | 312                  | 390                  | 225               | 253                  | 347                  |
| HDP 120 2   | 10.3  | 116                            | 37550          | 477            | *                        | 236                   | 276                  | 328                  | 406                  | 241               | 269                  | 363                  |
| HDP 120 2   | 11.2  | 107                            | 38890          | 454            | *                        | 237                   | 277                  | 329                  | 407                  | 242               | 270                  | 364                  |
| HDP 120 2   | 13.0  | 92                             | 38140          | 383            | 164                      | 247                   | 287                  | 339                  | 417                  | 252               | 280                  | 374                  |
| HDP 120 2   | 14.2  | 85                             | 39590          | 366            | 165                      | 248                   | 288                  | 340                  | 418                  | 253               | 281                  | 375                  |
| HDP 120 2   | 16.0  | 75                             | 38580          | 316            | 172                      | 255                   | 295                  | 347                  | —                    | 260               | 288                  | 382                  |
| HDP 120 2   | 17.4  | 69                             | 39820          | 299            | 173                      | 256                   | 296                  | 348                  | —                    | 261               | 289                  | 383                  |
| HDP 120 2   | 20.6  | 58                             | 39000          | 247            | 179                      | 262                   | —                    | 354                  | —                    | 267               | 295                  | —                    |
| HDP 120 2   | 22.5  | 53                             | 39550          | 230            | 180                      | 263                   | —                    | 355                  | —                    | 268               | 296                  | —                    |
| HDP 120 2   | 25.4  | 47                             | 36420          | 188            | 181                      | 264                   | —                    | 356                  | —                    | 269               | 297                  | —                    |
| HDP 120 3   | 25.8  | 47                             | 38840          | 201            | 136                      | 194                   | 222                  | 263                  | —                    | 199               | 220                  | —                    |
| HDP 120 3   | 28.0  | 43                             | 39340          | 187            | 136                      | 194                   | —                    | 263                  | —                    | 199               | 220                  | —                    |
| HDP 120 3   | 32.5  | 37                             | 40610          | 167            | 138                      | 196                   | —                    | 265                  | —                    | 201               | 222                  | —                    |
| HDP 120 3   | 35.4  | 34                             | 39140          | 147            | 138                      | 196                   | —                    | 265                  | —                    | 201               | 222                  | —                    |
| HDP 120 3   | 39.9  | 30                             | 40430          | 135            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 3   | 43.5  | 27.6                           | 38980          | 120            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 3   | 51.6  | 23.3                           | 40240          | 104            | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 3   | 56.1  | 21.4                           | 38800          | 92             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 3   | 64.3  | 18.7                           | 40710          | 85             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 3   | 70.0  | 17.1                           | 39270          | 75             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 3   | 78.9  | 15.2                           | 41250          | 70             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 3   | 85.9  | 14.0                           | 40540          | 63             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 3   | 101.8 | 11.8                           | 41250          | 54             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 3   | 110.9 | 10.8                           | 40920          | 49             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 3   | 125.2 | 9.6                            | 37730          | 40             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 128.0 | 9.4                            | 40750          | 43             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 139.4 | 8.6                            | 40920          | 40             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 157.1 | 7.6                            | 41250          | 36             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 171.1 | 7.0                            | 40920          | 33             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 202.8 | 5.9                            | 41250          | 28             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 220.8 | 5.4                            | 40920          | 25             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 254.6 | 4.7                            | 41250          | 22             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 277.2 | 4.3                            | 40920          | 20             | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 323.2 | 3.7                            | 41250          | 17.4           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 351.9 | 3.4                            | 40920          | 15.8           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 405.7 | 3.0                            | 41250          | 13.9           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 454.3 | 2.6                            | 40920          | 12.3           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |
| HDP 120 4   | 523.7 | 2.3                            | 41250          | 10.7           | —                        | —                     | —                    | —                    | —                    | —                 | —                    | —                    |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



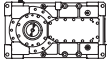
**HDP**

| HDP 120   |       |                                |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |     |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|-----|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |     |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |     |
| HDP 120 2   | 7.9   | 152                            | 35220          | 583            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 291 |
| HDP 120 2   | 8.6   | 139                            | 35880          | 545            | *                             | *                     | *                    | *                    | 224                  | *                 | *                    | *                    | 293 |
| HDP 120 2   | 10.3  | 116                            | 37550          | 477            | *                             | *                     | *                    | 195                  | 239                  | *                 | 214                  | *                    | 308 |
| HDP 120 2   | 11.2  | 107                            | 38890          | 454            | *                             | *                     | 189                  | 196                  | 240                  | 187               | 215                  | *                    | 309 |
| HDP 120 2   | 13.0  | 92                             | 38140          | 383            | *                             | 170                   | 199                  | 206                  | 250                  | 197               | 225                  | *                    | 319 |
| HDP 120 2   | 14.2  | 85                             | 39590          | 366            | *                             | 172                   | 201                  | 208                  | 252                  | 199               | 227                  | *                    | 321 |
| HDP 120 2   | 16.0  | 75                             | 38580          | 316            | *                             | 178                   | 207                  | 214                  | 258                  | 205               | 233                  | *                    | 327 |
| HDP 120 2   | 17.4  | 69                             | 39820          | 299            | *                             | 179                   | 208                  | 215                  | 259                  | 206               | 234                  | *                    | 328 |
| HDP 120 2   | 20.6  | 58                             | 39000          | 247            | 125                           | 186                   | 215                  | 222                  | 266                  | 213               | 241                  | *                    | 335 |
| HDP 120 2   | 22.5  | 53                             | 39550          | 230            | 125                           | 186                   | 215                  | 222                  | 266                  | 213               | 241                  | —                    | —   |
| HDP 120 2   | 25.4  | 47                             | 36420          | 188            | 126                           | 187                   | 216                  | 223                  | —                    | 214               | 242                  | —                    | —   |
| HDP 120 3   | 25.8  | 47                             | 38840          | 201            | 94                            | 136                   | 157                  | 165                  | 196                  | 157               | 178                  | *                    | 246 |
| HDP 120 3   | 28.0  | 43                             | 39340          | 187            | 94                            | 136                   | 157                  | 165                  | 196                  | 157               | 178                  | *                    | 246 |
| HDP 120 3   | 32.5  | 37                             | 40610          | 167            | 96                            | 138                   | 159                  | 167                  | —                    | 159               | 180                  | —                    | —   |
| HDP 120 3   | 35.4  | 34                             | 39140          | 147            | 97                            | 139                   | 160                  | 168                  | —                    | 160               | 181                  | —                    | —   |
| HDP 120 3   | 39.9  | 30                             | 40430          | 135            | 98                            | 140                   | —                    | 169                  | —                    | 161               | 182                  | —                    | —   |
| HDP 120 3   | 43.5  | 27.6                           | 38980          | 120            | 98                            | 140                   | —                    | 169                  | —                    | 161               | 182                  | —                    | —   |
| HDP 120 3   | 51.6  | 23.3                           | 40240          | 104            | 100                           | 142                   | —                    | 171                  | —                    | 163               | 184                  | —                    | —   |
| HDP 120 3   | 56.1  | 21.4                           | 38800          | 92             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 64.3  | 18.7                           | 40710          | 85             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 70.0  | 17.1                           | 39270          | 75             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 78.9  | 15.2                           | 41250          | 70             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 85.9  | 14.0                           | 40540          | 63             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 101.8 | 11.8                           | 41250          | 54             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 110.9 | 10.8                           | 40920          | 49             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 3   | 125.2 | 9.6                            | 37730          | 40             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 128.0 | 9.4                            | 40750          | 43             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 139.4 | 8.6                            | 40920          | 40             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 157.1 | 7.6                            | 41250          | 36             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 171.1 | 7.0                            | 40920          | 33             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 202.8 | 5.9                            | 41250          | 28             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 220.8 | 5.4                            | 40920          | 25             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 254.6 | 4.7                            | 41250          | 22             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 277.2 | 4.3                            | 40920          | 20             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 323.2 | 3.7                            | 41250          | 17.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 351.9 | 3.4                            | 40920          | 15.8           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 405.7 | 3.0                            | 41250          | 13.9           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 454.3 | 2.6                            | 40920          | 12.3           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 120 4   | 523.7 | 2.3                            | 41250          | 10.7           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |

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— Thermal verification not necessary



| HDP 120   |       |                                |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |  |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 120 2   | 7.9   | 126                            | 36820          | 508            | *                             | 212                   | 244                  | 323                  | 401                  | 236               | 264                  | 358                  |  |
| HDP 120 2   | 8.6   | 116                            | 37900          | 480            | *                             | 214                   | 246                  | 325                  | 403                  | 238               | 266                  | 360                  |  |
| HDP 120 2   | 10.3  | 97                             | 37550          | 397            | 162                           | 226                   | 258                  | 337                  | 415                  | 250               | 278                  | 372                  |  |
| HDP 120 2   | 11.2  | 89                             | 39010          | 379            | 163                           | 227                   | 259                  | 338                  | 416                  | 251               | 279                  | 373                  |  |
| HDP 120 2   | 13.0  | 77                             | 38520          | 323            | 171                           | 235                   | 267                  | 346                  | —                    | 259               | 287                  | 381                  |  |
| HDP 120 2   | 14.2  | 71                             | 39590          | 305            | 172                           | 236                   | 268                  | 347                  | —                    | 260               | 288                  | 382                  |  |
| HDP 120 2   | 16.0  | 63                             | 38920          | 266            | 178                           | 242                   | 274                  | 353                  | —                    | 266               | 294                  | —                    |  |
| HDP 120 2   | 17.4  | 57                             | 39630          | 248            | 178                           | 242                   | 274                  | 353                  | —                    | 266               | 294                  | —                    |  |
| HDP 120 2   | 20.6  | 48                             | 39000          | 206            | 184                           | 248                   | —                    | 359                  | —                    | 272               | 300                  | —                    |  |
| HDP 120 2   | 22.5  | 45                             | 39380          | 191            | 184                           | 248                   | —                    | 359                  | —                    | 272               | 300                  | —                    |  |
| HDP 120 2   | 25.4  | 39                             | 36270          | 156            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 25.8  | 39                             | 40090          | 173            | 139                           | 184                   | —                    | 266                  | —                    | 202               | 223                  | —                    |  |
| HDP 120 3   | 28.0  | 36                             | 39180          | 155            | 140                           | 185                   | —                    | 267                  | —                    | 203               | 224                  | —                    |  |
| HDP 120 3   | 32.5  | 31                             | 40450          | 138            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 35.4  | 28.2                           | 39000          | 122            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 39.9  | 25.0                           | 40300          | 112            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 43.5  | 23.0                           | 38850          | 99             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 51.6  | 19.4                           | 40480          | 87             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 56.1  | 17.8                           | 39040          | 77             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 64.3  | 15.6                           | 40860          | 71             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 70.0  | 14.3                           | 40390          | 64             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 78.9  | 12.7                           | 41250          | 58             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 85.9  | 11.6                           | 40920          | 53             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 101.8 | 9.8                            | 41250          | 45             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 110.9 | 9.0                            | 40920          | 41             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 3   | 125.2 | 8.0                            | 37730          | 34             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 128.0 | 7.8                            | 41250          | 37             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 139.4 | 7.2                            | 40920          | 33             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 157.1 | 6.4                            | 41250          | 30             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 171.1 | 5.8                            | 40920          | 27             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 202.8 | 4.9                            | 41250          | 23             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 220.8 | 4.5                            | 40920          | 21             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 254.6 | 3.9                            | 41250          | 18.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 277.2 | 3.6                            | 40920          | 16.8           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 323.2 | 3.1                            | 41250          | 14.5           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 351.9 | 2.8                            | 40920          | 13.2           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 405.7 | 2.5                            | 41250          | 11.5           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 454.3 | 2.2                            | 40920          | 10.2           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 120 4   | 523.7 | 1.9                            | 41250          | 8.9            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

\*  BONFIGLIOLI TECHNICAL SERVICE

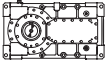
— Thermal verification not necessary





**HDP**

**HDP 120**  $n_1 = 1000 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                              |                             |                             |                             |                          |                             |                             |  |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|--|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |  |
| HDP 120 2   | 7.9   | 126                                    | 36820                   | 508                     | *                      | *                            | *                           | *                           | 235                         | *                        | 210                         | 304                         |  |
| HDP 120 2   | 8.6   | 116                                    | 37900                   | 480                     | *                      | *                            | *                           | 192                         | 236                         | *                        | 211                         | 305                         |  |
| HDP 120 2   | 10.3  | 97                                     | 37550                   | 397                     | *                      | *                            | 178                         | 205                         | 249                         | 196                      | 224                         | 318                         |  |
| HDP 120 2   | 11.2  | 89                                     | 39010                   | 379                     | *                      | 156                          | 179                         | 206                         | 250                         | 197                      | 225                         | 319                         |  |
| HDP 120 2   | 13.0  | 77                                     | 38520                   | 323                     | *                      | 164                          | 187                         | 214                         | 258                         | 205                      | 233                         | 327                         |  |
| HDP 120 2   | 14.2  | 71                                     | 39590                   | 305                     | *                      | 165                          | 188                         | 215                         | 259                         | 206                      | 234                         | 328                         |  |
| HDP 120 2   | 16.0  | 63                                     | 38920                   | 266                     | 123                    | 170                          | 193                         | 220                         | 264                         | 211                      | 239                         | 333                         |  |
| HDP 120 2   | 17.4  | 57                                     | 39630                   | 248                     | 124                    | 171                          | 194                         | 221                         | 265                         | 212                      | 240                         | 334                         |  |
| HDP 120 2   | 20.6  | 48                                     | 39000                   | 206                     | 129                    | 176                          | 199                         | 226                         | —                           | 217                      | 245                         | —                           |  |
| HDP 120 2   | 22.5  | 45                                     | 39380                   | 191                     | 130                    | 177                          | 200                         | 227                         | —                           | 218                      | 246                         | —                           |  |
| HDP 120 2   | 25.4  | 39                                     | 36270                   | 156                     | 130                    | 177                          | —                           | 227                         | —                           | 218                      | 246                         | —                           |  |
| HDP 120 3   | 25.8  | 39                                     | 40090                   | 173                     | 98                     | 131                          | 147                         | 169                         | 200                         | 161                      | 182                         | —                           |  |
| HDP 120 3   | 28.0  | 36                                     | 39180                   | 155                     | 98                     | 131                          | 147                         | 169                         | —                           | 161                      | 182                         | —                           |  |
| HDP 120 3   | 32.5  | 31                                     | 40450                   | 138                     | 100                    | 133                          | 149                         | 171                         | —                           | 163                      | 184                         | —                           |  |
| HDP 120 3   | 35.4  | 28.2                                   | 39000                   | 122                     | 100                    | 133                          | —                           | 171                         | —                           | 163                      | 184                         | —                           |  |
| HDP 120 3   | 39.9  | 25.0                                   | 40300                   | 112                     | 101                    | 134                          | —                           | 172                         | —                           | 164                      | 185                         | —                           |  |
| HDP 120 3   | 43.5  | 23.0                                   | 38850                   | 99                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 3   | 51.6  | 19.4                                   | 40480                   | 87                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 3   | 56.1  | 17.8                                   | 39040                   | 77                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 3   | 64.3  | 15.6                                   | 40860                   | 71                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 3   | 70.0  | 14.3                                   | 40390                   | 64                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 3   | 78.9  | 12.7                                   | 41250                   | 58                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 3   | 85.9  | 11.6                                   | 40920                   | 53                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 3   | 101.8 | 9.8                                    | 41250                   | 45                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 3   | 110.9 | 9.0                                    | 40920                   | 41                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 3   | 125.2 | 8.0                                    | 37730                   | 34                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 128.0 | 7.8                                    | 41250                   | 37                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 139.4 | 7.2                                    | 40920                   | 33                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 157.1 | 6.4                                    | 41250                   | 30                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 171.1 | 5.8                                    | 40920                   | 27                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 202.8 | 4.9                                    | 41250                   | 23                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 220.8 | 4.5                                    | 40920                   | 21                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 254.6 | 3.9                                    | 41250                   | 18.4                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 277.2 | 3.6                                    | 40920                   | 16.8                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 323.2 | 3.1                                    | 41250                   | 14.5                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 351.9 | 2.8                                    | 40920                   | 13.2                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 405.7 | 2.5                                    | 41250                   | 11.5                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 454.3 | 2.2                                    | 40920                   | 10.2                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |
| HDP 120 4   | 523.7 | 1.9                                    | 41250                   | 8.9                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |  |

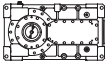
\* 

— Thermal verification not necessary



HDP 125

$n_1 = 1800 \text{ min}^{-1}$

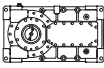
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                       |                   |                      |                      |
|---|-------|--------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|-----------------------|-------------------|----------------------|----------------------|
|   |       |                                |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRAS}$<br>[kW] | $P_{TMCRAS9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDP 125 2   | 8.9   | 202                            | 38070          | 837            | *                        | *                     | *                    | *                    | 355                   | *                 | *                    | *                    |
| HDP 125 2   | 9.6   | 187                            | 38660          | 790            | *                        | *                     | *                    | *                    | 387                   | *                 | *                    | 344                  |
| HDP 125 2   | 11.6  | 155                            | 41280          | 697            | *                        | *                     | 303                  | 321                  | 399                   | *                 | *                    | 356                  |
| HDP 125 2   | 12.5  | 144                            | 41890          | 657            | *                        | 271                   | 322                  | 340                  | 418                   | *                 | 281                  | 375                  |
| HDP 125 2   | 14.7  | 123                            | 42740          | 571            | *                        | 274                   | 325                  | 343                  | 421                   | 256               | 284                  | 378                  |
| HDP 125 2   | 15.8  | 114                            | 43450          | 540            | *                        | 285                   | 336                  | 354                  | 432                   | 267               | 295                  | 389                  |
| HDP 125 2   | 18.0  | 100                            | 44090          | 480            | *                        | 287                   | 338                  | 356                  | 434                   | 269               | 297                  | 391                  |
| HDP 125 2   | 19.4  | 93                             | 45480          | 460            | 191                      | 297                   | 348                  | 366                  | 444                   | 279               | 307                  | 401                  |
| HDP 125 2   | 23.3  | 77                             | 44580          | 376            | 193                      | 299                   | 350                  | 368                  | 446                   | 281               | 309                  | 403                  |
| HDP 125 2   | 25.0  | 72                             | 45950          | 360            | 194                      | 300                   | 351                  | 369                  | —                     | 282               | 310                  | 404                  |
| HDP 125 3   | 29.1  | 62                             | 38810          | 267            | 150                      | 224                   | 260                  | 277                  | —                     | 213               | 234                  | 302                  |
| HDP 125 3   | 31.3  | 58                             | 41360          | 265            | 153                      | 227                   | 263                  | 280                  | —                     | 216               | 237                  | 305                  |
| HDP 125 3   | 36.7  | 49                             | 43580          | 238            | 155                      | 229                   | —                    | 282                  | —                     | 218               | 239                  | —                    |
| HDP 125 3   | 39.5  | 46                             | 44100          | 224            | 157                      | 231                   | —                    | 284                  | —                     | 220               | 241                  | —                    |
| HDP 125 3   | 45.1  | 40                             | 45710          | 203            | 157                      | 231                   | —                    | 284                  | —                     | 220               | 241                  | —                    |
| HDP 125 3   | 48.5  | 37                             | 46240          | 191            | 160                      | 234                   | —                    | 287                  | —                     | 223               | 244                  | —                    |
| HDP 125 3   | 58.2  | 31                             | 47750          | 164            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 62.6  | 28.8                           | 49240          | 158            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 72.5  | 24.8                           | 46430          | 128            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 78.0  | 23.1                           | 48180          | 124            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 89.0  | 20.2                           | 47230          | 106            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 95.8  | 18.8                           | 48720          | 102            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 114.9 | 15.7                           | 47750          | 83             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 123.6 | 14.6                           | 49240          | 80             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 144.4 | 12.5                           | 40710          | 58             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 155.4 | 11.6                           | 43810          | 58             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 181.2 | 9.9                            | 46060          | 52             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 195.0 | 9.2                            | 48180          | 50             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 222.5 | 8.1                            | 47230          | 43             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 246.2 | 7.3                            | 49240          | 41             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 287.2 | 6.3                            | 47750          | 34             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 319.6 | 5.6                            | 48180          | 31             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 364.6 | 4.9                            | 47230          | 26             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 401.2 | 4.5                            | 48180          | 25             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 457.7 | 3.9                            | 47230          | 21             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 506.5 | 3.6                            | 49240          | 19.9           | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP**

| HDP 125   |       |                                |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |     |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|-----|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |     |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |     |
| HDP 125 2   | 8.9   | 202                            | 38070          | 837            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | *   |
| HDP 125 2   | 9.6   | 187                            | 38660          | 790            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | *   |
| HDP 125 2   | 11.6  | 155                            | 41280          | 697            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 292 |
| HDP 125 2   | 12.5  | 144                            | 41890          | 657            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 311 |
| HDP 125 2   | 14.7  | 123                            | 42740          | 571            | *                             | *                     | *                    | *                    | 244                  | *                 | *                    | *                    | 313 |
| HDP 125 2   | 15.8  | 114                            | 43450          | 540            | *                             | *                     | 230                  | *                    | 256                  | *                 | 231                  | 325                  | 325 |
| HDP 125 2   | 18.0  | 100                            | 44090          | 480            | *                             | 194                   | 231                  | 213                  | 257                  | 204               | 232                  | 326                  | 326 |
| HDP 125 2   | 19.4  | 93                             | 45480          | 460            | *                             | 205                   | 242                  | 224                  | 268                  | 215               | 243                  | 337                  | 337 |
| HDP 125 2   | 23.3  | 77                             | 44580          | 376            | *                             | 206                   | 243                  | 225                  | 269                  | 216               | 244                  | 338                  | 338 |
| HDP 125 2   | 25.0  | 72                             | 45950          | 360            | *                             | 207                   | 244                  | 226                  | 270                  | 217               | 245                  | 339                  | 339 |
| HDP 125 3   | 29.1  | 62                             | 38810          | 267            | *                             | 155                   | 182                  | 172                  | 203                  | 164               | 185                  | 253                  | 253 |
| HDP 125 3   | 31.3  | 58                             | 41360          | 265            | *                             | 158                   | 185                  | 175                  | 206                  | 167               | 188                  | 256                  | 256 |
| HDP 125 3   | 36.7  | 49                             | 43580          | 238            | 106                           | 160                   | 187                  | 177                  | 208                  | 169               | 190                  | 258                  | 258 |
| HDP 125 3   | 39.5  | 46                             | 44100          | 224            | 108                           | 162                   | 189                  | 179                  | 210                  | 171               | 192                  | 260                  | 260 |
| HDP 125 3   | 45.1  | 40                             | 45710          | 203            | 108                           | 162                   | 189                  | 179                  | 210                  | 171               | 192                  | —                    | —   |
| HDP 125 3   | 48.5  | 37                             | 46240          | 191            | 111                           | 165                   | —                    | 182                  | —                    | 174               | 195                  | —                    | —   |
| HDP 125 3   | 58.2  | 31                             | 47750          | 164            | 111                           | 165                   | —                    | 182                  | —                    | 174               | 195                  | —                    | —   |
| HDP 125 3   | 62.6  | 28.8                           | 49240          | 158            | 120                           | 174                   | —                    | 191                  | —                    | 183               | 204                  | —                    | —   |
| HDP 125 3   | 72.5  | 24.8                           | 46430          | 128            | 120                           | 174                   | —                    | 191                  | —                    | 183               | 204                  | —                    | —   |
| HDP 125 3   | 78.0  | 23.1                           | 48180          | 124            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 89.0  | 20.2                           | 47230          | 106            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 95.8  | 18.8                           | 48720          | 102            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 114.9 | 15.7                           | 47750          | 83             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 123.6 | 14.6                           | 49240          | 80             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 144.4 | 12.5                           | 40710          | 58             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 155.4 | 11.6                           | 43810          | 58             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 181.2 | 9.9                            | 46060          | 52             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 195.0 | 9.2                            | 48180          | 50             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 222.5 | 8.1                            | 47230          | 43             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 246.2 | 7.3                            | 49240          | 41             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 287.2 | 6.3                            | 47750          | 34             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 319.6 | 5.6                            | 48180          | 31             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 364.6 | 4.9                            | 47230          | 26             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 401.2 | 4.5                            | 48180          | 25             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 457.7 | 3.9                            | 47230          | 21             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 506.5 | 3.6                            | 49240          | 19.9           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |

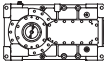
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP 125**

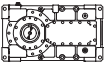
$n_1 = 1500 \text{ min}^{-1}$

|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                       |                   |                      |                      |
|---|-------|--------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|-----------------------|-------------------|----------------------|----------------------|
|   |       |                                |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRAS}$<br>[kW] | $P_{TMCRAS9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDP 125 2   | 8.9   | 168                            | 40210          | 737            | *                        | *                     | *                    | 308                  | 386                   | *                 | *                    | 343                  |
| HDP 125 2   | 9.6   | 156                            | 40830          | 696            | *                        | *                     | 294                  | 333                  | 411                   | *                 | *                    | 368                  |
| HDP 125 2   | 11.6  | 129                            | 42910          | 604            | *                        | 260                   | 304                  | 343                  | 421                   | 256               | 284                  | 378                  |
| HDP 125 2   | 12.5  | 120                            | 44240          | 578            | *                        | 274                   | 318                  | 357                  | 435                   | 270               | 298                  | 392                  |
| HDP 125 2   | 14.7  | 102                            | 43590          | 486            | *                        | 276                   | 320                  | 359                  | 437                   | 272               | 300                  | 394                  |
| HDP 125 2   | 15.8  | 95                             | 44980          | 466            | 193                      | 285                   | 329                  | 368                  | 446                   | 281               | 309                  | 403                  |
| HDP 125 2   | 18.0  | 83                             | 44090          | 400            | 194                      | 286                   | 330                  | 369                  | 447                   | 282               | 310                  | 404                  |
| HDP 125 2   | 19.4  | 77                             | 45480          | 383            | 202                      | 294                   | 338                  | 377                  | 455                   | 290               | 318                  | 412                  |
| HDP 125 2   | 23.3  | 64                             | 44580          | 313            | 203                      | 295                   | 339                  | 378                  | —                     | 291               | 319                  | —                    |
| HDP 125 2   | 25.0  | 60                             | 45950          | 300            | 204                      | 296                   | 340                  | 379                  | —                     | 292               | 320                  | —                    |
| HDP 125 3   | 29.1  | 52                             | 40990          | 235            | 158                      | 222                   | 254                  | 285                  | —                     | 221               | 242                  | —                    |
| HDP 125 3   | 31.3  | 48                             | 43680          | 233            | 160                      | 224                   | —                    | 287                  | —                     | 223               | 244                  | —                    |
| HDP 125 3   | 36.7  | 41                             | 46030          | 209            | 161                      | 225                   | —                    | 288                  | —                     | 224               | 245                  | —                    |
| HDP 125 3   | 39.5  | 38                             | 46580          | 197            | 163                      | 227                   | —                    | 290                  | —                     | 226               | 247                  | —                    |
| HDP 125 3   | 45.1  | 33                             | 47230          | 175            | 163                      | 227                   | —                    | 290                  | —                     | 226               | 247                  | —                    |
| HDP 125 3   | 48.5  | 31                             | 48720          | 168            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 58.2  | 25.8                           | 47750          | 137            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 62.6  | 24.0                           | 49240          | 131            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 72.5  | 20.7                           | 46680          | 107            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 78.0  | 19.2                           | 48180          | 103            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 89.0  | 16.9                           | 47230          | 89             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 95.8  | 15.7                           | 48720          | 85             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 114.9 | 13.1                           | 48230          | 70             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 123.6 | 12.1                           | 49240          | 66             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 144.4 | 10.4                           | 43000          | 51             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 155.4 | 9.7                            | 46280          | 51             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 181.2 | 8.3                            | 46680          | 44             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 195.0 | 7.7                            | 48180          | 42             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 222.5 | 6.7                            | 47230          | 36             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 246.2 | 6.1                            | 49240          | 34             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 287.2 | 5.2                            | 47750          | 28             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 319.6 | 4.7                            | 48180          | 26             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 364.6 | 4.1                            | 47230          | 22             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 401.2 | 3.7                            | 48180          | 20             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 457.7 | 3.3                            | 47230          | 17.6           | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 506.5 | 3.0                            | 49240          | 16.6           | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |

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— Thermal verification not necessary



| HDP 125   |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |     |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|-----|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |     |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |     |
| HDP 125 2   | 8.9   | 168                            | 40210          | 737            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | *   |
| HDP 125 2   | 9.6   | 156                            | 40830          | 696            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 304 |
| HDP 125 2   | 11.6  | 129                            | 42910          | 604            | *                             | *                     | *                    | *                    | 244                  | *                 | *                    | *                    | 313 |
| HDP 125 2   | 12.5  | 120                            | 44240          | 578            | *                             | *                     | *                    | *                    | 259                  | *                 | 234                  | *                    | 328 |
| HDP 125 2   | 14.7  | 102                            | 43590          | 486            | *                             | *                     | 219                  | 216                  | 260                  | 207               | 235                  | *                    | 329 |
| HDP 125 2   | 15.8  | 95                             | 44980          | 466            | *                             | 195                   | 228                  | 225                  | 269                  | 216               | 244                  | *                    | 338 |
| HDP 125 2   | 18.0  | 83                             | 44090          | 400            | *                             | 196                   | 229                  | 226                  | 270                  | 217               | 245                  | *                    | 339 |
| HDP 125 2   | 19.4  | 77                             | 45480          | 383            | *                             | 205                   | 238                  | 235                  | 279                  | 226               | 254                  | *                    | 348 |
| HDP 125 2   | 23.3  | 64                             | 44580          | 313            | 139                           | 206                   | 239                  | 236                  | 280                  | 227               | 255                  | *                    | 349 |
| HDP 125 2   | 25.0  | 60                             | 45950          | 300            | 140                           | 207                   | 240                  | 237                  | 281                  | 228               | 256                  | *                    | 350 |
|   |       |                                |                |                |                               |                       |                      |                      |                      |                   |                      |                      |     |
| HDP 125 3   | 29.1  | 52                             | 40990          | 235            | 108                           | 155                   | 178                  | 179                  | 210                  | 171               | 192                  | *                    | 260 |
| HDP 125 3   | 31.3  | 48                             | 43680          | 233            | 111                           | 158                   | 181                  | 182                  | 213                  | 174               | 195                  | *                    | 263 |
| HDP 125 3   | 36.7  | 41                             | 46030          | 209            | 112                           | 159                   | 182                  | 183                  | 214                  | 175               | 196                  | *                    | 264 |
| HDP 125 3   | 39.5  | 38                             | 46580          | 197            | 114                           | 161                   | 184                  | 185                  | —                    | 177               | 198                  | —                    | —   |
| HDP 125 3   | 45.1  | 33                             | 47230          | 175            | 114                           | 161                   | 184                  | 185                  | —                    | 177               | 198                  | —                    | —   |
| HDP 125 3   | 48.5  | 31                             | 48720          | 168            | 116                           | 163                   | —                    | 187                  | —                    | 179               | 200                  | —                    | —   |
| HDP 125 3   | 58.2  | 25.8                           | 47750          | 137            | 116                           | 163                   | —                    | 187                  | —                    | 179               | 200                  | —                    | —   |
| HDP 125 3   | 62.6  | 24.0                           | 49240          | 131            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 72.5  | 20.7                           | 46680          | 107            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 78.0  | 19.2                           | 48180          | 103            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 89.0  | 16.9                           | 47230          | 89             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 95.8  | 15.7                           | 48720          | 85             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 114.9 | 13.1                           | 48230          | 70             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 123.6 | 12.1                           | 49240          | 66             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
|   |       |                                |                |                |                               |                       |                      |                      |                      |                   |                      |                      |     |
| HDP 125 4   | 144.4 | 10.4                           | 43000          | 51             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 155.4 | 9.7                            | 46280          | 51             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 181.2 | 8.3                            | 46680          | 44             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 195.0 | 7.7                            | 48180          | 42             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 222.5 | 6.7                            | 47230          | 36             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 246.2 | 6.1                            | 49240          | 34             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 287.2 | 5.2                            | 47750          | 28             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 319.6 | 4.7                            | 48180          | 26             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 364.6 | 4.1                            | 47230          | 22             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 401.2 | 3.7                            | 48180          | 20             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 457.7 | 3.3                            | 47230          | 17.6           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 506.5 | 3.0                            | 49240          | 16.6           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |

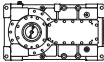
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDP 125

$n_1 = 1200 \text{ min}^{-1}$

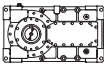
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                       |                   |                      |                      |
|---|-------|--------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|-----------------------|-------------------|----------------------|----------------------|
|   |       |                                |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRAS}$<br>[kW] | $P_{TMCRAS9}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDP 125 2   | 8.9   | 135                            | 42100          | 617            | *                        | *                     | 280                  | 332                  | 410                   | *                 | 273                  | 367                  |
| HDP 125 2   | 9.6   | 125                            | 43500          | 593            | *                        | 259                   | 299                  | 351                  | 429                   | 264               | 292                  | 386                  |
| HDP 125 2   | 11.6  | 103                            | 42910          | 483            | *                        | 266                   | 306                  | 358                  | 436                   | 271               | 299                  | 393                  |
| HDP 125 2   | 12.5  | 96                             | 44300          | 463            | 195                      | 278                   | 318                  | 370                  | 448                   | 283               | 311                  | 405                  |
| HDP 125 2   | 14.7  | 82                             | 43590          | 388            | 196                      | 279                   | 319                  | 371                  | 449                   | 284               | 312                  | 406                  |
| HDP 125 2   | 15.8  | 76                             | 44980          | 372            | 203                      | 286                   | 326                  | 378                  | —                     | 291               | 319                  | 413                  |
| HDP 125 2   | 18.0  | 67                             | 44090          | 320            | 204                      | 287                   | 327                  | 379                  | —                     | 292               | 320                  | 414                  |
| HDP 125 2   | 19.4  | 62                             | 45480          | 307            | 210                      | 293                   | 333                  | 385                  | —                     | 298               | 326                  | —                    |
| HDP 125 2   | 23.3  | 52                             | 44580          | 251            | 211                      | 294                   | —                    | 386                  | —                     | 299               | 327                  | —                    |
| HDP 125 2   | 25.0  | 48                             | 45950          | 240            | 212                      | 295                   | —                    | 387                  | —                     | 300               | 328                  | —                    |
| HDP 125 3   | 29.1  | 41                             | 43830          | 201            | 163                      | 221                   | —                    | 290                  | —                     | 226               | 247                  | —                    |
| HDP 125 3   | 31.3  | 38                             | 46710          | 199            | 165                      | 223                   | —                    | 292                  | —                     | 228               | 249                  | —                    |
| HDP 125 3   | 36.7  | 33                             | 46680          | 170            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 39.5  | 30                             | 48180          | 163            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 45.1  | 26.6                           | 47230          | 140            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 48.5  | 24.7                           | 48720          | 134            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 58.2  | 20.6                           | 47750          | 110            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 62.6  | 19.2                           | 49240          | 105            | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 72.5  | 16.6                           | 46680          | 86             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 78.0  | 15.4                           | 48180          | 82             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 89.0  | 13.5                           | 47230          | 71             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 95.8  | 12.5                           | 48720          | 68             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 114.9 | 10.4                           | 48230          | 56             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 3   | 123.6 | 9.7                            | 49240          | 53             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 144.4 | 8.3                            | 45980          | 43             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 155.4 | 7.7                            | 48180          | 42             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 181.2 | 6.6                            | 46680          | 35             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 195.0 | 6.2                            | 48180          | 34             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 222.5 | 5.4                            | 47230          | 29             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 246.2 | 4.9                            | 49240          | 27             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 287.2 | 4.2                            | 47750          | 23             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 319.6 | 3.8                            | 48180          | 21             | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 364.6 | 3.3                            | 47230          | 17.6           | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 401.2 | 3.0                            | 48180          | 16.4           | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 457.7 | 2.6                            | 47230          | 14.1           | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |
| HDP 125 4   | 506.5 | 2.4                            | 49240          | 13.2           | —                        | —                     | —                    | —                    | —                     | —                 | —                    | —                    |

\* 

— Thermal verification not necessary



**HDP**

| HDP 125   |       |                                |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |     |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|-----|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |     |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |     |
| HDP 125 2   | 8.9   | 135                            | 42100          | 617            | *                             | *                     | *                    | *                    | *                    | *                 | *                    | *                    | 302 |
| HDP 125 2   | 9.6   | 125                            | 43500          | 593            | *                             | *                     | *                    | *                    | 252                  | *                 | *                    | *                    | 321 |
| HDP 125 2   | 11.6  | 103                            | 42910          | 483            | *                             | *                     | 209                  | 216                  | 260                  | 207               | 235                  | 239                  | 329 |
| HDP 125 2   | 12.5  | 96                             | 44300          | 463            | *                             | 191                   | 220                  | 227                  | 271                  | 218               | 246                  | 246                  | 340 |
| HDP 125 2   | 14.7  | 82                             | 43590          | 388            | *                             | 193                   | 222                  | 229                  | 273                  | 220               | 248                  | 248                  | 342 |
| HDP 125 2   | 15.8  | 76                             | 44980          | 372            | *                             | 200                   | 229                  | 236                  | 280                  | 227               | 255                  | 255                  | 349 |
| HDP 125 2   | 18.0  | 67                             | 44090          | 320            | 139                           | 200                   | 229                  | 236                  | 280                  | 227               | 255                  | 255                  | 349 |
| HDP 125 2   | 19.4  | 62                             | 45480          | 307            | 146                           | 207                   | 236                  | 243                  | 287                  | 234               | 262                  | 262                  | 356 |
| HDP 125 2   | 23.3  | 52                             | 44580          | 251            | 147                           | 208                   | 237                  | 244                  | 288                  | 235               | 263                  | 263                  | —   |
| HDP 125 2   | 25.0  | 48                             | 45950          | 240            | 147                           | 208                   | 237                  | 244                  | —                    | 235               | 263                  | 263                  | —   |
| HDP 125 3   | 29.1  | 41                             | 43830          | 201            | 114                           | 156                   | 177                  | 185                  | 216                  | 177               | 198                  | 198                  | 266 |
| HDP 125 3   | 31.3  | 38                             | 46710          | 199            | 116                           | 158                   | 179                  | 187                  | —                    | 179               | 200                  | 200                  | —   |
| HDP 125 3   | 36.7  | 33                             | 46680          | 170            | 116                           | 158                   | 179                  | 187                  | —                    | 179               | 200                  | 200                  | —   |
| HDP 125 3   | 39.5  | 30                             | 48180          | 163            | 118                           | 160                   | —                    | 189                  | —                    | 181               | 202                  | 202                  | —   |
| HDP 125 3   | 45.1  | 26.6                           | 47230          | 140            | 118                           | 160                   | —                    | 189                  | —                    | 181               | 202                  | 202                  | —   |
| HDP 125 3   | 48.5  | 24.7                           | 48720          | 134            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 58.2  | 20.6                           | 47750          | 110            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 62.6  | 19.2                           | 49240          | 105            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 72.5  | 16.6                           | 46680          | 86             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 78.0  | 15.4                           | 48180          | 82             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 89.0  | 13.5                           | 47230          | 71             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 95.8  | 12.5                           | 48720          | 68             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 114.9 | 10.4                           | 48230          | 56             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 3   | 123.6 | 9.7                            | 49240          | 53             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 144.4 | 8.3                            | 45980          | 43             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 155.4 | 7.7                            | 48180          | 42             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 181.2 | 6.6                            | 46680          | 35             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 195.0 | 6.2                            | 48180          | 34             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 222.5 | 5.4                            | 47230          | 29             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 246.2 | 4.9                            | 49240          | 27             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 287.2 | 4.2                            | 47750          | 23             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 319.6 | 3.8                            | 48180          | 21             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 364.6 | 3.3                            | 47230          | 17.6           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 401.2 | 3.0                            | 48180          | 16.4           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 457.7 | 2.6                            | 47230          | 14.1           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |
| HDP 125 4   | 506.5 | 2.4                            | 49240          | 13.2           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    | —   |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



HDP 125

$n_1 = 1000 \text{ min}^{-1}$

|           | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                              |                             |                             |                             |                          |                             |                             |
|-----------|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|           |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDP 125 2 | 8.9   | 112                                    | 42100                   | 514                     | *                      | 237                          | 269                         | 348                         | 426                         | 261                      | 289                         | 383                         |
| HDP 125 2 | 9.6   | 104                                    | 43500                   | 494                     | *                      | 252                          | 284                         | 363                         | 441                         | 276                      | 304                         | 398                         |
| HDP 125 2 | 11.6  | 86                                     | 42910                   | 402                     | 194                    | 258                          | 290                         | 369                         | 447                         | 282                      | 310                         | 404                         |
| HDP 125 2 | 12.5  | 80                                     | 44300                   | 386                     | 203                    | 267                          | 299                         | 378                         | 456                         | 291                      | 319                         | 413                         |
| HDP 125 2 | 14.7  | 68                                     | 43590                   | 324                     | 205                    | 269                          | 301                         | 380                         | —                           | 293                      | 321                         | 415                         |
| HDP 125 2 | 15.8  | 63                                     | 44980                   | 310                     | 210                    | 274                          | 306                         | 385                         | —                           | 298                      | 326                         | —                           |
| HDP 125 2 | 18.0  | 55                                     | 44530                   | 269                     | 211                    | 275                          | —                           | 386                         | —                           | 299                      | 327                         | —                           |
| HDP 125 2 | 19.4  | 52                                     | 45480                   | 256                     | 216                    | 280                          | —                           | 391                         | —                           | 304                      | 332                         | —                           |
| HDP 125 2 | 23.3  | 43                                     | 44580                   | 209                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 2 | 25.0  | 40                                     | 45950                   | 200                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 29.1  | 34                                     | 45940                   | 176                     | 167                    | 212                          | —                           | 294                         | —                           | 230                      | 251                         | —                           |
| HDP 125 3 | 31.3  | 32                                     | 47450                   | 169                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 36.7  | 27.2                                   | 47150                   | 143                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 39.5  | 25.3                                   | 48180                   | 136                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 45.1  | 22.2                                   | 47230                   | 117                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 48.5  | 20.6                                   | 48720                   | 112                     | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 58.2  | 17.2                                   | 48230                   | 92                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 62.6  | 16.0                                   | 49240                   | 88                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 72.5  | 13.8                                   | 47150                   | 72                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 78.0  | 12.8                                   | 48180                   | 69                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 89.0  | 11.2                                   | 47230                   | 59                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 95.8  | 10.4                                   | 48720                   | 57                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 114.9 | 8.7                                    | 48230                   | 47                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 3 | 123.6 | 8.1                                    | 49240                   | 44                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 144.4 | 6.9                                    | 46680                   | 37                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 155.4 | 6.4                                    | 48180                   | 35                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 181.2 | 5.5                                    | 46680                   | 29                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 195.0 | 5.1                                    | 48180                   | 28                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 222.5 | 4.5                                    | 47230                   | 24                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 246.2 | 4.1                                    | 49240                   | 23                      | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 287.2 | 3.5                                    | 47750                   | 18.9                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 319.6 | 3.1                                    | 48180                   | 17.1                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 364.6 | 2.7                                    | 47230                   | 14.7                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 401.2 | 2.5                                    | 48180                   | 13.6                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 457.7 | 2.2                                    | 47230                   | 11.7                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |
| HDP 125 4 | 506.5 | 2.0                                    | 49240                   | 11.0                    | —                      | —                            | —                           | —                           | —                           | —                        | —                           | —                           |

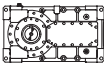
\* BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary





**HDP**

| HDP 125   |       |                                |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                      |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                   |                      |                      |  |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDP 125 2   | 8.9   | 112                            | 42100          | 514            | *                             | *                     | *                    | *                    | 249                  | *                 | 224                  | 318                  |  |
| HDP 125 2   | 9.6   | 104                            | 43500          | 494            | *                             | *                     | *                    | 221                  | 265                  | 212               | 240                  | 334                  |  |
| HDP 125 2   | 11.6  | 86                             | 42910          | 402            | *                             | 177                   | 200                  | 227                  | 271                  | 218               | 246                  | 340                  |  |
| HDP 125 2   | 12.5  | 80                             | 44300          | 386            | *                             | 186                   | 209                  | 236                  | 280                  | 227               | 255                  | 349                  |  |
| HDP 125 2   | 14.7  | 68                             | 43590          | 324            | 140                           | 187                   | 210                  | 237                  | 281                  | 228               | 256                  | 350                  |  |
| HDP 125 2   | 15.8  | 63                             | 44980          | 310            | 146                           | 193                   | 216                  | 243                  | 287                  | 234               | 262                  | 356                  |  |
| HDP 125 2   | 18.0  | 55                             | 44530          | 269            | 146                           | 193                   | 216                  | 243                  | 287                  | 234               | 262                  | 356                  |  |
| HDP 125 2   | 19.4  | 52                             | 45480          | 256            | 152                           | 199                   | 222                  | 249                  | 293                  | 240               | 268                  | —                    |  |
| HDP 125 2   | 23.3  | 43                             | 44580          | 209            | 152                           | 199                   | 222                  | 249                  | —                    | 240               | 268                  | —                    |  |
| HDP 125 2   | 25.0  | 40                             | 45950          | 200            | 153                           | 200                   | 223                  | 250                  | —                    | 241               | 269                  | —                    |  |
| HDP 125 3   | 29.1  | 34                             | 45940          | 176            | 118                           | 151                   | 167                  | 189                  | —                    | 181               | 202                  | —                    |  |
| HDP 125 3   | 31.3  | 32                             | 47450          | 169            | 119                           | 152                   | —                    | 190                  | —                    | 182               | 203                  | —                    |  |
| HDP 125 3   | 36.7  | 27.2                           | 47150          | 143            | 120                           | 153                   | —                    | 191                  | —                    | 183               | 204                  | —                    |  |
| HDP 125 3   | 39.5  | 25.3                           | 48180          | 136            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 3   | 45.1  | 22.2                           | 47230          | 117            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 3   | 48.5  | 20.6                           | 48720          | 112            | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 3   | 58.2  | 17.2                           | 48230          | 92             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 3   | 62.6  | 16.0                           | 49240          | 88             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 3   | 72.5  | 13.8                           | 47150          | 72             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 3   | 78.0  | 12.8                           | 48180          | 69             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 3   | 89.0  | 11.2                           | 47230          | 59             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 3   | 95.8  | 10.4                           | 48720          | 57             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 3   | 114.9 | 8.7                            | 48230          | 47             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 3   | 123.6 | 8.1                            | 49240          | 44             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 144.4 | 6.9                            | 46680          | 37             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 155.4 | 6.4                            | 48180          | 35             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 181.2 | 5.5                            | 46680          | 29             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 195.0 | 5.1                            | 48180          | 28             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 222.5 | 4.5                            | 47230          | 24             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 246.2 | 4.1                            | 49240          | 23             | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 287.2 | 3.5                            | 47750          | 18.9           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 319.6 | 3.1                            | 48180          | 17.1           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 364.6 | 2.7                            | 47230          | 14.7           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 401.2 | 2.5                            | 48180          | 13.6           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 457.7 | 2.2                            | 47230          | 11.7           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |
| HDP 125 4   | 506.5 | 2.0                            | 49240          | 11.0           | —                             | —                     | —                    | —                    | —                    | —                 | —                    | —                    |  |

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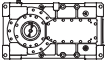
— Thermal verification not necessary



HDP

HDP 130

$n_1 = 1800 \text{ min}^{-1}$

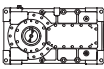
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|---|-------|-------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-------------------|----------------------|----------------------|-----------------------|-----------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDP 130 2   | 7.3   | 248                           | 45820          | 1238           | *                        | *                     | *                    | *                    | *                    | 622                   | ⊖                     | *                 | *                    | *                    | 496                   | ⊖                     |
| HDP 130 2   | 7.9   | 227                           | 48550          | 1202           | *                        | *                     | *                    | *                    | *                    | 628                   |                       | *                 | *                    | *                    | 502                   |                       |
| HDP 130 2   | 8.6   | 209                           | 48410          | 1103           | *                        | *                     | *                    | *                    | *                    | 655                   |                       | *                 | *                    | *                    | 529                   |                       |
| HDP 130 2   | 9.4   | 191                           | 51170          | 1068           | *                        | *                     | *                    | *                    | *                    | 660                   |                       | *                 | *                    | *                    | 534                   |                       |
| HDP 130 2   | 11.3  | 159                           | 53590          | 930            | *                        | *                     | 450                  | 373                  | 451                  | 694                   |                       | *                 | *                    | 408                  | 568                   |                       |
| HDP 130 2   | 12.3  | 146                           | 54820          | 872            | *                        | 373                   | 454                  | 377                  | 455                  | 698                   |                       | *                 | *                    | 412                  | 572                   |                       |
| HDP 130 2   | 14.1  | 127                           | 54730          | 760            | *                        | 394                   | 475                  | 398                  | 476                  | 719                   |                       | 330               | 339                  | 433                  | 593                   |                       |
| HDP 130 2   | 15.4  | 117                           | 56150          | 714            | *                        | 396                   | 477                  | 400                  | 478                  | 721                   |                       | 332               | 341                  | 435                  | 595                   |                       |
| HDP 130 2   | 17.4  | 103                           | 58690          | 661            | *                        | 411                   | 492                  | 415                  | 493                  | 736                   |                       | 347               | 356                  | 450                  | 610                   |                       |
| HDP 130 2   | 19.0  | 95                            | 62410          | 644            | *                        | 413                   | 494                  | 417                  | 495                  | 738                   |                       | 349               | 358                  | 452                  | 612                   |                       |
| HDP 130 2   | 21.7  | 83                            | 64410          | 584            | 245                      | 416                   | 497                  | 420                  | 498                  | 741                   |                       | 352               | 361                  | 455                  | 615                   |                       |
| HDP 130 3   | 21.8  | 83                            | 62200          | 572            | *                        | 298                   | 356                  | 305                  | 362                  | 538                   | 664                   | 280               | 262                  | 330                  | 446                   | 668                   |
| HDP 130 3   | 23.8  | 76                            | 62590          | 527            | *                        | 299                   | 357                  | 306                  | 363                  | 539                   | —                     | 281               | 263                  | 331                  | 447                   | 669                   |
| HDP 130 3   | 28.6  | 63                            | 65230          | 457            | 186                      | 306                   | 364                  | 313                  | 370                  | 546                   | —                     | 288               | 270                  | 338                  | 454                   | 676                   |
| HDP 130 3   | 31.2  | 58                            | 62590          | 401            | 187                      | 307                   | 365                  | 314                  | 371                  | 547                   | —                     | 289               | 271                  | 339                  | 455                   | —                     |
| HDP 130 3   | 35.7  | 50                            | 62040          | 348            | 192                      | 312                   | 370                  | 319                  | 376                  | —                     | —                     | 294               | 276                  | 344                  | 460                   | —                     |
| HDP 130 3   | 39.0  | 46                            | 62590          | 321            | 192                      | 312                   | 370                  | 319                  | 376                  | —                     | —                     | 294               | 276                  | 344                  | —                     | —                     |
| HDP 130 3   | 44.1  | 41                            | 64510          | 293            | 196                      | 316                   | —                    | 323                  | —                    | —                     | —                     | 298               | 280                  | 348                  | —                     | —                     |
| HDP 130 3   | 48.1  | 37                            | 62590          | 260            | 196                      | 316                   | —                    | 323                  | —                    | —                     | —                     | 298               | 280                  | —                    | —                     | —                     |
| HDP 130 3   | 56.5  | 32                            | 65020          | 230            | 213                      | 333                   | —                    | 340                  | —                    | —                     | —                     | 315               | 297                  | —                    | —                     | —                     |
| HDP 130 3   | 61.7  | 29.2                          | 62270          | 202            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 70.7  | 25.5                          | 64730          | 183            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 77.1  | 23.3                          | 62000          | 161            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 87.2  | 20.7                          | 64510          | 148            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 95.1  | 18.9                          | 62590          | 132            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 108.3 | 16.6                          | 58960          | 109            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 111.2 | 16.2                          | 57640          | 106            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 121.4 | 14.8                          | 62590          | 105            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 139.0 | 13.0                          | 65230          | 96             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 151.7 | 11.9                          | 62590          | 84             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 176.7 | 10.2                          | 64840          | 75             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 192.9 | 9.3                           | 62590          | 66             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 217.9 | 8.3                           | 64510          | 61             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 237.9 | 7.6                           | 62590          | 54             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 274.5 | 6.6                           | 65230          | 49             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 299.6 | 6.0                           | 62590          | 43             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 348.9 | 5.2                           | 65230          | 38             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 380.9 | 4.7                           | 62590          | 34             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 469.8 | 3.8                           | 62590          | 27             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 534.5 | 3.4                           | 58960          | 23             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



HDP

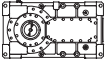
| HDP 130   |       |                               |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                    |                      |                      |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|--------------------|----------------------|----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                    |                      |                      |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TTSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDP 130 2   | 7.3   | 248                           | 45820          | 1238           | *                             | *                     | *                    | *                    | *                    | *                     |                       | *                  | *                    | *                    | *                     |                       |
| HDP 130 2   | 7.9   | 227                           | 48550          | 1202           | *                             | *                     | *                    | *                    | *                    | *                     |                       | *                  | *                    | *                    | *                     |                       |
| HDP 130 2   | 8.6   | 209                           | 48410          | 1103           | *                             | *                     | *                    | *                    | *                    | *                     |                       | *                  | *                    | *                    | 446                   |                       |
| HDP 130 2   | 9.4   | 191                           | 51170          | 1068           | *                             | *                     | *                    | *                    | *                    | *                     |                       | *                  | *                    | *                    | 451                   |                       |
| HDP 130 2   | 11.3  | 159                           | 53590          | 930            | *                             | *                     | *                    | *                    | *                    | 392                   |                       | *                  | *                    | *                    | 486                   |                       |
| HDP 130 2   | 12.3  | 146                           | 54820          | 872            | *                             | *                     | *                    | *                    | *                    | 396                   | ⊖                     | *                  | *                    | *                    | 490                   | ⊖                     |
| HDP 130 2   | 14.1  | 127                           | 54730          | 760            | *                             | *                     | 325                  | *                    | *                    | 416                   |                       | *                  | *                    | 350                  | 510                   |                       |
| HDP 130 2   | 15.4  | 117                           | 56150          | 714            | *                             | *                     | 328                  | *                    | *                    | 419                   |                       | *                  | *                    | 353                  | 513                   |                       |
| HDP 130 2   | 17.4  | 103                           | 58690          | 661            | *                             | 283                   | 343                  | *                    | 299                  | 434                   |                       | 265                | 274                  | 368                  | 528                   |                       |
| HDP 130 2   | 19.0  | 95                            | 62410          | 644            | *                             | 285                   | 345                  | *                    | 301                  | 436                   |                       | 267                | 276                  | 370                  | 530                   |                       |
| HDP 130 2   | 21.7  | 83                            | 64410          | 584            | *                             | 288                   | 348                  | 260                  | 304                  | 439                   |                       | 270                | 279                  | 373                  | 533                   |                       |
| HDP 130 3   | 21.8  | 83                            | 62200          | 572            | *                             | *                     | 244                  | *                    | *                    | 314                   | 384                   | *                  | *                    | 266                  | 382                   | 604                   |
| HDP 130 3   | 23.8  | 76                            | 62590          | 527            | *                             | *                     | 245                  | *                    | 217                  | 315                   | 385                   | 217                | *                    | 267                  | 383                   | 605                   |
| HDP 130 3   | 28.6  | 63                            | 65230          | 457            | *                             | 210                   | 252                  | 193                  | 224                  | 322                   | 392                   | 224                | 206                  | 274                  | 390                   | 612                   |
| HDP 130 3   | 31.2  | 58                            | 62590          | 401            | *                             | 211                   | 253                  | 194                  | 225                  | 323                   | 393                   | 225                | 207                  | 275                  | 391                   | 613                   |
| HDP 130 3   | 35.7  | 50                            | 62040          | 348            | *                             | 215                   | 257                  | 198                  | 229                  | 327                   | 397                   | 229                | 211                  | 279                  | 395                   | —                     |
| HDP 130 3   | 39.0  | 46                            | 62590          | 321            | *                             | 216                   | 258                  | 199                  | 230                  | 328                   | —                     | 230                | 212                  | 280                  | 396                   | —                     |
| HDP 130 3   | 44.1  | 41                            | 64510          | 293            | 131                           | 219                   | 261                  | 202                  | 233                  | 331                   | —                     | 233                | 215                  | 283                  | 399                   | —                     |
| HDP 130 3   | 48.1  | 37                            | 62590          | 260            | 132                           | 220                   | 262                  | 203                  | 234                  | 332                   | —                     | 234                | 216                  | 284                  | —                     | —                     |
| HDP 130 3   | 56.5  | 32                            | 65020          | 230            | 149                           | 237                   | —                    | 220                  | 251                  | —                     | —                     | 251                | 233                  | —                    | —                     | —                     |
| HDP 130 3   | 61.7  | 29.2                          | 62270          | 202            | 149                           | 237                   | —                    | 220                  | —                    | —                     | —                     | 251                | 233                  | —                    | —                     | —                     |
| HDP 130 3   | 70.7  | 25.5                          | 64730          | 183            | 152                           | 240                   | —                    | 223                  | —                    | —                     | —                     | 254                | 236                  | —                    | —                     | —                     |
| HDP 130 3   | 77.1  | 23.3                          | 62000          | 161            | 152                           | 240                   | —                    | 223                  | —                    | —                     | —                     | 254                | 236                  | —                    | —                     | —                     |
| HDP 130 3   | 87.2  | 20.7                          | 64510          | 148            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 3   | 95.1  | 18.9                          | 62590          | 132            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 3   | 108.3 | 16.6                          | 58960          | 109            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 111.2 | 16.2                          | 57640          | 106            | 93                            | 160                   | —                    | 148                  | —                    | —                     | —                     | 171                | 159                  | —                    | —                     | —                     |
| HDP 130 4   | 121.4 | 14.8                          | 62590          | 105            | 93                            | 160                   | —                    | 148                  | —                    | —                     | —                     | 171                | 159                  | —                    | —                     | —                     |
| HDP 130 4   | 139.0 | 13.0                          | 65230          | 96             | 94                            | 161                   | —                    | 149                  | —                    | —                     | —                     | 172                | 160                  | —                    | —                     | —                     |
| HDP 130 4   | 151.7 | 11.9                          | 62590          | 84             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 176.7 | 10.2                          | 64840          | 75             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 192.9 | 9.3                           | 62590          | 66             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 217.9 | 8.3                           | 64510          | 61             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 237.9 | 7.6                           | 62590          | 54             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 274.5 | 6.6                           | 65230          | 49             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 299.6 | 6.0                           | 62590          | 43             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 348.9 | 5.2                           | 65230          | 38             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 380.9 | 4.7                           | 62590          | 34             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 469.8 | 3.8                           | 62590          | 27             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 130 4   | 534.5 | 3.4                           | 58960          | 23             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



HDP

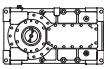
| HDP 130   |       |                               |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-------------------|----------------------|----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDP 130 2   | 7.3   | 207                           | 48400          | 1090           | *                             | *                     | *                    | *                    | *                    | 663                   |                       | *                 | *                    | *                    | 537                   |                       |
| HDP 130 2   | 7.9   | 189                           | 51280          | 1058           | *                             | *                     | *                    | *                    | 425                  | 668                   |                       | *                 | *                    | *                    | 542                   |                       |
| HDP 130 2   | 8.6   | 174                           | 51140          | 971            | *                             | *                     | 411                  | *                    | 445                  | 688                   |                       | *                 | *                    | 402                  | 562                   |                       |
| HDP 130 2   | 9.4   | 160                           | 54050          | 940            | *                             | *                     | 415                  | *                    | 449                  | 692                   |                       | *                 | *                    | 406                  | 566                   |                       |
| HDP 130 2   | 11.3  | 133                           | 56600          | 819            | *                             | 372                   | 442                  | 398                  | 476                  | 719                   |                       | 330               | 339                  | 433                  | 593                   |                       |
| HDP 130 2   | 12.3  | 122                           | 57900          | 767            | *                             | 375                   | 445                  | 401                  | 479                  | 722                   | ⊖                     | 333               | 342                  | 436                  | 596                   | ⊖                     |
| HDP 130 2   | 14.1  | 106                           | 57810          | 669            | *                             | 391                   | 461                  | 417                  | 495                  | 738                   |                       | 349               | 358                  | 452                  | 612                   |                       |
| HDP 130 2   | 15.4  | 97                            | 59300          | 629            | *                             | 393                   | 463                  | 419                  | 497                  | 740                   |                       | 351               | 360                  | 454                  | 614                   |                       |
| HDP 130 2   | 17.4  | 86                            | 61990          | 582            | 255                           | 404                   | 474                  | 430                  | 508                  | 751                   |                       | 362               | 371                  | 465                  | 625                   |                       |
| HDP 130 2   | 19.0  | 79                            | 63860          | 549            | 257                           | 406                   | 476                  | 432                  | 510                  | 753                   |                       | 364               | 373                  | 467                  | 627                   |                       |
| HDP 130 2   | 21.7  | 69                            | 64070          | 484            | 259                           | 408                   | 478                  | 434                  | 512                  | —                     |                       | 366               | 375                  | 469                  | 629                   |                       |
| HDP 130 3   | 21.8  | 69                            | 65950          | 505            | *                             | 296                   | 347                  | 319                  | 376                  | 552                   | —                     | 294               | 276                  | 344                  | 460                   | 682                   |
| HDP 130 3   | 23.8  | 63                            | 63450          | 445            | 193                           | 297                   | 348                  | 320                  | 377                  | 553                   | —                     | 295               | 277                  | 345                  | 461                   | —                     |
| HDP 130 3   | 28.6  | 52                            | 65790          | 384            | 198                           | 302                   | 353                  | 325                  | 382                  | 558                   | —                     | 300               | 282                  | 350                  | 466                   | —                     |
| HDP 130 3   | 31.2  | 48                            | 62990          | 337            | 199                           | 303                   | 354                  | 326                  | 383                  | —                     | —                     | 301               | 283                  | 351                  | —                     | —                     |
| HDP 130 3   | 35.7  | 42                            | 65430          | 305            | 202                           | 306                   | —                    | 329                  | —                    | —                     | —                     | 304               | 286                  | 354                  | —                     | —                     |
| HDP 130 3   | 39.0  | 38                            | 62650          | 268            | 203                           | 307                   | —                    | 330                  | —                    | —                     | —                     | 305               | 287                  | —                    | —                     | —                     |
| HDP 130 3   | 44.1  | 34                            | 65120          | 246            | 205                           | 309                   | —                    | 332                  | —                    | —                     | —                     | 307               | 289                  | —                    | —                     | —                     |
| HDP 130 3   | 48.1  | 31                            | 62360          | 216            | 206                           | 310                   | —                    | 333                  | —                    | —                     | —                     | 308               | 290                  | —                    | —                     | —                     |
| HDP 130 3   | 56.5  | 26.5                          | 64780          | 191            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 61.7  | 24.3                          | 62050          | 168            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 70.7  | 21.2                          | 65650          | 155            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 77.1  | 19.4                          | 62890          | 136            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 87.2  | 17.2                          | 67750          | 130            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 95.1  | 15.8                          | 64910          | 114            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 108.3 | 13.9                          | 63140          | 97             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 111.2 | 13.5                          | 61600          | 94             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 121.4 | 12.4                          | 66770          | 94             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 139.0 | 10.8                          | 69570          | 85             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 151.7 | 9.9                           | 66770          | 75             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 176.7 | 8.5                           | 69350          | 67             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 192.9 | 7.8                           | 66770          | 59             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 217.9 | 6.9                           | 69570          | 54             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 237.9 | 6.3                           | 66770          | 48             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 274.5 | 5.5                           | 69570          | 43             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 299.6 | 5.0                           | 66770          | 38             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 348.9 | 4.3                           | 69570          | 34             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 380.9 | 3.9                           | 66770          | 30             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 469.8 | 3.2                           | 66770          | 24             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 534.5 | 2.8                           | 63140          | 20             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP**

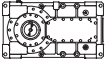
| HDP 130   |       |  |                         |                         | $n_1 = 1500 \text{ min}^{-1}$ |                              |                             |                             |                             |                              |                              |                          |                             |                             |                              |                              |
|---|-------|--|-------------------------|-------------------------|-------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|--------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C         |                              |                             |                             |                             |                              |                              |                          |                             |                             |                              |                              |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]        | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] |
| HDP 130 2   | 7.3   | 207                                    | 48400                   | 1090                    | *                             | *                            | *                           | *                           | *                           | *                            |                              | *                        | *                           | *                           | 455                          |                              |
| HDP 130 2   | 7.9   | 189                                    | 51280                   | 1058                    | *                             | *                            | *                           | *                           | *                           | *                            |                              | *                        | *                           | *                           | 460                          |                              |
| HDP 130 2   | 8.6   | 174                                    | 51140                   | 971                     | *                             | *                            | *                           | *                           | *                           | *                            |                              | *                        | *                           | *                           | 480                          |                              |
| HDP 130 2   | 9.4   | 160                                    | 54050                   | 940                     | *                             | *                            | *                           | *                           | *                           | 390                          |                              | *                        | *                           | *                           | 484                          |                              |
| HDP 130 2   | 11.3  | 133                                    | 56600                   | 819                     | *                             | *                            | *                           | *                           | *                           | 417                          |                              | *                        | *                           | 351                         | 511                          |                              |
| HDP 130 2   | 12.3  | 122                                    | 57900                   | 767                     | *                             | *                            | *                           | *                           | *                           | 419                          | ⊖                            | *                        | *                           | 353                         | 513                          | ⊖                            |
| HDP 130 2   | 14.1  | 106                                    | 57810                   | 669                     | *                             | 268                          | 320                         | *                           | 300                         | 435                          |                              | *                        | 275                         | 369                         | 529                          |                              |
| HDP 130 2   | 15.4  | 97                                     | 59300                   | 629                     | *                             | 270                          | 322                         | 258                         | 302                         | 437                          |                              | 268                      | 277                         | 371                         | 531                          |                              |
| HDP 130 2   | 17.4  | 86                                     | 61990                   | 582                     | *                             | 282                          | 334                         | 270                         | 314                         | 449                          |                              | 280                      | 289                         | 383                         | 543                          |                              |
| HDP 130 2   | 19.0  | 79                                     | 63860                   | 549                     | *                             | 283                          | 335                         | 271                         | 315                         | 450                          |                              | 281                      | 290                         | 384                         | 544                          |                              |
| HDP 130 2   | 21.7  | 69                                     | 64070                   | 484                     | *                             | 286                          | 338                         | 274                         | 318                         | 453                          |                              | 284                      | 293                         | 387                         | 547                          |                              |
| HDP 130 3   | 21.8  | 69                                     | 65950                   | 505                     | *                             | 203                          | 240                         | *                           | 229                         | 327                          | 397                          | 229                      | 211                         | 279                         | 395                          | 617                          |
| HDP 130 3   | 23.8  | 63                                     | 63450                   | 445                     | *                             | 204                          | 241                         | 199                         | 230                         | 328                          | 398                          | 230                      | 212                         | 280                         | 396                          | 618                          |
| HDP 130 3   | 28.6  | 52                                     | 65790                   | 384                     | *                             | 210                          | 247                         | 205                         | 236                         | 334                          | 404                          | 236                      | 218                         | 286                         | 402                          | —                            |
| HDP 130 3   | 31.2  | 48                                     | 62990                   | 337                     | *                             | 211                          | 248                         | 206                         | 237                         | 335                          | 405                          | 237                      | 219                         | 287                         | 403                          | —                            |
| HDP 130 3   | 35.7  | 42                                     | 65430                   | 305                     | 138                           | 214                          | 251                         | 209                         | 240                         | 338                          | —                            | 240                      | 222                         | 290                         | 406                          | —                            |
| HDP 130 3   | 39.0  | 38                                     | 62650                   | 268                     | 139                           | 215                          | 252                         | 210                         | 241                         | 339                          | —                            | 241                      | 223                         | 291                         | —                            | —                            |
| HDP 130 3   | 44.1  | 34                                     | 65120                   | 246                     | 141                           | 217                          | 254                         | 212                         | 243                         | 341                          | —                            | 243                      | 225                         | 293                         | —                            | —                            |
| HDP 130 3   | 48.1  | 31                                     | 62360                   | 216                     | 142                           | 218                          | —                           | 213                         | 244                         | —                            | —                            | 244                      | 226                         | —                           | —                            | —                            |
| HDP 130 3   | 56.5  | 26.5                                   | 64780                   | 191                     | 155                           | 231                          | —                           | 226                         | —                           | —                            | —                            | 257                      | 239                         | —                           | —                            | —                            |
| HDP 130 3   | 61.7  | 24.3                                   | 62050                   | 168                     | 155                           | 231                          | —                           | 226                         | —                           | —                            | —                            | 257                      | 239                         | —                           | —                            | —                            |
| HDP 130 3   | 70.7  | 21.2                                   | 65650                   | 155                     | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 3   | 77.1  | 19.4                                   | 62890                   | 136                     | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 3   | 87.2  | 17.2                                   | 67750                   | 130                     | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 3   | 95.1  | 15.8                                   | 64910                   | 114                     | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 3   | 108.3 | 13.9                                   | 63140                   | 97                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 111.2 | 13.5                                   | 61600                   | 94                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 121.4 | 12.4                                   | 66770                   | 94                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 139.0 | 10.8                                   | 69570                   | 85                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 151.7 | 9.9                                    | 66770                   | 75                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 176.7 | 8.5                                    | 69350                   | 67                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 192.9 | 7.8                                    | 66770                   | 59                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 217.9 | 6.9                                    | 69570                   | 54                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 237.9 | 6.3                                    | 66770                   | 48                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 274.5 | 5.5                                    | 69570                   | 43                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 299.6 | 5.0                                    | 66770                   | 38                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 348.9 | 4.3                                    | 69570                   | 34                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 380.9 | 3.9                                    | 66770                   | 30                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 469.8 | 3.2                                    | 66770                   | 24                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 534.5 | 2.8                                    | 63140                   | 20                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



HDP

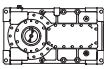
| HDP 130   |       |                               |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-------------------|----------------------|----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDP 130 2   | 7.3   | 165                           | 51750          | 932            | *                             | *                     | 395                  | *                    | 451                  | 694                   |                       | *                 | *                    | 408                  | 568                   |                       |
| HDP 130 2   | 7.9   | 151                           | 54830          | 905            | *                             | *                     | 398                  | 376                  | 454                  | 697                   |                       | *                 | *                    | 411                  | 571                   |                       |
| HDP 130 2   | 8.6   | 139                           | 54680          | 831            | *                             | 351                   | 414                  | 392                  | 470                  | 713                   |                       | *                 | 333                  | 427                  | 587                   |                       |
| HDP 130 2   | 9.4   | 128                           | 57790          | 804            | *                             | 354                   | 417                  | 395                  | 473                  | 716                   |                       | 327               | 336                  | 430                  | 590                   |                       |
| HDP 130 2   | 11.3  | 106                           | 60520          | 700            | *                             | 375                   | 438                  | 416                  | 494                  | 737                   |                       | 348               | 357                  | 451                  | 611                   |                       |
| HDP 130 2   | 12.3  | 97                            | 61910          | 656            | *                             | 377                   | 440                  | 418                  | 496                  | 739                   | ⊖                     | 350               | 359                  | 453                  | 613                   | ⊖                     |
| HDP 130 2   | 14.1  | 85                            | 61810          | 572            | 256                           | 390                   | 453                  | 431                  | 509                  | 752                   |                       | 363               | 372                  | 466                  | 626                   |                       |
| HDP 130 2   | 15.4  | 78                            | 63410          | 538            | 257                           | 391                   | 454                  | 432                  | 510                  | 753                   |                       | 364               | 373                  | 467                  | 627                   |                       |
| HDP 130 2   | 17.4  | 69                            | 66280          | 497            | 266                           | 400                   | 463                  | 441                  | 519                  | —                     |                       | 373               | 382                  | 476                  | 636                   |                       |
| HDP 130 2   | 19.0  | 63                            | 63450          | 436            | 267                           | 401                   | 464                  | 442                  | —                    | —                     |                       | 374               | 383                  | 477                  | —                     |                       |
| HDP 130 2   | 21.7  | 55                            | 63690          | 385            | 269                           | 403                   | —                    | 444                  | —                    | —                     |                       | 376               | 385                  | —                    | —                     |                       |
| HDP 130 3   | 21.8  | 55                            | 65880          | 404            | 202                           | 296                   | 341                  | 329                  | 386                  | 562                   | —                     | 304               | 286                  | 354                  | 470                   | —                     |
| HDP 130 3   | 23.8  | 50                            | 63070          | 354            | 203                           | 297                   | 342                  | 330                  | 387                  | —                     | —                     | 305               | 287                  | 355                  | —                     | —                     |
| HDP 130 3   | 28.6  | 42                            | 65430          | 305            | 207                           | 301                   | 346                  | 334                  | —                    | —                     | —                     | 309               | 291                  | 359                  | —                     | —                     |
| HDP 130 3   | 31.2  | 38                            | 62650          | 268            | 208                           | 302                   | —                    | 335                  | —                    | —                     | —                     | 310               | 292                  | —                    | —                     | —                     |
| HDP 130 3   | 35.7  | 34                            | 65100          | 243            | 210                           | 304                   | —                    | 337                  | —                    | —                     | —                     | 312               | 294                  | —                    | —                     | —                     |
| HDP 130 3   | 39.0  | 31                            | 62340          | 213            | 211                           | 305                   | —                    | 338                  | —                    | —                     | —                     | 313               | 295                  | —                    | —                     | —                     |
| HDP 130 3   | 44.1  | 27.2                          | 64820          | 196            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 48.1  | 24.9                          | 62080          | 172            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 56.5  | 21.2                          | 65650          | 155            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 61.7  | 19.4                          | 62890          | 136            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 70.7  | 17.0                          | 67880          | 128            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 77.1  | 15.6                          | 65050          | 113            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 87.2  | 13.8                          | 69570          | 107            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 95.1  | 12.6                          | 66770          | 94             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 108.3 | 11.1                          | 63140          | 78             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 111.2 | 10.8                          | 66220          | 81             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 121.4 | 9.9                           | 66770          | 75             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 139.0 | 8.6                           | 69570          | 68             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 151.7 | 7.9                           | 66770          | 60             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 176.7 | 6.8                           | 69570          | 54             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 192.9 | 6.2                           | 66770          | 47             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 217.9 | 5.5                           | 69570          | 43             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 237.9 | 5.0                           | 66770          | 38             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 274.5 | 4.4                           | 69570          | 35             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 299.6 | 4.0                           | 66770          | 30             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 348.9 | 3.4                           | 69570          | 27.2           | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 380.9 | 3.2                           | 66770          | 23.9           | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 469.8 | 2.6                           | 66770          | 19.4           | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 534.5 | 2.2                           | 63140          | 16.1           | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP**

| HDP 130   |       |  |                         |                         | $n_1 = 1200 \text{ min}^{-1}$ |                              |                             |                             |                             |                              |                              |                          |                             |                             |                              |                              |
|---|-------|--|-------------------------|-------------------------|-------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|--------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C         |                              |                             |                             |                             |                              |                              |                          |                             |                             |                              |                              |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]        | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] |
| HDP 130 2   | 7.3   | 165                                    | 51750                   | 932                     | *                             | *                            | *                           | *                           | *                           | 391                          |                              | *                        | *                           | *                           | 485                          |                              |
| HDP 130 2   | 7.9   | 151                                    | 54830                   | 905                     | *                             | *                            | *                           | *                           | *                           | 395                          |                              | *                        | *                           | *                           | 489                          |                              |
| HDP 130 2   | 8.6   | 139                                    | 54680                   | 831                     | *                             | *                            | *                           | *                           | *                           | 411                          |                              | *                        | *                           | 345                         | 505                          |                              |
| HDP 130 2   | 9.4   | 128                                    | 57790                   | 804                     | *                             | *                            | *                           | *                           | *                           | 414                          |                              | *                        | *                           | 348                         | 508                          |                              |
| HDP 130 2   | 11.3  | 106                                    | 60520                   | 700                     | *                             | *                            | 304                         | *                           | 300                         | 435                          |                              | *                        | *                           | 369                         | 529                          |                              |
| HDP 130 2   | 12.3  | 97                                     | 61910                   | 656                     | *                             | *                            | 306                         | *                           | 302                         | 437                          | ⊖                            | 268                      | 277                         | 371                         | 531                          | ⊖                            |
| HDP 130 2   | 14.1  | 85                                     | 61810                   | 572                     | *                             | 271                          | 318                         | 270                         | 314                         | 449                          |                              | 280                      | 289                         | 383                         | 543                          |                              |
| HDP 130 2   | 15.4  | 78                                     | 63410                   | 538                     | *                             | 273                          | 320                         | 272                         | 316                         | 451                          |                              | 282                      | 291                         | 385                         | 545                          |                              |
| HDP 130 2   | 17.4  | 69                                     | 66280                   | 497                     | *                             | 282                          | 329                         | 281                         | 325                         | 460                          |                              | 291                      | 300                         | 394                         | 554                          |                              |
| HDP 130 2   | 19.0  | 63                                     | 63450                   | 436                     | 185                           | 283                          | 330                         | 282                         | 326                         | 461                          |                              | 292                      | 301                         | 395                         | 555                          |                              |
| HDP 130 2   | 21.7  | 55                                     | 63690                   | 385                     | 187                           | 285                          | 332                         | 284                         | 328                         | 463                          |                              | 294                      | 303                         | 397                         | —                            |                              |
| HDP 130 3   | 21.8  | 55                                     | 65880                   | 404                     | *                             | 207                          | 240                         | 209                         | 240                         | 338                          | 408                          | 240                      | 222                         | 290                         | 406                          | —                            |
| HDP 130 3   | 23.8  | 50                                     | 63070                   | 354                     | *                             | 207                          | 240                         | 209                         | 240                         | 338                          | 408                          | 240                      | 222                         | 290                         | 406                          | —                            |
| HDP 130 3   | 28.6  | 42                                     | 65430                   | 305                     | 143                           | 212                          | 245                         | 214                         | 245                         | 343                          | —                            | 245                      | 227                         | 295                         | 411                          | —                            |
| HDP 130 3   | 31.2  | 38                                     | 62650                   | 268                     | 143                           | 212                          | 245                         | 214                         | 245                         | 343                          | —                            | 245                      | 227                         | 295                         | —                            | —                            |
| HDP 130 3   | 35.7  | 34                                     | 65100                   | 243                     | 146                           | 215                          | 248                         | 217                         | 248                         | —                            | —                            | 248                      | 230                         | 298                         | —                            | —                            |
| HDP 130 3   | 39.0  | 31                                     | 62340                   | 213                     | 146                           | 215                          | —                           | 217                         | —                           | —                            | —                            | 248                      | 230                         | —                           | —                            | —                            |
| HDP 130 3   | 44.1  | 27.2                                   | 64820                   | 196                     | 148                           | 217                          | —                           | 219                         | —                           | —                            | —                            | 250                      | 232                         | —                           | —                            | —                            |
| HDP 130 3   | 48.1  | 24.9                                   | 62080                   | 172                     | 149                           | 218                          | —                           | 220                         | —                           | —                            | —                            | 251                      | 233                         | —                           | —                            | —                            |
| HDP 130 3   | 56.5  | 21.2                                   | 65650                   | 155                     | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 3   | 61.7  | 19.4                                   | 62890                   | 136                     | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 3   | 70.7  | 17.0                                   | 67880                   | 128                     | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 3   | 77.1  | 15.6                                   | 65050                   | 113                     | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 3   | 87.2  | 13.8                                   | 69570                   | 107                     | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 3   | 95.1  | 12.6                                   | 66770                   | 94                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 3   | 108.3 | 11.1                                   | 63140                   | 78                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 111.2 | 10.8                                   | 66220                   | 81                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 121.4 | 9.9                                    | 66770                   | 75                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 139.0 | 8.6                                    | 69570                   | 68                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 151.7 | 7.9                                    | 66770                   | 60                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 176.7 | 6.8                                    | 69570                   | 54                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 192.9 | 6.2                                    | 66770                   | 47                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 217.9 | 5.5                                    | 69570                   | 43                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 237.9 | 5.0                                    | 66770                   | 38                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 274.5 | 4.4                                    | 69570                   | 35                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 299.6 | 4.0                                    | 66770                   | 30                      | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 348.9 | 3.4                                    | 69570                   | 27.2                    | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 380.9 | 3.2                                    | 66770                   | 23.9                    | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 469.8 | 2.6                                    | 66770                   | 19.4                    | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 130 4   | 534.5 | 2.2                                    | 63140                   | 16.1                    | —                             | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |

\*  BONFIGLIOLI TECHNICAL SERVICE

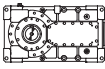
— Thermal verification not necessary



HDP

HDP 130

$n_1 = 1000 \text{ min}^{-1}$

|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|---|-------|--------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-------------------|----------------------|----------------------|-----------------------|-----------------------|
|   |       |                                |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDP 130 2   | 7.3   | 138                            | 54660          | 821            | *                        | *                     | 373                  | 394                  | 472                  | 715                   |                       | *                 | 335                  | 429                  | 589                   |                       |
| HDP 130 2   | 7.9   | 126                            | 57910          | 796            | *                        | 326                   | 376                  | 397                  | 475                  | 718                   |                       | 329               | 338                  | 432                  | 592                   |                       |
| HDP 130 2   | 8.6   | 116                            | 57750          | 731            | *                        | 338                   | 388                  | 409                  | 487                  | 730                   |                       | 341               | 350                  | 444                  | 604                   |                       |
| HDP 130 2   | 9.4   | 106                            | 61040          | 708            | *                        | 341                   | 391                  | 412                  | 490                  | 733                   |                       | 344               | 353                  | 447                  | 607                   |                       |
| HDP 130 2   | 11.3  | 88                             | 63920          | 616            | 254                      | 358                   | 408                  | 429                  | 507                  | 750                   |                       | 361               | 370                  | 464                  | 624                   |                       |
| HDP 130 2   | 12.3  | 81                             | 63920          | 565            | 255                      | 359                   | 409                  | 430                  | 508                  | 751                   | ⊖                     | 362               | 371                  | 465                  | 625                   | ⊖                     |
| HDP 130 2   | 14.1  | 71                             | 65290          | 504            | 265                      | 369                   | 419                  | 440                  | 518                  | —                     |                       | 372               | 381                  | 475                  | 635                   |                       |
| HDP 130 2   | 15.4  | 65                             | 63500          | 449            | 267                      | 371                   | 421                  | 442                  | 520                  | —                     |                       | 374               | 383                  | 477                  | —                     |                       |
| HDP 130 2   | 17.4  | 57                             | 65950          | 413            | 274                      | 378                   | 428                  | 449                  | —                    | —                     |                       | 381               | 390                  | 484                  | —                     |                       |
| HDP 130 2   | 19.0  | 53                             | 63140          | 362            | 275                      | 379                   | —                    | 450                  | —                    | —                     |                       | 382               | 391                  | —                    | —                     |                       |
| HDP 130 2   | 21.7  | 46                             | 63390          | 319            | 276                      | 380                   | —                    | 451                  | —                    | —                     |                       | 383               | 392                  | —                    | —                     |                       |
| HDP 130 3   | 21.8  | 46                             | 65570          | 335            | 209                      | 282                   | 317                  | 336                  | —                    | —                     | —                     | 311               | 293                  | 361                  | —                     | —                     |
| HDP 130 3   | 23.8  | 42                             | 62780          | 294            | 210                      | 283                   | 318                  | 337                  | —                    | —                     | —                     | 312               | 294                  | 362                  | —                     | —                     |
| HDP 130 3   | 28.6  | 35                             | 65160          | 253            | 213                      | 286                   | —                    | 340                  | —                    | —                     | —                     | 315               | 297                  | —                    | —                     | —                     |
| HDP 130 3   | 31.2  | 32                             | 62400          | 222            | 213                      | 286                   | —                    | 340                  | —                    | —                     | —                     | 315               | 297                  | —                    | —                     | —                     |
| HDP 130 3   | 35.7  | 28.0                           | 64850          | 202            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 39.0  | 25.6                           | 62110          | 177            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 44.1  | 22.7                           | 65010          | 164            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 48.1  | 20.8                           | 62270          | 144            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 56.5  | 17.7                           | 67470          | 133            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 61.7  | 16.2                           | 64640          | 117            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 70.7  | 14.2                           | 69570          | 110            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 77.1  | 13.0                           | 66770          | 96             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 87.2  | 11.5                           | 69570          | 89             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 95.1  | 10.5                           | 66770          | 78             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 108.3 | 9.2                            | 63140          | 65             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 111.2 | 9.0                            | 69570          | 71             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 121.4 | 8.2                            | 66770          | 62             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 139.0 | 7.2                            | 69570          | 57             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 151.7 | 6.6                            | 66770          | 50             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 176.7 | 5.7                            | 69570          | 45             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 192.9 | 5.2                            | 66770          | 39             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 217.9 | 4.6                            | 69570          | 36             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 237.9 | 4.2                            | 66770          | 32             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 274.5 | 3.6                            | 69570          | 29             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 299.6 | 3.3                            | 66770          | 25             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 348.9 | 2.9                            | 69570          | 23             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 380.9 | 2.6                            | 66770          | 19.9           | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 469.8 | 2.1                            | 66770          | 16.1           | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 534.5 | 1.9                            | 63140          | 13.4           | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |

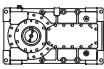
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary





HDP

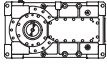
| HDP 130   |       |                               |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-------------------|----------------------|----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDP 130 2   | 7.3   | 138                           | 54660          | 821            | *                             | *                     | *                    | *                    | *                    | 412                   |                       | *                 | *                    | 346                  | 506                   |                       |
| HDP 130 2   | 7.9   | 126                           | 57910          | 796            | *                             | *                     | *                    | *                    | *                    | 415                   |                       | *                 | *                    | 349                  | 509                   |                       |
| HDP 130 2   | 8.6   | 116                           | 57750          | 731            | *                             | *                     | *                    | *                    | 293                  | 428                   |                       | *                 | *                    | 362                  | 522                   |                       |
| HDP 130 2   | 9.4   | 106                           | 61040          | 708            | *                             | *                     | *                    | *                    | 295                  | 430                   |                       | *                 | *                    | 364                  | 524                   |                       |
| HDP 130 2   | 11.3  | 88                            | 63920          | 616            | *                             | 247                   | 284                  | 268                  | 312                  | 447                   |                       | 278               | 287                  | 381                  | 541                   |                       |
| HDP 130 2   | 12.3  | 81                            | 63920          | 565            | *                             | 249                   | 286                  | 270                  | 314                  | 449                   | ⊖                     | 280               | 289                  | 383                  | 543                   | ⊖                     |
| HDP 130 2   | 14.1  | 71                            | 65290          | 504            | *                             | 259                   | 296                  | 280                  | 324                  | 459                   |                       | 290               | 299                  | 393                  | 553                   |                       |
| HDP 130 2   | 15.4  | 65                            | 63500          | 449            | 184                           | 260                   | 297                  | 281                  | 325                  | 460                   |                       | 291               | 300                  | 394                  | 554                   |                       |
| HDP 130 2   | 17.4  | 57                            | 65950          | 413            | 191                           | 267                   | 304                  | 288                  | 332                  | 467                   |                       | 298               | 307                  | 401                  | 561                   |                       |
| HDP 130 2   | 19.0  | 53                            | 63140          | 362            | 192                           | 268                   | 305                  | 289                  | 333                  | 468                   |                       | 299               | 308                  | 402                  | —                     |                       |
| HDP 130 2   | 21.7  | 46                            | 63390          | 319            | 194                           | 270                   | 307                  | 291                  | 335                  | —                     |                       | 301               | 310                  | 404                  | —                     |                       |
| HDP 130 3   | 21.8  | 46                            | 65570          | 335            | 145                           | 198                   | 224                  | 216                  | 247                  | 345                   | —                     | 247               | 229                  | 297                  | 413                   | —                     |
| HDP 130 3   | 23.8  | 42                            | 62780          | 294            | 145                           | 198                   | 224                  | 216                  | 247                  | 345                   | —                     | 247               | 229                  | 297                  | —                     | —                     |
| HDP 130 3   | 28.6  | 35                            | 65160          | 253            | 149                           | 202                   | 228                  | 220                  | 251                  | 349                   | —                     | 251               | 233                  | 301                  | —                     | —                     |
| HDP 130 3   | 31.2  | 32                            | 62400          | 222            | 149                           | 202                   | 228                  | 220                  | 251                  | —                     | —                     | 251               | 233                  | —                    | —                     | —                     |
| HDP 130 3   | 35.7  | 28.0                          | 64850          | 202            | 151                           | 204                   | —                    | 222                  | —                    | —                     | —                     | 253               | 235                  | —                    | —                     | —                     |
| HDP 130 3   | 39.0  | 25.6                          | 62110          | 177            | 152                           | 205                   | —                    | 223                  | —                    | —                     | —                     | 254               | 236                  | —                    | —                     | —                     |
| HDP 130 3   | 44.1  | 22.7                          | 65010          | 164            | 153                           | 206                   | —                    | 224                  | —                    | —                     | —                     | 255               | 237                  | —                    | —                     | —                     |
| HDP 130 3   | 48.1  | 20.8                          | 62270          | 144            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 56.5  | 17.7                          | 67470          | 133            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 61.7  | 16.2                          | 64640          | 117            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 70.7  | 14.2                          | 69570          | 110            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 77.1  | 13.0                          | 66770          | 96             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 87.2  | 11.5                          | 69570          | 89             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 95.1  | 10.5                          | 66770          | 78             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 3   | 108.3 | 9.2                           | 63140          | 65             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 111.2 | 9.0                           | 69570          | 71             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 121.4 | 8.2                           | 66770          | 62             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 139.0 | 7.2                           | 69570          | 57             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 151.7 | 6.6                           | 66770          | 50             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 176.7 | 5.7                           | 69570          | 45             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 192.9 | 5.2                           | 66770          | 39             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 217.9 | 4.6                           | 69570          | 36             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 237.9 | 4.2                           | 66770          | 32             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 274.5 | 3.6                           | 69570          | 29             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 299.6 | 3.3                           | 66770          | 25             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 348.9 | 2.9                           | 69570          | 23             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 380.9 | 2.6                           | 66770          | 19.9           | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 469.8 | 2.1                           | 66770          | 16.1           | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 130 4   | 534.5 | 1.9                           | 63140          | 13.4           | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |

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— Thermal verification not necessary



HDP

| HDP 140   |       |                               |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                    |                      |                      |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|--------------------|----------------------|----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                    |                      |                      |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TTSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDP 140 2   | 8.4   | 215                           | 52740          | 1238           | *                             | *                     | *                    | *                    | *                    | 623                   |                       | *                  | *                    | *                    | 497                   |                       |
| HDP 140 2   | 9.3   | 195                           | 58360          | 1238           | *                             | *                     | *                    | *                    | *                    | 632                   |                       | *                  | *                    | *                    | 506                   |                       |
| HDP 140 2   | 9.9   | 182                           | 55720          | 1103           | *                             | *                     | *                    | *                    | *                    | 658                   |                       | *                  | *                    | *                    | 532                   |                       |
| HDP 140 2   | 11.0  | 164                           | 61660          | 1103           | *                             | *                     | *                    | *                    | *                    | 665                   |                       | *                  | *                    | *                    | 539                   |                       |
| HDP 140 2   | 13.0  | 138                           | 63200          | 953            | *                             | *                     | 457                  | *                    | 458                  | 701                   |                       | *                  | *                    | 415                  | 575                   |                       |
| HDP 140 2   | 14.4  | 125                           | 69940          | 953            | *                             | *                     | 462                  | 385                  | 463                  | 706                   | ●                     | *                  | *                    | 420                  | 580                   | ●                     |
| HDP 140 2   | 16.3  | 111                           | 71870          | 867            | *                             | 402                   | 483                  | 406                  | 484                  | 727                   |                       | *                  | *                    | 441                  | 601                   |                       |
| HDP 140 2   | 18.0  | 100                           | 77420          | 844            | *                             | 405                   | 486                  | 409                  | 487                  | 730                   |                       | 341                | 350                  | 444                  | 604                   |                       |
| HDP 140 2   | 20.1  | 90                            | 67550          | 661            | *                             | 420                   | 501                  | 424                  | 502                  | 745                   |                       | 356                | 365                  | 459                  | 619                   |                       |
| HDP 140 2   | 22.2  | 81                            | 74750          | 661            | *                             | 423                   | 504                  | 427                  | 505                  | 748                   |                       | 359                | 368                  | 462                  | 622                   |                       |
| HDP 140 2   | 24.9  | 72                            | 82150          | 646            | *                             | 426                   | 507                  | 430                  | 508                  | 751                   |                       | 362                | 371                  | 465                  | 625                   |                       |
| HDP 140 3   | 25.1  | 72                            | 71610          | 572            | *                             | 305                   | 363                  | 312                  | 369                  | 545                   | 671                   | 287                | 269                  | 337                  | 453                   | 675                   |
| HDP 140 3   | 27.7  | 65                            | 79250          | 572            | *                             | 306                   | 364                  | 313                  | 370                  | 546                   | 672                   | 288                | 270                  | 338                  | 454                   | 676                   |
| HDP 140 3   | 32.9  | 55                            | 80680          | 491            | *                             | 314                   | 372                  | 321                  | 378                  | 554                   | —                     | 296                | 278                  | 346                  | 462                   | 684                   |
| HDP 140 3   | 36.4  | 49                            | 80850          | 445            | 195                           | 315                   | 373                  | 322                  | 379                  | 555                   | —                     | 297                | 279                  | 347                  | 463                   | —                     |
| HDP 140 3   | 41.1  | 44                            | 80350          | 391            | 200                           | 320                   | 378                  | 327                  | 384                  | 560                   | —                     | 302                | 284                  | 352                  | 468                   | —                     |
| HDP 140 3   | 45.5  | 40                            | 80850          | 356            | 200                           | 320                   | 378                  | 327                  | 384                  | —                     | —                     | 302                | 284                  | 352                  | 468                   | —                     |
| HDP 140 3   | 50.7  | 35                            | 74300          | 293            | 204                           | 324                   | —                    | 331                  | —                    | —                     | —                     | 306                | 288                  | 356                  | —                     | —                     |
| HDP 140 3   | 56.2  | 32                            | 80850          | 288            | 204                           | 324                   | —                    | 331                  | —                    | —                     | —                     | 306                | 288                  | —                    | —                     | —                     |
| HDP 140 3   | 65.1  | 27.7                          | 82330          | 253            | 222                           | 342                   | —                    | 349                  | —                    | —                     | —                     | 324                | 306                  | —                    | —                     | —                     |
| HDP 140 3   | 72.0  | 25.0                          | 80850          | 225            | 222                           | 342                   | —                    | 349                  | —                    | —                     | —                     | 324                | 306                  | —                    | —                     | —                     |
| HDP 140 3   | 81.3  | 22.1                          | 81510          | 201            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 3   | 90.0  | 20.0                          | 80850          | 180            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 3   | 100.3 | 17.9                          | 74300          | 148            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 3   | 111.0 | 16.2                          | 80850          | 146            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 3   | 124.7 | 14.4                          | 73920          | 119            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 141.6 | 12.7                          | 73370          | 106            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 160.0 | 11.3                          | 81510          | 104            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 177.0 | 10.2                          | 80850          | 93             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 197.3 | 9.1                           | 74300          | 77             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 225.0 | 8.0                           | 80850          | 73             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 250.8 | 7.2                           | 74300          | 61             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 277.5 | 6.5                           | 80850          | 60             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 315.9 | 5.7                           | 81510          | 53             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 349.6 | 5.1                           | 80850          | 47             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 401.6 | 4.5                           | 81510          | 41             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 444.4 | 4.1                           | 80850          | 37             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 495.3 | 3.6                           | 74300          | 31             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |

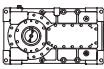
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP**

**HDP 140** **n<sub>1</sub> = 1800 min<sup>-1</sup>**

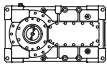
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                              |                             |                             |                             |                              |                              |                          |                             |                             |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|--------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] |
| HDP 140 2   | 8.4   | 215                                    | 52740                   | 1238                    | *                      | *                            | *                           | *                           | *                           | *                            |                              | *                        | *                           | *                           | *                            |                              |
| HDP 140 2   | 9.3   | 195                                    | 58360                   | 1238                    | *                      | *                            | *                           | *                           | *                           | *                            |                              | *                        | *                           | *                           | *                            |                              |
| HDP 140 2   | 9.9   | 182                                    | 55720                   | 1103                    | *                      | *                            | *                           | *                           | *                           | *                            |                              | *                        | *                           | *                           | 447                          |                              |
| HDP 140 2   | 11.0  | 164                                    | 61660                   | 1103                    | *                      | *                            | *                           | *                           | *                           | *                            |                              | *                        | *                           | *                           | 453                          |                              |
| HDP 140 2   | 13.0  | 138                                    | 63200                   | 953                     | *                      | *                            | *                           | *                           | *                           | 395                          |                              | *                        | *                           | *                           | 489                          |                              |
| HDP 140 2   | 14.4  | 125                                    | 69940                   | 953                     | *                      | *                            | *                           | *                           | *                           | 400                          | ●                            | *                        | *                           | *                           | 494                          | ●                            |
| HDP 140 2   | 16.3  | 111                                    | 71870                   | 867                     | *                      | *                            | *                           | *                           | *                           | 421                          |                              | *                        | *                           | 355                         | 515                          |                              |
| HDP 140 2   | 18.0  | 100                                    | 77420                   | 844                     | *                      | *                            | *                           | *                           | *                           | 425                          |                              | *                        | *                           | 359                         | 519                          |                              |
| HDP 140 2   | 20.1  | 90                                     | 67550                   | 661                     | *                      | 288                          | 348                         | *                           | 304                         | 439                          |                              | 270                      | 279                         | 373                         | 533                          |                              |
| HDP 140 2   | 22.2  | 81                                     | 74750                   | 661                     | *                      | 291                          | 351                         | *                           | 307                         | 442                          |                              | 273                      | 282                         | 376                         | 536                          |                              |
| HDP 140 2   | 24.9  | 72                                     | 82150                   | 646                     | *                      | 294                          | 354                         | 266                         | 310                         | 445                          |                              | 276                      | 285                         | 379                         | 539                          |                              |
| HDP 140 3   | 25.1  | 72                                     | 71610                   | 572                     | *                      | *                            | 248                         | *                           | *                           | 318                          | 388                          | *                        | *                           | 270                         | 386                          | 608                          |
| HDP 140 3   | 27.7  | 65                                     | 79250                   | 572                     | *                      | *                            | 250                         | *                           | *                           | 320                          | 390                          | *                        | *                           | 272                         | 388                          | 610                          |
| HDP 140 3   | 32.9  | 55                                     | 80680                   | 491                     | *                      | 215                          | 257                         | 198                         | 229                         | 327                          | 397                          | 229                      | 211                         | 279                         | 395                          | 617                          |
| HDP 140 3   | 36.4  | 49                                     | 80850                   | 445                     | *                      | 216                          | 258                         | 199                         | 230                         | 328                          | 398                          | 230                      | 212                         | 280                         | 396                          | 618                          |
| HDP 140 3   | 41.1  | 44                                     | 80350                   | 391                     | *                      | 221                          | 263                         | 204                         | 235                         | 333                          | 403                          | 235                      | 217                         | 285                         | 401                          | —                            |
| HDP 140 3   | 45.5  | 40                                     | 80850                   | 356                     | *                      | 222                          | 264                         | 205                         | 236                         | 334                          | 404                          | 236                      | 218                         | 286                         | 402                          | —                            |
| HDP 140 3   | 50.7  | 35                                     | 74300                   | 293                     | 137                    | 225                          | 267                         | 208                         | 239                         | 337                          | —                            | 239                      | 221                         | 289                         | 405                          | —                            |
| HDP 140 3   | 56.2  | 32                                     | 80850                   | 288                     | 138                    | 226                          | 268                         | 209                         | 240                         | 338                          | —                            | 240                      | 222                         | 290                         | —                            | —                            |
| HDP 140 3   | 65.1  | 27.7                                   | 82330                   | 253                     | 155                    | 243                          | 285                         | 226                         | 257                         | —                            | —                            | 257                      | 239                         | 307                         | —                            | —                            |
| HDP 140 3   | 72.0  | 25.0                                   | 80850                   | 225                     | 155                    | 243                          | —                           | 226                         | —                           | —                            | —                            | 257                      | 239                         | —                           | —                            | —                            |
| HDP 140 3   | 81.3  | 22.1                                   | 81510                   | 201                     | 158                    | 246                          | —                           | 229                         | —                           | —                            | —                            | 260                      | 242                         | —                           | —                            | —                            |
| HDP 140 3   | 90.0  | 20.0                                   | 80850                   | 180                     | 158                    | 246                          | —                           | 229                         | —                           | —                            | —                            | 260                      | 242                         | —                           | —                            | —                            |
| HDP 140 3   | 100.3 | 17.9                                   | 74300                   | 148                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 111.0 | 16.2                                   | 80850                   | 146                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 124.7 | 14.4                                   | 73920                   | 119                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 141.6 | 12.7                                   | 73370                   | 106                     | 96                     | 163                          | —                           | 151                         | —                           | —                            | —                            | 174                      | 162                         | —                           | —                            | —                            |
| HDP 140 4   | 160.0 | 11.3                                   | 81510                   | 104                     | 98                     | 165                          | —                           | 153                         | —                           | —                            | —                            | 176                      | 164                         | —                           | —                            | —                            |
| HDP 140 4   | 177.0 | 10.2                                   | 80850                   | 93                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 197.3 | 9.1                                    | 74300                   | 77                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 225.0 | 8.0                                    | 80850                   | 73                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 250.8 | 7.2                                    | 74300                   | 61                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 277.5 | 6.5                                    | 80850                   | 60                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 315.9 | 5.7                                    | 81510                   | 53                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 349.6 | 5.1                                    | 80850                   | 47                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 401.6 | 4.5                                    | 81510                   | 41                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 444.4 | 4.1                                    | 80850                   | 37                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 495.3 | 3.6                                    | 74300                   | 31                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



HDP

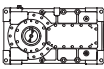
| HDP 140   |       |                               |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                    |                      |                      |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|--------------------|----------------------|----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                    |                      |                      |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TTSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDP 140 2   | 8.4   | 179                           | 55710          | 1090           | *                             | *                     | *                    | *                    | *                    | 667                   |                       | *                  | *                    | *                    | 541                   |                       |
| HDP 140 2   | 9.3   | 162                           | 61640          | 1090           | *                             | *                     | *                    | *                    | *                    | 674                   |                       | *                  | *                    | *                    | 548                   |                       |
| HDP 140 2   | 9.9   | 151                           | 58850          | 971            | *                             | *                     | 417                  | *                    | 451                  | 694                   |                       | *                  | *                    | 408                  | 568                   |                       |
| HDP 140 2   | 11.0  | 137                           | 65130          | 971            | *                             | *                     | 423                  | *                    | 457                  | 700                   |                       | *                  | *                    | 414                  | 574                   |                       |
| HDP 140 2   | 13.0  | 115                           | 66760          | 839            | *                             | 380                   | 450                  | 406                  | 484                  | 727                   |                       | 338                | 347                  | 441                  | 601                   |                       |
| HDP 140 2   | 14.4  | 104                           | 73870          | 839            | *                             | 384                   | 454                  | 410                  | 488                  | 731                   | ●                     | 342                | 351                  | 445                  | 605                   | ●                     |
| HDP 140 2   | 16.3  | 92                            | 75910          | 763            | *                             | 400                   | 470                  | 426                  | 504                  | 747                   |                       | 358                | 367                  | 461                  | 621                   |                       |
| HDP 140 2   | 18.0  | 83                            | 81780          | 743            | *                             | 403                   | 473                  | 429                  | 507                  | 750                   |                       | 361                | 370                  | 464                  | 624                   |                       |
| HDP 140 2   | 20.1  | 75                            | 71350          | 582            | 265                           | 414                   | 484                  | 440                  | 518                  | 761                   |                       | 372                | 381                  | 475                  | 635                   |                       |
| HDP 140 2   | 22.2  | 68                            | 78950          | 582            | 267                           | 416                   | 486                  | 442                  | 520                  | 763                   |                       | 374                | 383                  | 477                  | 637                   |                       |
| HDP 140 2   | 24.9  | 60                            | 82230          | 539            | 270                           | 419                   | 489                  | 445                  | 523                  | 766                   |                       | 377                | 386                  | 480                  | 640                   |                       |
| HDP 140 3   | 25.1  | 60                            | 75910          | 505            | *                             | 303                   | 354                  | 326                  | 383                  | 559                   | —                     | 301                | 283                  | 351                  | 467                   | 689                   |
| HDP 140 3   | 27.7  | 54                            | 82930          | 499            | 200                           | 304                   | 355                  | 327                  | 384                  | 560                   | —                     | 302                | 284                  | 352                  | 468                   | 690                   |
| HDP 140 3   | 32.9  | 46                            | 84810          | 430            | 206                           | 310                   | 361                  | 333                  | 390                  | 566                   | —                     | 308                | 290                  | 358                  | 474                   | —                     |
| HDP 140 3   | 36.4  | 41                            | 82330          | 377            | 207                           | 311                   | 362                  | 334                  | 391                  | —                     | —                     | 309                | 291                  | 359                  | 475                   | —                     |
| HDP 140 3   | 41.1  | 36                            | 84810          | 344            | 210                           | 314                   | 365                  | 337                  | 394                  | —                     | —                     | 312                | 294                  | 362                  | —                     | —                     |
| HDP 140 3   | 45.5  | 33                            | 81890          | 300            | 211                           | 315                   | —                    | 338                  | —                    | —                     | —                     | 313                | 295                  | 363                  | —                     | —                     |
| HDP 140 3   | 50.7  | 29.6                          | 82170          | 270            | 214                           | 318                   | —                    | 341                  | —                    | —                     | —                     | 316                | 298                  | —                    | —                     | —                     |
| HDP 140 3   | 56.2  | 26.7                          | 81510          | 242            | 214                           | 318                   | —                    | 341                  | —                    | —                     | —                     | 316                | 298                  | —                    | —                     | —                     |
| HDP 140 3   | 65.1  | 23.1                          | 84810          | 218            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 3   | 72.0  | 20.8                          | 81100          | 188            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 3   | 81.3  | 18.4                          | 84810          | 174            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 3   | 90.0  | 16.7                          | 82200          | 152            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 3   | 100.3 | 15.0                          | 82170          | 137            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 3   | 111.0 | 13.5                          | 84850          | 128            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 3   | 124.7 | 12.0                          | 78870          | 106            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 141.6 | 10.6                          | 78480          | 94             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 160.0 | 9.4                           | 84820          | 90             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 177.0 | 8.5                           | 87060          | 84             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 197.3 | 7.6                           | 81580          | 70             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 225.0 | 6.7                           | 87060          | 66             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 250.8 | 6.0                           | 81230          | 55             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 277.5 | 5.4                           | 87060          | 53             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 315.9 | 4.7                           | 84820          | 46             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 349.6 | 4.3                           | 87060          | 42             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 401.6 | 3.7                           | 84820          | 36             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 444.4 | 3.4                           | 87060          | 33             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |
| HDP 140 4   | 495.3 | 3.0                           | 82170          | 28             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                  | —                    | —                    | —                     | —                     |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP 140** **n<sub>1</sub> = 1500 min<sup>-1</sup>**

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                              |                             |                             |                             |                              |                              |                          |                             |                             |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|--------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] |
| HDP 140 2   | 8.4   | 179                                    | 55710                   | 1090                    | *                      | *                            | *                           | *                           | *                           | *                            |                              | *                        | *                           | *                           | 456                          |                              |
| HDP 140 2   | 9.3   | 162                                    | 61640                   | 1090                    | *                      | *                            | *                           | *                           | *                           | *                            |                              | *                        | *                           | *                           | 462                          |                              |
| HDP 140 2   | 9.9   | 151                                    | 58850                   | 971                     | *                      | *                            | *                           | *                           | *                           | 388                          |                              | *                        | *                           | *                           | 482                          |                              |
| HDP 140 2   | 11.0  | 137                                    | 65130                   | 971                     | *                      | *                            | *                           | *                           | *                           | 394                          |                              | *                        | *                           | *                           | 488                          |                              |
| HDP 140 2   | 13.0  | 115                                    | 66760                   | 839                     | *                      | *                            | *                           | *                           | *                           | 421                          |                              | *                        | *                           | 355                         | 515                          |                              |
| HDP 140 2   | 14.4  | 104                                    | 73870                   | 839                     | *                      | *                            | *                           | *                           | *                           | 425                          | ⊖                            | *                        | *                           | 359                         | 519                          | ⊖                            |
| HDP 140 2   | 16.3  | 92                                     | 75910                   | 763                     | *                      | *                            | 326                         | *                           | 306                         | 441                          |                              | *                        | *                           | 375                         | 535                          |                              |
| HDP 140 2   | 18.0  | 83                                     | 81780                   | 743                     | *                      | *                            | 329                         | *                           | 309                         | 444                          |                              | *                        | *                           | 378                         | 538                          |                              |
| HDP 140 2   | 20.1  | 75                                     | 71350                   | 582                     | *                      | 288                          | 340                         | 276                         | 320                         | 455                          |                              | 286                      | 295                         | 389                         | 549                          |                              |
| HDP 140 2   | 22.2  | 68                                     | 78950                   | 582                     | *                      | 290                          | 342                         | 278                         | 322                         | 457                          |                              | 288                      | 297                         | 391                         | 551                          |                              |
| HDP 140 2   | 24.9  | 60                                     | 82230                   | 539                     | *                      | 293                          | 345                         | 281                         | 325                         | 460                          |                              | 291                      | 300                         | 394                         | 554                          |                              |
| HDP 140 3   | 25.1  | 60                                     | 75910                   | 505                     | *                      | 208                          | 245                         | 203                         | 234                         | 332                          | 402                          | 234                      | 216                         | 284                         | 400                          | 622                          |
| HDP 140 3   | 27.7  | 54                                     | 82930                   | 499                     | *                      | 210                          | 247                         | 205                         | 236                         | 334                          | 404                          | 236                      | 218                         | 286                         | 402                          | 624                          |
| HDP 140 3   | 32.9  | 46                                     | 84810                   | 430                     | *                      | 215                          | 252                         | 210                         | 241                         | 339                          | 409                          | 241                      | 223                         | 291                         | 407                          | 629                          |
| HDP 140 3   | 36.4  | 41                                     | 82330                   | 377                     | *                      | 216                          | 253                         | 211                         | 242                         | 340                          | 410                          | 242                      | 224                         | 292                         | 408                          | —                            |
| HDP 140 3   | 41.1  | 36                                     | 84810                   | 344                     | 144                    | 220                          | 257                         | 215                         | 246                         | 344                          | 414                          | 246                      | 228                         | 296                         | 412                          | —                            |
| HDP 140 3   | 45.5  | 33                                     | 81890                   | 300                     | 144                    | 220                          | 257                         | 215                         | 246                         | 344                          | —                            | 246                      | 228                         | 296                         | 412                          | —                            |
| HDP 140 3   | 50.7  | 29.6                                   | 82170                   | 270                     | 147                    | 223                          | 260                         | 218                         | 249                         | 347                          | —                            | 249                      | 231                         | 299                         | —                            | —                            |
| HDP 140 3   | 56.2  | 26.7                                   | 81510                   | 242                     | 148                    | 224                          | 261                         | 219                         | 250                         | —                            | —                            | 250                      | 232                         | 300                         | —                            | —                            |
| HDP 140 3   | 65.1  | 23.1                                   | 84810                   | 218                     | 161                    | 237                          | —                           | 232                         | —                           | —                            | —                            | 263                      | 245                         | —                           | —                            | —                            |
| HDP 140 3   | 72.0  | 20.8                                   | 81100                   | 188                     | 161                    | 237                          | —                           | 232                         | —                           | —                            | —                            | 263                      | 245                         | —                           | —                            | —                            |
| HDP 140 3   | 81.3  | 18.4                                   | 84810                   | 174                     | 163                    | 239                          | —                           | 234                         | —                           | —                            | —                            | 265                      | 247                         | —                           | —                            | —                            |
| HDP 140 3   | 90.0  | 16.7                                   | 82200                   | 152                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 100.3 | 15.0                                   | 82170                   | 137                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 111.0 | 13.5                                   | 84850                   | 128                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 124.7 | 12.0                                   | 78870                   | 106                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 141.6 | 10.6                                   | 78480                   | 94                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 160.0 | 9.4                                    | 84820                   | 90                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 177.0 | 8.5                                    | 87060                   | 84                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 197.3 | 7.6                                    | 81580                   | 70                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 225.0 | 6.7                                    | 87060                   | 66                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 250.8 | 6.0                                    | 81230                   | 55                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 277.5 | 5.4                                    | 87060                   | 53                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 315.9 | 4.7                                    | 84820                   | 46                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 349.6 | 4.3                                    | 87060                   | 42                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 401.6 | 3.7                                    | 84820                   | 36                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 444.4 | 3.4                                    | 87060                   | 33                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 495.3 | 3.0                                    | 82170                   | 28                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |

\*  BONFIGLIOLI TECHNICAL SERVICE

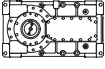
— Thermal verification not necessary



HDP

HDP 140

$n_1 = 1200 \text{ min}^{-1}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|---|-------|-------------------------------|----------------|----------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-------------------|----------------------|----------------------|-----------------------|-----------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDP 140 2   | 8.4   | 144                           | 59560          | 932            | *                        | *                     | 401                  | 379                  | 457                  | 700                   |                       | *                 | *                    | 414                  | 574                   |                       |
| HDP 140 2   | 9.3   | 130                           | 65910          | 932            | *                        | *                     | 406                  | 384                  | 462                  | 705                   |                       | *                 | *                    | 419                  | 579                   |                       |
| HDP 140 2   | 9.9   | 121                           | 62930          | 831            | *                        | 359                   | 422                  | 400                  | 478                  | 721                   |                       | *                 | 341                  | 435                  | 595                   |                       |
| HDP 140 2   | 11.0  | 109                           | 69630          | 831            | *                        | 363                   | 426                  | 404                  | 482                  | 725                   |                       | 336               | 345                  | 439                  | 599                   |                       |
| HDP 140 2   | 13.0  | 92                            | 71380          | 718            | *                        | 384                   | 447                  | 425                  | 503                  | 746                   |                       | 357               | 366                  | 460                  | 620                   |                       |
| HDP 140 2   | 14.4  | 83                            | 78980          | 718            | *                        | 387                   | 450                  | 428                  | 506                  | 749                   | ●                     | 360               | 369                  | 463                  | 623                   | ●                     |
| HDP 140 2   | 16.3  | 74                            | 81170          | 653            | 266                      | 400                   | 463                  | 441                  | 519                  | 762                   |                       | 373               | 382                  | 476                  | 636                   |                       |
| HDP 140 2   | 18.0  | 67                            | 83440          | 606            | 268                      | 402                   | 465                  | 443                  | 521                  | 764                   |                       | 375               | 384                  | 478                  | 638                   |                       |
| HDP 140 2   | 20.1  | 60                            | 76290          | 498            | 277                      | 411                   | 474                  | 452                  | 530                  | —                     |                       | 384               | 393                  | 487                  | 647                   |                       |
| HDP 140 2   | 22.2  | 54                            | 82930          | 489            | 278                      | 412                   | 475                  | 453                  | 531                  | —                     |                       | 385               | 394                  | 488                  | 648                   |                       |
| HDP 140 2   | 24.9  | 48                            | 82300          | 432            | 280                      | 414                   | 477                  | 455                  | —                    | —                     |                       | 387               | 396                  | 490                  | —                     |                       |
| HDP 140 3   | 25.1  | 48                            | 77440          | 412            | 210                      | 304                   | 349                  | 337                  | 394                  | 570                   | —                     | 312               | 294                  | 362                  | 478                   | —                     |
| HDP 140 3   | 27.7  | 43                            | 82440          | 397            | 211                      | 305                   | 350                  | 338                  | 395                  | 571                   | —                     | 313               | 295                  | 363                  | 479                   | —                     |
| HDP 140 3   | 32.9  | 36                            | 84810          | 344            | 215                      | 309                   | 354                  | 342                  | 399                  | —                     | —                     | 317               | 299                  | 367                  | —                     | —                     |
| HDP 140 3   | 36.4  | 33                            | 81890          | 300            | 216                      | 310                   | —                    | 343                  | —                    | —                     | —                     | 318               | 300                  | 368                  | —                     | —                     |
| HDP 140 3   | 41.1  | 29.2                          | 84810          | 275            | 219                      | 313                   | —                    | 346                  | —                    | —                     | —                     | 321               | 303                  | —                    | —                     | —                     |
| HDP 140 3   | 45.5  | 26.4                          | 81480          | 239            | 219                      | 313                   | —                    | 346                  | —                    | —                     | —                     | 321               | 303                  | —                    | —                     | —                     |
| HDP 140 3   | 50.7  | 23.6                          | 82170          | 216            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 56.2  | 21.4                          | 81140          | 193            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 65.1  | 18.4                          | 84810          | 174            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 72.0  | 16.7                          | 82200          | 152            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 81.3  | 14.8                          | 84810          | 139            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 90.0  | 13.3                          | 85020          | 126            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 100.3 | 12.0                          | 82170          | 109            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 111.0 | 10.8                          | 87060          | 105            | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 124.7 | 9.6                           | 78870          | 84             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 141.6 | 8.5                           | 84370          | 81             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 160.0 | 7.5                           | 84820          | 72             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 177.0 | 6.8                           | 87060          | 67             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 197.3 | 6.1                           | 81250          | 56             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 225.0 | 5.3                           | 87060          | 53             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 250.8 | 4.8                           | 80930          | 44             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 277.5 | 4.3                           | 87060          | 43             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 315.9 | 3.8                           | 84820          | 37             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 349.6 | 3.4                           | 87060          | 34             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 401.6 | 3.0                           | 84820          | 29             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 444.4 | 2.7                           | 87060          | 27             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 495.3 | 2.4                           | 82170          | 23             | —                        | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |

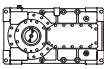
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP**

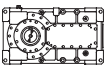
**HDP 140** **n<sub>1</sub> = 1200 min<sup>-1</sup>**

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                              |                             |                             |                             |                              |                              |                          |                             |                             |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|--------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] |
| HDP 140 2   | 8.4   | 144                                    | 59560                   | 932                     | *                      | *                            | *                           | *                           | *                           | 394                          |                              | *                        | *                           | *                           | 488                          |                              |
| HDP 140 2   | 9.3   | 130                                    | 65910                   | 932                     | *                      | *                            | *                           | *                           | *                           | 399                          |                              | *                        | *                           | *                           | 493                          |                              |
| HDP 140 2   | 9.9   | 121                                    | 62930                   | 831                     | *                      | *                            | *                           | *                           | *                           | 415                          |                              | *                        | *                           | 349                         | 509                          |                              |
| HDP 140 2   | 11.0  | 109                                    | 69630                   | 831                     | *                      | *                            | *                           | *                           | *                           | 419                          |                              | *                        | *                           | 353                         | 513                          |                              |
| HDP 140 2   | 13.0  | 92                                     | 71380                   | 718                     | *                      | *                            | 309                         | *                           | 305                         | 440                          |                              | *                        | *                           | 374                         | 534                          |                              |
| HDP 140 2   | 14.4  | 83                                     | 78980                   | 718                     | *                      | *                            | 312                         | *                           | 308                         | 443                          | ●                            | *                        | *                           | 377                         | 537                          | ●                            |
| HDP 140 2   | 16.3  | 74                                     | 81170                   | 653                     | *                      | 278                          | 325                         | 277                         | 321                         | 456                          |                              | 287                      | 296                         | 390                         | 550                          |                              |
| HDP 140 2   | 18.0  | 67                                     | 83440                   | 606                     | *                      | 280                          | 327                         | 279                         | 323                         | 458                          |                              | 289                      | 298                         | 392                         | 552                          |                              |
| HDP 140 2   | 20.1  | 60                                     | 76290                   | 498                     | *                      | 289                          | 336                         | 288                         | 332                         | 467                          |                              | 298                      | 307                         | 401                         | 561                          |                              |
| HDP 140 2   | 22.2  | 54                                     | 82930                   | 489                     | *                      | 291                          | 338                         | 290                         | 334                         | 469                          |                              | 300                      | 309                         | 403                         | 563                          |                              |
| HDP 140 2   | 24.9  | 48                                     | 82300                   | 432                     | 194                    | 292                          | 339                         | 291                         | 335                         | 470                          |                              | 301                      | 310                         | 404                         | 564                          |                              |
| HDP 140 3   | 25.1  | 48                                     | 77440                   | 412                     | *                      | 212                          | 245                         | 214                         | 245                         | 343                          | 413                          | 245                      | 227                         | 295                         | 411                          | 633                          |
| HDP 140 3   | 27.7  | 43                                     | 82440                   | 397                     | *                      | 213                          | 246                         | 215                         | 246                         | 344                          | 414                          | 246                      | 228                         | 296                         | 412                          | —                            |
| HDP 140 3   | 32.9  | 36                                     | 84810                   | 344                     | 148                    | 217                          | 250                         | 219                         | 250                         | 348                          | —                            | 250                      | 232                         | 300                         | 416                          | —                            |
| HDP 140 3   | 36.4  | 33                                     | 81890                   | 300                     | 149                    | 218                          | 251                         | 220                         | 251                         | 349                          | —                            | 251                      | 233                         | 301                         | —                            | —                            |
| HDP 140 3   | 41.1  | 29.2                                   | 84810                   | 275                     | 152                    | 221                          | 254                         | 223                         | 254                         | 352                          | —                            | 254                      | 236                         | 304                         | —                            | —                            |
| HDP 140 3   | 45.5  | 26.4                                   | 81480                   | 239                     | 152                    | 221                          | 254                         | 223                         | 254                         | —                            | —                            | 254                      | 236                         | 304                         | —                            | —                            |
| HDP 140 3   | 50.7  | 23.6                                   | 82170                   | 216                     | 154                    | 223                          | —                           | 225                         | —                           | —                            | —                            | 256                      | 238                         | —                           | —                            | —                            |
| HDP 140 3   | 56.2  | 21.4                                   | 81140                   | 193                     | 155                    | 224                          | —                           | 226                         | —                           | —                            | —                            | 257                      | 239                         | —                           | —                            | —                            |
| HDP 140 3   | 65.1  | 18.4                                   | 84810                   | 174                     | 165                    | 234                          | —                           | 236                         | —                           | —                            | —                            | 267                      | 249                         | —                           | —                            | —                            |
| HDP 140 3   | 72.0  | 16.7                                   | 82200                   | 152                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 81.3  | 14.8                                   | 84810                   | 139                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 90.0  | 13.3                                   | 85020                   | 126                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 100.3 | 12.0                                   | 82170                   | 109                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 111.0 | 10.8                                   | 87060                   | 105                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 124.7 | 9.6                                    | 78870                   | 84                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 141.6 | 8.5                                    | 84370                   | 81                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 160.0 | 7.5                                    | 84820                   | 72                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 177.0 | 6.8                                    | 87060                   | 67                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 197.3 | 6.1                                    | 81250                   | 56                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 225.0 | 5.3                                    | 87060                   | 53                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 250.8 | 4.8                                    | 80930                   | 44                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 277.5 | 4.3                                    | 87060                   | 43                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 315.9 | 3.8                                    | 84820                   | 37                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 349.6 | 3.4                                    | 87060                   | 34                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 401.6 | 3.0                                    | 84820                   | 29                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 444.4 | 2.7                                    | 87060                   | 27                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 495.3 | 2.4                                    | 82170                   | 23                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDP 140   |       |                               |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-------------------|----------------------|----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDP 140 2   | 8.4   | 120                           | 62910          | 821            | *                             | 330                   | 380                  | 401                  | 479                  | 722                   |                       | 333               | 342                  | 436                  | 596                   |                       |
| HDP 140 2   | 9.3   | 108                           | 69620          | 821            | *                             | 334                   | 384                  | 405                  | 483                  | 726                   |                       | 337               | 346                  | 440                  | 600                   |                       |
| HDP 140 2   | 9.9   | 101                           | 66470          | 731            | *                             | 347                   | 397                  | 418                  | 496                  | 739                   |                       | 350               | 359                  | 453                  | 613                   |                       |
| HDP 140 2   | 11.0  | 91                            | 73550          | 731            | *                             | 350                   | 400                  | 421                  | 499                  | 742                   |                       | 353               | 362                  | 456                  | 616                   |                       |
| HDP 140 2   | 13.0  | 77                            | 75390          | 632            | 263                           | 367                   | 417                  | 438                  | 516                  | 759                   |                       | 370               | 379                  | 473                  | 633                   |                       |
| HDP 140 2   | 14.4  | 69                            | 83420          | 632            | 266                           | 370                   | 420                  | 441                  | 519                  | 762                   | ●                     | 373               | 382                  | 476                  | 636                   | ●                     |
| HDP 140 2   | 16.3  | 61                            | 85730          | 575            | 276                           | 380                   | 430                  | 451                  | 529                  | 772                   |                       | 383               | 392                  | 486                  | 646                   |                       |
| HDP 140 2   | 18.0  | 56                            | 83000          | 503            | 278                           | 382                   | 432                  | 453                  | 531                  | —                     |                       | 385               | 394                  | 488                  | 648                   |                       |
| HDP 140 2   | 20.1  | 50                            | 80570          | 438            | 285                           | 389                   | 439                  | 460                  | —                    | —                     |                       | 392               | 401                  | 495                  | —                     |                       |
| HDP 140 2   | 22.2  | 45                            | 82520          | 405            | 286                           | 390                   | 440                  | 461                  | —                    | —                     |                       | 393               | 402                  | 496                  | —                     |                       |
| HDP 140 2   | 24.9  | 40                            | 82350          | 360            | 288                           | 392                   | —                    | 463                  | —                    | —                     |                       | 395               | 404                  | —                    | —                     |                       |
| HDP 140 3   | 25.1  | 40                            | 77440          | 344            | 217                           | 290                   | 325                  | 344                  | —                    | —                     | —                     | 319               | 301                  | 369                  | —                     | —                     |
| HDP 140 3   | 27.7  | 36                            | 82060          | 329            | 218                           | 291                   | 326                  | 345                  | —                    | —                     | —                     | 320               | 302                  | 370                  | —                     | —                     |
| HDP 140 3   | 32.9  | 30                            | 84810          | 287            | 221                           | 294                   | —                    | 348                  | —                    | —                     | —                     | 323               | 305                  | —                    | —                     | —                     |
| HDP 140 3   | 36.4  | 27.5                          | 81560          | 249            | 222                           | 295                   | —                    | 349                  | —                    | —                     | —                     | 324               | 306                  | —                    | —                     | —                     |
| HDP 140 3   | 41.1  | 24.3                          | 84810          | 229            | 224                           | 297                   | —                    | 351                  | —                    | —                     | —                     | 326               | 308                  | —                    | —                     | —                     |
| HDP 140 3   | 45.5  | 22.0                          | 81180          | 198            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 50.7  | 19.7                          | 82170          | 180            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 56.2  | 17.8                          | 81390          | 161            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 65.1  | 15.4                          | 84810          | 145            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 72.0  | 13.9                          | 84490          | 131            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 81.3  | 12.3                          | 84810          | 116            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 90.0  | 11.1                          | 87060          | 108            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 100.3 | 10.0                          | 82030          | 91             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 111.0 | 9.0                           | 87060          | 87             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 3   | 124.7 | 8.0                           | 78870          | 70             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 141.6 | 7.1                           | 87060          | 70             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 160.0 | 6.3                           | 84820          | 60             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 177.0 | 5.6                           | 87060          | 56             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 197.3 | 5.1                           | 81010          | 47             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 225.0 | 4.4                           | 87060          | 44             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 250.8 | 4.0                           | 81280          | 37             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 277.5 | 3.6                           | 87060          | 36             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 315.9 | 3.2                           | 84820          | 30             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 349.6 | 2.9                           | 87060          | 28             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 401.6 | 2.5                           | 84820          | 24             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 444.4 | 2.3                           | 87060          | 22             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDP 140 4   | 495.3 | 2.0                           | 82170          | 18.8           | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |

\*  BONFIGLIOLI TECHNICAL SERVICE

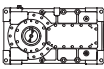
— Thermal verification not necessary





**HDP**

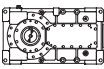
**HDP 140**  $n_1 = 1000 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                              |                             |                             |                             |                              |                              |                          |                             |                             |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|--------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] |
| HDP 140 2   | 8.4   | 120                                    | 62910                   | 821                     | *                      | *                            | *                           | *                           | *                           | 416                          |                              | *                        | *                           | 350                         | 510                          |                              |
| HDP 140 2   | 9.3   | 108                                    | 69620                   | 821                     | *                      | *                            | *                           | *                           | *                           | 420                          |                              | *                        | *                           | 354                         | 514                          |                              |
| HDP 140 2   | 9.9   | 101                                    | 66470                   | 731                     | *                      | *                            | *                           | *                           | 298                         | 433                          |                              | *                        | *                           | 367                         | 527                          |                              |
| HDP 140 2   | 11.0  | 91                                     | 73550                   | 731                     | *                      | *                            | *                           | *                           | 301                         | 436                          |                              | *                        | *                           | 370                         | 530                          |                              |
| HDP 140 2   | 13.0  | 77                                     | 75390                   | 632                     | *                      | 254                          | 291                         | 275                         | 319                         | 454                          |                              | 285                      | 294                         | 388                         | 548                          |                              |
| HDP 140 2   | 14.4  | 69                                     | 83420                   | 632                     | *                      | 256                          | 293                         | 277                         | 321                         | 456                          | ⊖                            | 287                      | 296                         | 390                         | 550                          | ⊖                            |
| HDP 140 2   | 16.3  | 61                                     | 85730                   | 575                     | *                      | 266                          | 303                         | 287                         | 331                         | 466                          |                              | 297                      | 306                         | 400                         | 560                          |                              |
| HDP 140 2   | 18.0  | 56                                     | 83000                   | 503                     | *                      | 268                          | 305                         | 289                         | 333                         | 468                          |                              | 299                      | 308                         | 402                         | 562                          |                              |
| HDP 140 2   | 20.1  | 50                                     | 80570                   | 438                     | 199                    | 275                          | 312                         | 296                         | 340                         | 475                          |                              | 306                      | 315                         | 409                         | 569                          |                              |
| HDP 140 2   | 22.2  | 45                                     | 82520                   | 405                     | 200                    | 276                          | 313                         | 297                         | 341                         | 476                          |                              | 307                      | 316                         | 410                         | —                            |                              |
| HDP 140 2   | 24.9  | 40                                     | 82350                   | 360                     | 202                    | 278                          | 315                         | 299                         | 343                         | 478                          |                              | 309                      | 318                         | 412                         | —                            |                              |
| HDP 140 3   | 25.1  | 40                                     | 77440                   | 344                     | 150                    | 203                          | 229                         | 221                         | 252                         | 350                          | —                            | 252                      | 234                         | 302                         | 418                          | —                            |
| HDP 140 3   | 27.7  | 36                                     | 82060                   | 329                     | 151                    | 204                          | 230                         | 222                         | 253                         | 351                          | —                            | 253                      | 235                         | 303                         | 419                          | —                            |
| HDP 140 3   | 32.9  | 30                                     | 84810                   | 287                     | 155                    | 208                          | 234                         | 226                         | 257                         | 355                          | —                            | 257                      | 239                         | 307                         | —                            | —                            |
| HDP 140 3   | 36.4  | 27.5                                   | 81560                   | 249                     | 155                    | 208                          | 234                         | 226                         | 257                         | —                            | —                            | 257                      | 239                         | 307                         | —                            | —                            |
| HDP 140 3   | 41.1  | 24.3                                   | 84810                   | 229                     | 157                    | 210                          | 236                         | 228                         | 259                         | —                            | —                            | 259                      | 241                         | —                           | —                            | —                            |
| HDP 140 3   | 45.5  | 22.0                                   | 81180                   | 198                     | 158                    | 211                          | —                           | 229                         | —                           | —                            | —                            | 260                      | 242                         | —                           | —                            | —                            |
| HDP 140 3   | 50.7  | 19.7                                   | 82170                   | 180                     | 159                    | 212                          | —                           | 230                         | —                           | —                            | —                            | 261                      | 243                         | —                           | —                            | —                            |
| HDP 140 3   | 56.2  | 17.8                                   | 81390                   | 161                     | 160                    | 213                          | —                           | 231                         | —                           | —                            | —                            | 262                      | 244                         | —                           | —                            | —                            |
| HDP 140 3   | 65.1  | 15.4                                   | 84810                   | 145                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 72.0  | 13.9                                   | 84490                   | 131                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 81.3  | 12.3                                   | 84810                   | 116                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 90.0  | 11.1                                   | 87060                   | 108                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 100.3 | 10.0                                   | 82030                   | 91                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 111.0 | 9.0                                    | 87060                   | 87                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 3   | 124.7 | 8.0                                    | 78870                   | 70                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 141.6 | 7.1                                    | 87060                   | 70                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 160.0 | 6.3                                    | 84820                   | 60                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 177.0 | 5.6                                    | 87060                   | 56                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 197.3 | 5.1                                    | 81010                   | 47                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 225.0 | 4.4                                    | 87060                   | 44                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 250.8 | 4.0                                    | 81280                   | 37                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 277.5 | 3.6                                    | 87060                   | 36                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 315.9 | 3.2                                    | 84820                   | 30                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 349.6 | 2.9                                    | 87060                   | 28                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 401.6 | 2.5                                    | 84820                   | 24                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 444.4 | 2.3                                    | 87060                   | 22                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |
| HDP 140 4   | 495.3 | 2.0                                    | 82170                   | 18.8                    | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                        | —                           | —                           | —                            | —                            |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



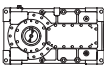
| HDP 150   |       |                               |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |
| HDP 150 2   | 7.9   | 228                           | 74450          | 1848           | *                             | *                     | *                    | *                    | *                    | *                     | 794                   |                       | *                    | *                    | *                     | 799                   |                       |
| HDP 150 2   | 9.3   | 194                           | 87230          | 1848           | *                             | *                     | *                    | *                    | *                    | *                     | 813                   |                       | *                    | *                    | *                     | 818                   |                       |
| HDP 150 2   | 10.1  | 178                           | 92670          | 1803           | *                             | *                     | *                    | *                    | *                    | *                     | 821                   |                       | *                    | *                    | *                     | 826                   |                       |
| HDP 150 2   | 11.1  | 163                           | 91890          | 1630           | *                             | *                     | *                    | *                    | *                    | 716                   | 891                   |                       | *                    | *                    | *                     | 896                   |                       |
| HDP 150 2   | 13.0  | 139                           | 100380         | 1520           | *                             | *                     | *                    | *                    | *                    | 728                   | 903                   | ●                     | *                    | *                    | *                     | 908                   | ●                     |
| HDP 150 2   | 14.1  | 128                           | 102730         | 1428           | *                             | *                     | *                    | *                    | *                    | 733                   | 908                   |                       | *                    | *                    | 607                   | 913                   |                       |
| HDP 150 2   | 15.4  | 117                           | 97390          | 1244           | *                             | *                     | 590                  | *                    | 535                  | 778                   | 953                   |                       | *                    | *                    | 652                   | 958                   |                       |
| HDP 150 2   | 18.0  | 100                           | 111710         | 1217           | *                             | 505                   | 598                  | *                    | 543                  | 786                   | 961                   |                       | *                    | 500                  | 660                   | 966                   |                       |
| HDP 150 2   | 19.6  | 92                            | 110820         | 1109           | *                             | 508                   | 601                  | 468                  | 546                  | 789                   | 964                   |                       | *                    | 503                  | 663                   | 969                   |                       |
| HDP 150 3   | 21.5  | 84                            | 87340          | 813            | *                             | 353                   | 418                  | 333                  | 390                  | 566                   | 692                   | 756                   | *                    | 358                  | 474                   | 696                   | 906                   |
| HDP 150 3   | 25.2  | 71                            | 102350         | 813            | *                             | 357                   | 422                  | 337                  | 394                  | 570                   | 696                   | 760                   | *                    | 362                  | 478                   | 700                   | 910                   |
| HDP 150 3   | 27.4  | 66                            | 109620         | 800            | *                             | 359                   | 424                  | 339                  | 396                  | 572                   | 698                   | 762                   | *                    | 364                  | 480                   | 702                   | 912                   |
| HDP 150 3   | 29.9  | 60                            | 117200         | 785            | *                             | 371                   | 436                  | 351                  | 408                  | 584                   | 710                   | 774                   | *                    | 376                  | 492                   | 714                   | 924                   |
| HDP 150 3   | 35.0  | 51                            | 112560         | 644            | *                             | 373                   | 438                  | 353                  | 410                  | 586                   | 712                   | —                     | 310                  | 378                  | 494                   | 716                   | —                     |
| HDP 150 3   | 38.1  | 47                            | 108590         | 570            | *                             | 375                   | 440                  | 355                  | 412                  | 588                   | —                     | —                     | 312                  | 380                  | 496                   | 718                   | —                     |
| HDP 150 3   | 43.5  | 41                            | 117200         | 540            | 265                           | 412                   | 477                  | 392                  | 449                  | 625                   | —                     | —                     | 349                  | 417                  | 533                   | 755                   | —                     |
| HDP 150 3   | 50.9  | 35                            | 111470         | 438            | 267                           | 414                   | 479                  | 394                  | 451                  | —                     | —                     | —                     | 351                  | 419                  | 535                   | —                     | —                     |
| HDP 150 3   | 55.5  | 32                            | 107560         | 388            | 267                           | 414                   | —                    | 394                  | —                    | —                     | —                     | —                     | 351                  | 419                  | —                     | —                     | —                     |
| HDP 150 3   | 60.4  | 29.8                          | 117200         | 389            | 273                           | 420                   | —                    | 400                  | —                    | —                     | —                     | —                     | 357                  | 425                  | —                     | —                     | —                     |
| HDP 150 3   | 70.8  | 25.4                          | 110640         | 313            | 274                           | 421                   | —                    | 401                  | —                    | —                     | —                     | —                     | 358                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 77.0  | 23.4                          | 106780         | 278            | 274                           | 421                   | —                    | 401                  | —                    | —                     | —                     | —                     | 358                  | —                    | —                     | —                     | —                     |
| HDP 150 4   | 89.0  | 20.2                          | 110220         | 253            | 191                           | 303                   | —                    | 291                  | —                    | —                     | —                     | —                     | 257                  | —                    | —                     | —                     | —                     |
| HDP 150 4   | 104.3 | 17.3                          | 111430         | 218            | 191                           | 303                   | —                    | 291                  | —                    | —                     | —                     | —                     | 257                  | —                    | —                     | —                     | —                     |
| HDP 150 4   | 113.6 | 15.9                          | 109050         | 196            | 192                           | 304                   | —                    | 292                  | —                    | —                     | —                     | —                     | 258                  | —                    | —                     | —                     | —                     |
| HDP 150 4   | 123.6 | 14.6                          | 117200         | 194            | 193                           | 305                   | —                    | 293                  | —                    | —                     | —                     | —                     | 259                  | —                    | —                     | —                     | —                     |
| HDP 150 4   | 144.9 | 12.4                          | 117090         | 165            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 157.8 | 11.4                          | 114590         | 148            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 170.9 | 10.5                          | 114510         | 137            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 200.3 | 9.0                           | 117090         | 119            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 218.1 | 8.3                           | 114780         | 108            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 237.5 | 7.6                           | 117200         | 101            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 278.3 | 6.5                           | 117090         | 86             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 303.1 | 5.9                           | 114780         | 77             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |

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— Thermal verification not necessary



**HDP**

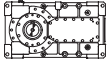
| HDP 150   |       |                               |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |     |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |     |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |     |
| HDP 150 2   | 7.9   | 228                           | 74450          | 1848           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | *                     |                       |     |
| HDP 150 2   | 9.3   | 194                           | 87230          | 1848           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | *                     |                       |     |
| HDP 150 2   | 10.1  | 178                           | 92670          | 1803           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | *                     |                       |     |
| HDP 150 2   | 11.1  | 163                           | 91890          | 1630           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | 785                   |                       |     |
| HDP 150 2   | 13.0  | 139                           | 100380         | 1520           | *                             | *                     | *                    | *                    | *                    | *                     | *                     | ●                     | *                    | *                    | *                     | 797                   | ●                     |     |
| HDP 150 2   | 14.1  | 128                           | 102730         | 1428           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | 803                   |                       |     |
| HDP 150 2   | 15.4  | 117                           | 97390          | 1244           | *                             | *                     | *                    | *                    | *                    | *                     | 544                   |                       | *                    | *                    | 541                   | 847                   |                       |     |
| HDP 150 2   | 18.0  | 100                           | 111710         | 1217           | *                             | *                     | *                    | *                    | *                    | *                     | 552                   |                       | *                    | *                    | 549                   | 855                   |                       |     |
| HDP 150 2   | 19.6  | 92                            | 110820         | 1109           | *                             | *                     | *                    | *                    | *                    | 459                   | 556                   |                       | *                    | *                    | 553                   | 859                   |                       |     |
| HDP 150 3   | 21.5  | 84                            | 87340          | 813            | *                             | *                     | *                    | *                    | *                    | *                     | 391                   | 421                   | *                    | *                    | 389                   | 611                   | 821                   |     |
| HDP 150 3   | 25.2  | 71                            | 102350         | 813            | *                             | *                     | *                    | *                    | *                    | *                     | 395                   | 425                   | *                    | *                    | 393                   | 615                   | 825                   |     |
| HDP 150 3   | 27.4  | 66                            | 109620         | 800            | *                             | *                     | *                    | *                    | *                    | *                     | 327                   | 397                   | 427                  | *                    | *                     | 395                   | 617                   | 827 |
| HDP 150 3   | 29.9  | 60                            | 117200         | 785            | *                             | *                     | *                    | *                    | *                    | *                     | 339                   | 409                   | 439                  | *                    | *                     | 407                   | 629                   | 839 |
| HDP 150 3   | 35.0  | 51                            | 112560         | 644            | *                             | *                     | 297                  | *                    | *                    | 342                   | 412                   | 442                   | *                    | 294                  | 410                   | 632                   | 842                   |     |
| HDP 150 3   | 38.1  | 47                            | 108590         | 570            | *                             | 251                   | 298                  | *                    | 245                  | 343                   | 413                   | 443                   | *                    | 295                  | 411                   | 633                   | —                     |     |
| HDP 150 3   | 43.5  | 41                            | 117200         | 540            | *                             | 288                   | 335                  | 251                  | 282                  | 380                   | 450                   | 480                   | 264                  | 332                  | 448                   | 670                   | —                     |     |
| HDP 150 3   | 50.9  | 35                            | 111470         | 438            | 182                           | 290                   | 337                  | 253                  | 284                  | 382                   | 452                   | —                     | 266                  | 334                  | 450                   | —                     | —                     |     |
| HDP 150 3   | 55.5  | 32                            | 107560         | 388            | 183                           | 291                   | 338                  | 254                  | 285                  | 383                   | 453                   | —                     | 267                  | 335                  | 451                   | —                     | —                     |     |
| HDP 150 3   | 60.4  | 29.8                          | 117200         | 389            | 188                           | 296                   | 343                  | 259                  | 290                  | 388                   | 458                   | —                     | 272                  | 340                  | 456                   | —                     | —                     |     |
| HDP 150 3   | 70.8  | 25.4                          | 110640         | 313            | 189                           | 297                   | 344                  | 260                  | 291                  | 389                   | —                     | —                     | 273                  | 341                  | —                     | —                     | —                     |     |
| HDP 150 3   | 77.0  | 23.4                          | 106780         | 278            | 190                           | 298                   | —                    | 261                  | 292                  | —                     | —                     | —                     | 274                  | 342                  | —                     | —                     | —                     |     |
| HDP 150 4   | 89.0  | 20.2                          | 110220         | 253            | 126                           | 208                   | 244                  | 181                  | 206                  | 283                   | —                     | —                     | 192                  | 245                  | 336                   | —                     | —                     |     |
| HDP 150 4   | 104.3 | 17.3                          | 111430         | 218            | 127                           | 209                   | 245                  | 182                  | 207                  | 284                   | —                     | —                     | 193                  | 246                  | —                     | —                     | —                     |     |
| HDP 150 4   | 113.6 | 15.9                          | 109050         | 196            | 127                           | 209                   | —                    | 182                  | 207                  | —                     | —                     | —                     | 193                  | 246                  | —                     | —                     | —                     |     |
| HDP 150 4   | 123.6 | 14.6                          | 117200         | 194            | 129                           | 211                   | —                    | 184                  | 209                  | —                     | —                     | —                     | 195                  | —                    | —                     | —                     | —                     |     |
| HDP 150 4   | 144.9 | 12.4                          | 117090         | 165            | 129                           | 211                   | —                    | 184                  | —                    | —                     | —                     | —                     | 195                  | —                    | —                     | —                     | —                     |     |
| HDP 150 4   | 157.8 | 11.4                          | 114590         | 148            | 129                           | 211                   | —                    | 184                  | —                    | —                     | —                     | —                     | 195                  | —                    | —                     | —                     | —                     |     |
| HDP 150 4   | 170.9 | 10.5                          | 114510         | 137            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |     |
| HDP 150 4   | 200.3 | 9.0                           | 117090         | 119            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |     |
| HDP 150 4   | 218.1 | 8.3                           | 114780         | 108            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |     |
| HDP 150 4   | 237.5 | 7.6                           | 117200         | 101            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |     |
| HDP 150 4   | 278.3 | 6.5                           | 117090         | 86             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |     |
| HDP 150 4   | 303.1 | 5.9                           | 114780         | 77             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |     |

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— Thermal verification not necessary



HDP

| HDP 150   |       |  |                         |                         | n <sub>1</sub> = 1500 min <sup>-1</sup> |                              |                             |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|---|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                              |                             |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDP 150 2   | 7.9   | 190                                    | 78630                   | 1627                    | *                                       | *                            | *                           | *                           | *                           | 685                          | 860                          |                              | *                           | *                           | *                            | 865                          |                              |
| HDP 150 2   | 9.3   | 162                                    | 92140                   | 1627                    | *                                       | *                            | *                           | *                           | *                           | 700                          | 875                          |                              | *                           | *                           | *                            | 880                          |                              |
| HDP 150 2   | 10.1  | 149                                    | 97880                   | 1587                    | *                                       | *                            | *                           | *                           | *                           | 706                          | 881                          |                              | *                           | *                           | *                            | 886                          |                              |
| HDP 150 2   | 11.1  | 136                                    | 97060                   | 1435                    | *                                       | *                            | *                           | *                           | *                           | 760                          | 935                          |                              | *                           | *                           | 634                          | 940                          |                              |
| HDP 150 2   | 13.0  | 116                                    | 106020                  | 1338                    | *                                       | *                            | 541                         | *                           | *                           | 769                          | 944                          | ●                            | *                           | *                           | 643                          | 949                          | ●                            |
| HDP 150 2   | 14.1  | 106                                    | 108500                  | 1257                    | *                                       | *                            | 545                         | *                           | 530                         | 773                          | 948                          |                              | *                           | *                           | 647                          | 953                          |                              |
| HDP 150 2   | 15.4  | 98                                     | 102870                  | 1095                    | *                                       | 498                          | 579                         | 486                         | 564                         | 807                          | 982                          |                              | *                           | 521                         | 681                          | 987                          |                              |
| HDP 150 2   | 18.0  | 83                                     | 114210                  | 1037                    | *                                       | 504                          | 585                         | 492                         | 570                         | 813                          | 988                          |                              | 433                         | 527                         | 687                          | 993                          |                              |
| HDP 150 2   | 19.6  | 76                                     | 110150                  | 919                     | *                                       | 507                          | 588                         | 495                         | 573                         | 816                          | 991                          |                              | 436                         | 530                         | 690                          | 996                          |                              |
| HDP 150 3   | 21.5  | 70                                     | 92560                   | 718                     | *                                       | 359                          | 415                         | 358                         | 415                         | 591                          | 717                          | 781                          | 315                         | 383                         | 499                          | 721                          | —                            |
| HDP 150 3   | 25.2  | 60                                     | 108460                  | 718                     | *                                       | 362                          | 418                         | 361                         | 418                         | 594                          | 720                          | —                            | 318                         | 386                         | 502                          | 724                          | —                            |
| HDP 150 3   | 27.4  | 55                                     | 109030                  | 663                     | *                                       | 363                          | 419                         | 362                         | 419                         | 595                          | 721                          | —                            | 319                         | 387                         | 503                          | 725                          | —                            |
| HDP 150 3   | 29.9  | 50                                     | 117200                  | 654                     | *                                       | 373                          | 429                         | 372                         | 429                         | 605                          | 731                          | —                            | 329                         | 397                         | 513                          | 735                          | —                            |
| HDP 150 3   | 35.0  | 43                                     | 112010                  | 534                     | 247                                     | 375                          | 431                         | 374                         | 431                         | 607                          | —                            | —                            | 331                         | 399                         | 515                          | 737                          | —                            |
| HDP 150 3   | 38.1  | 39                                     | 108070                  | 473                     | 247                                     | 375                          | 431                         | 374                         | 431                         | 607                          | —                            | —                            | 331                         | 399                         | 515                          | —                            | —                            |
| HDP 150 3   | 43.5  | 35                                     | 117200                  | 450                     | 276                                     | 404                          | 460                         | 403                         | 460                         | —                            | —                            | —                            | 360                         | 428                         | 544                          | —                            | —                            |
| HDP 150 3   | 50.9  | 29.5                                   | 111000                  | 364                     | 278                                     | 406                          | —                           | 405                         | —                           | —                            | —                            | —                            | 362                         | 430                         | —                            | —                            | —                            |
| HDP 150 3   | 55.5  | 27.0                                   | 107110                  | 322                     | 278                                     | 406                          | —                           | 405                         | —                           | —                            | —                            | —                            | 362                         | —                           | —                            | —                            | —                            |
| HDP 150 3   | 60.4  | 24.8                                   | 117200                  | 324                     | 282                                     | 410                          | —                           | 409                         | —                           | —                            | —                            | —                            | 366                         | —                           | —                            | —                            | —                            |
| HDP 150 3   | 70.8  | 21.2                                   | 110230                  | 260                     | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 3   | 77.0  | 19.5                                   | 106390                  | 230                     | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 89.0  | 16.9                                   | 116800                  | 224                     | 202                                     | 299                          | —                           | 302                         | —                           | —                            | —                            | —                            | 268                         | —                           | —                            | —                            | —                            |
| HDP 150 4   | 104.3 | 14.4                                   | 116060                  | 190                     | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 113.6 | 13.2                                   | 112070                  | 168                     | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 123.6 | 12.1                                   | 117200                  | 161                     | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 144.9 | 10.4                                   | 117090                  | 138                     | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 157.8 | 9.5                                    | 114780                  | 124                     | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 170.9 | 8.8                                    | 116800                  | 116                     | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 200.3 | 7.5                                    | 117090                  | 100                     | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 218.1 | 6.9                                    | 114780                  | 90                      | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 237.5 | 6.3                                    | 117200                  | 84                      | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 278.3 | 5.4                                    | 117090                  | 72                      | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 303.1 | 4.9                                    | 114780                  | 64                      | —                                       | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

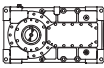
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— Thermal verification not necessary



**HDP**

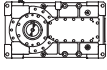
**HDP 150** **n<sub>1</sub> = 1500 min<sup>-1</sup>**

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                              |                             |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDP 150 2   | 7.9   | 190                                    | 78630                   | 1627                    | *                      | *                            | *                           | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 755                          |                              |
| HDP 150 2   | 9.3   | 162                                    | 92140                   | 1627                    | *                      | *                            | *                           | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 769                          |                              |
| HDP 150 2   | 10.1  | 149                                    | 97880                   | 1587                    | *                      | *                            | *                           | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 775                          |                              |
| HDP 150 2   | 11.1  | 136                                    | 97060                   | 1435                    | *                      | *                            | *                           | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 829                          |                              |
| HDP 150 2   | 13.0  | 116                                    | 106020                  | 1338                    | *                      | *                            | *                           | *                           | *                           | *                            | 535                          | ●                            | *                           | *                           | *                            | 838                          | ●                            |
| HDP 150 2   | 14.1  | 106                                    | 108500                  | 1257                    | *                      | *                            | *                           | *                           | *                           | *                            | 539                          |                              | *                           | *                           | 536                          | 842                          |                              |
| HDP 150 2   | 15.4  | 98                                     | 102870                  | 1095                    | *                      | *                            | *                           | *                           | *                           | 477                          | 574                          |                              | *                           | *                           | 571                          | 877                          |                              |
| HDP 150 2   | 18.0  | 83                                     | 114210                  | 1037                    | *                      | *                            | *                           | *                           | *                           | 483                          | 580                          |                              | *                           | 417                         | 577                          | 883                          |                              |
| HDP 150 2   | 19.6  | 76                                     | 110150                  | 919                     | *                      | *                            | 406                         | *                           | *                           | 485                          | 582                          |                              | *                           | 419                         | 579                          | 885                          |                              |
| HDP 150 3   | 21.5  | 70                                     | 92560                   | 718                     | *                      | *                            | *                           | *                           | *                           | 346                          | 416                          | 446                          | *                           | 298                         | 414                          | 636                          | 846                          |
| HDP 150 3   | 25.2  | 60                                     | 108460                  | 718                     | *                      | *                            | *                           | *                           | *                           | 349                          | 419                          | 449                          | *                           | 301                         | 417                          | 639                          | 849                          |
| HDP 150 3   | 27.4  | 55                                     | 109030                  | 663                     | *                      | *                            | 285                         | *                           | *                           | 350                          | 420                          | 450                          | *                           | 302                         | 418                          | 640                          | 850                          |
| HDP 150 3   | 29.9  | 50                                     | 117200                  | 654                     | *                      | *                            | 295                         | *                           | 262                         | 360                          | 430                          | 460                          | *                           | 312                         | 428                          | 650                          | 860                          |
| HDP 150 3   | 35.0  | 43                                     | 112010                  | 534                     | *                      | 256                          | 297                         | 233                         | 264                         | 362                          | 432                          | 462                          | 246                         | 314                         | 430                          | 652                          | —                            |
| HDP 150 3   | 38.1  | 39                                     | 108070                  | 473                     | *                      | 257                          | 298                         | 234                         | 265                         | 363                          | 433                          | 463                          | 247                         | 315                         | 431                          | 653                          | —                            |
| HDP 150 3   | 43.5  | 35                                     | 117200                  | 450                     | 191                    | 285                          | 326                         | 262                         | 293                         | 391                          | 461                          | —                            | 275                         | 343                         | 459                          | —                            | —                            |
| HDP 150 3   | 50.9  | 29.5                                   | 111000                  | 364                     | 193                    | 287                          | 328                         | 264                         | 295                         | 393                          | —                            | —                            | 277                         | 345                         | 461                          | —                            | —                            |
| HDP 150 3   | 55.5  | 27.0                                   | 107110                  | 322                     | 193                    | 287                          | 328                         | 264                         | 295                         | 393                          | —                            | —                            | 277                         | 345                         | —                            | —                            | —                            |
| HDP 150 3   | 60.4  | 24.8                                   | 117200                  | 324                     | 197                    | 291                          | 332                         | 268                         | 299                         | 397                          | —                            | —                            | 281                         | 349                         | —                            | —                            | —                            |
| HDP 150 3   | 70.8  | 21.2                                   | 110230                  | 260                     | 198                    | 292                          | —                           | 269                         | —                           | —                            | —                            | —                            | 282                         | —                           | —                            | —                            | —                            |
| HDP 150 3   | 77.0  | 19.5                                   | 106390                  | 230                     | 199                    | 293                          | —                           | 270                         | —                           | —                            | —                            | —                            | 283                         | —                           | —                            | —                            | —                            |
| HDP 150 4   | 89.0  | 16.9                                   | 116800                  | 224                     | 137                    | 208                          | 240                         | 192                         | 217                         | 294                          | —                            | —                            | 203                         | 256                         | —                            | —                            | —                            |
| HDP 150 4   | 104.3 | 14.4                                   | 116060                  | 190                     | 138                    | 209                          | —                           | 193                         | —                           | —                            | —                            | —                            | 204                         | —                           | —                            | —                            | —                            |
| HDP 150 4   | 113.6 | 13.2                                   | 112070                  | 168                     | 138                    | 209                          | —                           | 193                         | —                           | —                            | —                            | —                            | 204                         | —                           | —                            | —                            | —                            |
| HDP 150 4   | 123.6 | 12.1                                   | 117200                  | 161                     | 139                    | 210                          | —                           | 194                         | —                           | —                            | —                            | —                            | 205                         | —                           | —                            | —                            | —                            |
| HDP 150 4   | 144.9 | 10.4                                   | 117090                  | 138                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 157.8 | 9.5                                    | 114780                  | 124                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 170.9 | 8.8                                    | 116800                  | 116                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 200.3 | 7.5                                    | 117090                  | 100                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 218.1 | 6.9                                    | 114780                  | 90                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 237.5 | 6.3                                    | 117200                  | 84                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 278.3 | 5.4                                    | 117090                  | 72                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 150 4   | 303.1 | 4.9                                    | 114780                  | 64                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

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— Thermal verification not necessary



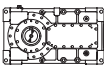
| HDP 150   |       |                               |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |
| HDP 150 2   | 7.9   | 152                           | 84080          | 1392           | *                             | *                     | *                    | *                    | *                    | 735                   | 910                   |                       | *                    | *                    | 609                   | 915                   |                       |
| HDP 150 2   | 9.3   | 130                           | 98520          | 1392           | *                             | *                     | *                    | *                    | *                    | 746                   | 921                   |                       | *                    | *                    | 620                   | 926                   |                       |
| HDP 150 2   | 10.1  | 119                           | 104660         | 1357           | *                             | *                     | *                    | *                    | *                    | 751                   | 926                   |                       | *                    | *                    | 625                   | 931                   |                       |
| HDP 150 2   | 11.1  | 108                           | 103780         | 1227           | *                             | *                     | 538                  | *                    | 550                  | 793                   | 968                   |                       | *                    | 507                  | 667                   | 973                   |                       |
| HDP 150 2   | 13.0  | 93                            | 113360         | 1144           | *                             | 472                   | 545                  | 479                  | 557                  | 800                   | 975                   | ⊖                     | *                    | 514                  | 674                   | 980                   | ⊖                     |
| HDP 150 2   | 14.1  | 85                            | 110530         | 1024           | *                             | 475                   | 548                  | 482                  | 560                  | 803                   | 978                   |                       | 423                  | 517                  | 677                   | 983                   |                       |
| HDP 150 2   | 15.4  | 78                            | 109990         | 936            | *                             | 501                   | 574                  | 508                  | 586                  | 829                   | 1004                  |                       | 449                  | 543                  | 703                   | 1009                  |                       |
| HDP 150 2   | 18.0  | 67                            | 113410         | 824            | 338                           | 506                   | 579                  | 513                  | 591                  | 834                   | —                     |                       | 454                  | 548                  | 708                   | 1014                  |                       |
| HDP 150 2   | 19.6  | 61                            | 109400         | 730            | 340                           | 508                   | 581                  | 515                  | 593                  | 836                   | —                     |                       | 456                  | 550                  | 710                   | 1016                  |                       |
| HDP 150 3   | 21.5  | 56                            | 98970          | 614            | 250                           | 365                   | 416                  | 377                  | 434                  | 610                   | 736                   | —                     | 334                  | 402                  | 518                   | 740                   | —                     |
| HDP 150 3   | 25.2  | 48                            | 112320         | 595            | 252                           | 367                   | 418                  | 379                  | 436                  | 612                   | —                     | —                     | 336                  | 404                  | 520                   | 742                   | —                     |
| HDP 150 3   | 27.4  | 44                            | 108370         | 527            | 253                           | 368                   | 419                  | 380                  | 437                  | 613                   | —                     | —                     | 337                  | 405                  | 521                   | 743                   | —                     |
| HDP 150 3   | 29.9  | 40                            | 117200         | 524            | 260                           | 375                   | 426                  | 387                  | 444                  | 620                   | —                     | —                     | 344                  | 412                  | 528                   | —                     | —                     |
| HDP 150 3   | 35.0  | 34                            | 111390         | 425            | 262                           | 377                   | 428                  | 389                  | 446                  | —                     | —                     | —                     | 346                  | 414                  | 530                   | —                     | —                     |
| HDP 150 3   | 38.1  | 31                            | 107480         | 376            | 262                           | 377                   | —                    | 389                  | —                    | —                     | —                     | —                     | 346                  | 414                  | —                     | —                     | —                     |
| HDP 150 3   | 43.5  | 27.6                          | 117200         | 360            | 285                           | 400                   | —                    | 412                  | —                    | —                     | —                     | —                     | 369                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 50.9  | 23.6                          | 110470         | 290            | 286                           | 401                   | —                    | 413                  | —                    | —                     | —                     | —                     | 370                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 55.5  | 21.6                          | 106610         | 257            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 3   | 60.4  | 19.9                          | 117200         | 259            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 3   | 70.8  | 17.0                          | 113250         | 214            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 3   | 77.0  | 15.6                          | 109330         | 189            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 89.0  | 13.5                          | 116800         | 179            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 104.3 | 11.5                          | 117090         | 153            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 113.6 | 10.6                          | 114780         | 138            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 123.6 | 9.7                           | 117200         | 129            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 144.9 | 8.3                           | 117090         | 110            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 157.8 | 7.6                           | 114780         | 99             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 170.9 | 7.0                           | 116800         | 93             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 200.3 | 6.0                           | 117090         | 80             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 218.1 | 5.5                           | 114780         | 72             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 237.5 | 5.1                           | 117200         | 67             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 278.3 | 4.3                           | 117090         | 57             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 303.1 | 4.0                           | 114780         | 52             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |

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— Thermal verification not necessary



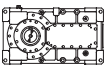
**HDP**

| HDP 150   |       |                               |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |
| HDP 150 2   | 7.9   | 152                           | 84080          | 1392           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | 804                   |                       |
| HDP 150 2   | 9.3   | 130                           | 98520          | 1392           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | 815                   |                       |
| HDP 150 2   | 10.1  | 119                           | 104660         | 1357           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | 820                   |                       |
| HDP 150 2   | 11.1  | 108                           | 103780         | 1227           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | 556                   | 862                   |                       |
| HDP 150 2   | 13.0  | 93                            | 113360         | 1144           | *                             | *                     | *                    | *                    | *                    | 469                   | 566                   | ⊖                     | *                    | *                    | 563                   | 869                   | ⊖                     |
| HDP 150 2   | 14.1  | 85                            | 110530         | 1024           | *                             | *                     | *                    | *                    | *                    | 472                   | 569                   |                       | *                    | *                    | 566                   | 872                   |                       |
| HDP 150 2   | 15.4  | 78                            | 109990         | 936            | *                             | *                     | 400                  | *                    | *                    | 499                   | 596                   |                       | *                    | 433                  | 593                   | 899                   |                       |
| HDP 150 2   | 18.0  | 67                            | 113410         | 824            | *                             | 350                   | 404                  | *                    | 368                  | 503                   | 600                   |                       | 343                  | 437                  | 597                   | 903                   |                       |
| HDP 150 2   | 19.6  | 61                            | 109400         | 730            | *                             | 353                   | 407                  | 327                  | 371                  | 506                   | 603                   |                       | 346                  | 440                  | 600                   | 906                   |                       |
| HDP 150 3   | 21.5  | 56                            | 98970          | 614            | *                             | 250                   | 286                  | *                    | 267                  | 365                   | 435                   | 465                   | 249                  | 317                  | 433                   | 655                   | —                     |
| HDP 150 3   | 25.2  | 48                            | 112320         | 595            | *                             | 252                   | 288                  | 238                  | 269                  | 367                   | 437                   | 467                   | 251                  | 319                  | 435                   | 657                   | —                     |
| HDP 150 3   | 27.4  | 44                            | 108370         | 527            | *                             | 253                   | 289                  | 239                  | 270                  | 368                   | 438                   | 468                   | 252                  | 320                  | 436                   | 658                   | —                     |
| HDP 150 3   | 29.9  | 40                            | 117200         | 524            | *                             | 260                   | 296                  | 246                  | 277                  | 375                   | 445                   | 475                   | 259                  | 327                  | 443                   | 665                   | —                     |
| HDP 150 3   | 35.0  | 34                            | 111390         | 425            | 177                           | 262                   | 298                  | 248                  | 279                  | 377                   | 447                   | —                     | 261                  | 329                  | 445                   | —                     | —                     |
| HDP 150 3   | 38.1  | 31                            | 107480         | 376            | 178                           | 263                   | 299                  | 249                  | 280                  | 378                   | —                     | —                     | 262                  | 330                  | 446                   | —                     | —                     |
| HDP 150 3   | 43.5  | 27.6                          | 117200         | 360            | 200                           | 285                   | 321                  | 271                  | 302                  | 400                   | —                     | —                     | 284                  | 352                  | 468                   | —                     | —                     |
| HDP 150 3   | 50.9  | 23.6                          | 110470         | 290            | 201                           | 286                   | 322                  | 272                  | 303                  | —                     | —                     | —                     | 285                  | 353                  | —                     | —                     | —                     |
| HDP 150 3   | 55.5  | 21.6                          | 106610         | 257            | 201                           | 286                   | —                    | 272                  | —                    | —                     | —                     | —                     | 285                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 60.4  | 19.9                          | 117200         | 259            | 205                           | 290                   | —                    | 276                  | —                    | —                     | —                     | —                     | 289                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 70.8  | 17.0                          | 113250         | 214            | 205                           | 290                   | —                    | 276                  | —                    | —                     | —                     | —                     | 289                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 77.0  | 15.6                          | 109330         | 189            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 89.0  | 13.5                          | 116800         | 179            | 146                           | 210                   | —                    | 201                  | —                    | —                     | —                     | —                     | 212                  | —                    | —                     | —                     | —                     |
| HDP 150 4   | 104.3 | 11.5                          | 117090         | 153            | 146                           | 210                   | —                    | 201                  | —                    | —                     | —                     | —                     | 212                  | —                    | —                     | —                     | —                     |
| HDP 150 4   | 113.6 | 10.6                          | 114780         | 138            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 123.6 | 9.7                           | 117200         | 129            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 144.9 | 8.3                           | 117090         | 110            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 157.8 | 7.6                           | 114780         | 99             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 170.9 | 7.0                           | 116800         | 93             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 200.3 | 6.0                           | 117090         | 80             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 218.1 | 5.5                           | 114780         | 72             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 237.5 | 5.1                           | 117200         | 67             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 278.3 | 4.3                           | 117090         | 57             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 303.1 | 4.0                           | 114780         | 52             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary

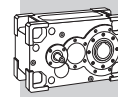


| HDP 150   |       |                               |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |
| HDP 150 2   | 7.9   | 126                           | 88800          | 1225           | *                             | *                     | *                    | *                    | 525                  | 768                   | 943                   |                       | *                    | *                    | 642                   | 948                   |                       |
| HDP 150 2   | 9.3   | 108                           | 104050         | 1225           | *                             | *                     | *                    | *                    | 534                  | 777                   | 952                   |                       | *                    | 491                  | 651                   | 957                   |                       |
| HDP 150 2   | 10.1  | 99                            | 110540         | 1195           | *                             | *                     | *                    | *                    | 538                  | 781                   | 956                   |                       | *                    | 495                  | 655                   | 961                   |                       |
| HDP 150 2   | 11.1  | 90                            | 109610         | 1080           | *                             | 449                   | 506                  | 493                  | 571                  | 814                   | 989                   |                       | 434                  | 528                  | 688                   | 994                   |                       |
| HDP 150 2   | 13.0  | 77                            | 113930         | 958            | *                             | 455                   | 512                  | 499                  | 577                  | 820                   | 995                   | ●                     | 440                  | 534                  | 694                   | 1000                  | ●                     |
| HDP 150 2   | 14.1  | 71                            | 109890         | 849            | *                             | 458                   | 515                  | 502                  | 580                  | 823                   | 998                   |                       | 443                  | 537                  | 697                   | 1003                  |                       |
| HDP 150 2   | 15.4  | 65                            | 116170         | 824            | 348                           | 479                   | 536                  | 523                  | 601                  | 844                   | —                     |                       | 464                  | 558                  | 718                   | 1024                  |                       |
| HDP 150 2   | 18.0  | 56                            | 112810         | 683            | 352                           | 483                   | 540                  | 527                  | 605                  | 848                   | —                     |                       | 468                  | 562                  | 722                   | —                     |                       |
| HDP 150 2   | 19.6  | 51                            | 108820         | 605            | 354                           | 485                   | 542                  | 529                  | 607                  | —                     | —                     |                       | 470                  | 564                  | 724                   | —                     |                       |
| HDP 150 3   | 21.5  | 46                            | 104540         | 541            | 262                           | 352                   | 391                  | 389                  | 446                  | 622                   | —                     | —                     | 346                  | 414                  | 530                   | 752                   | —                     |
| HDP 150 3   | 25.2  | 40                            | 111790         | 493            | 264                           | 354                   | 393                  | 391                  | 448                  | 624                   | —                     | —                     | 348                  | 416                  | 532                   | —                     | —                     |
| HDP 150 3   | 27.4  | 36                            | 107860         | 437            | 265                           | 355                   | 394                  | 392                  | 449                  | —                     | —                     | —                     | 349                  | 417                  | 533                   | —                     | —                     |
| HDP 150 3   | 29.9  | 33                            | 117200         | 436            | 271                           | 361                   | 400                  | 398                  | 455                  | —                     | —                     | —                     | 355                  | 423                  | 539                   | —                     | —                     |
| HDP 150 3   | 35.0  | 28.6                          | 110920         | 352            | 272                           | 362                   | —                    | 399                  | —                    | —                     | —                     | —                     | 356                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 38.1  | 26.2                          | 107040         | 312            | 272                           | 362                   | —                    | 399                  | —                    | —                     | —                     | —                     | 356                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 43.5  | 23.0                          | 117200         | 300            | 290                           | 380                   | —                    | 417                  | —                    | —                     | —                     | —                     | 374                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 50.9  | 19.6                          | 110840         | 242            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 3   | 55.5  | 18.0                          | 106990         | 215            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 3   | 60.4  | 16.6                          | 117200         | 216            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 3   | 70.8  | 14.1                          | 116370         | 183            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 3   | 77.0  | 13.0                          | 112360         | 162            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 89.0  | 11.2                          | 116800         | 149            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 104.3 | 9.6                           | 117090         | 127            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 113.6 | 8.8                           | 114780         | 115            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 123.6 | 8.1                           | 117200         | 108            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 144.9 | 6.9                           | 117090         | 92             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 157.8 | 6.3                           | 114780         | 83             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 170.9 | 5.8                           | 116800         | 78             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 200.3 | 5.0                           | 117090         | 66             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 218.1 | 4.6                           | 114780         | 60             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 237.5 | 4.2                           | 117200         | 56             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 278.3 | 3.6                           | 117090         | 48             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 303.1 | 3.3                           | 114780         | 43             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |

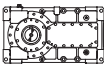
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary





**HDP**

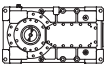
| HDP 150   |       |                               |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |
| HDP 150 2   | 7.9   | 126                           | 88800          | 1225           | *                             | *                     | *                    | *                    | *                    | *                     | 534                   |                       | *                    | *                    | 531                   | 837                   |                       |
| HDP 150 2   | 9.3   | 108                           | 104050         | 1225           | *                             | *                     | *                    | *                    | *                    | *                     | 543                   |                       | *                    | *                    | 540                   | 846                   |                       |
| HDP 150 2   | 10.1  | 99                            | 110540         | 1195           | *                             | *                     | *                    | *                    | *                    | *                     | 547                   |                       | *                    | *                    | 544                   | 850                   |                       |
| HDP 150 2   | 11.1  | 90                            | 109610         | 1080           | *                             | *                     | *                    | *                    | *                    | 484                   | 581                   |                       | *                    | *                    | 578                   | 884                   |                       |
| HDP 150 2   | 13.0  | 77                            | 113930         | 958            | *                             | *                     | *                    | *                    | *                    | 489                   | 586                   | ⊖                     | *                    | 423                  | 583                   | 889                   | ⊖                     |
| HDP 150 2   | 14.1  | 71                            | 109890         | 849            | *                             | *                     | 354                  | *                    | 357                  | 492                   | 589                   |                       | *                    | 426                  | 586                   | 892                   |                       |
| HDP 150 2   | 15.4  | 65                            | 116170         | 824            | *                             | 333                   | 375                  | 334                  | 378                  | 513                   | 610                   |                       | 353                  | 447                  | 607                   | 913                   |                       |
| HDP 150 2   | 18.0  | 56                            | 112810         | 683            | *                             | 337                   | 379                  | 338                  | 382                  | 517                   | 614                   |                       | 357                  | 451                  | 611                   | 917                   |                       |
| HDP 150 2   | 19.6  | 51                            | 108820         | 605            | 243                           | 339                   | 381                  | 340                  | 384                  | 519                   | 616                   |                       | 359                  | 453                  | 613                   | —                     |                       |
| HDP 150 3   | 21.5  | 46                            | 104540         | 541            | *                             | 243                   | 271                  | 248                  | 279                  | 377                   | 447                   | 477                   | 261                  | 329                  | 445                   | 667                   | —                     |
| HDP 150 3   | 25.2  | 40                            | 111790         | 493            | *                             | 245                   | 273                  | 250                  | 281                  | 379                   | 449                   | 479                   | 263                  | 331                  | 447                   | 669                   | —                     |
| HDP 150 3   | 27.4  | 36                            | 107860         | 437            | 180                           | 246                   | 274                  | 251                  | 282                  | 380                   | 450                   | —                     | 264                  | 332                  | 448                   | —                     | —                     |
| HDP 150 3   | 29.9  | 33                            | 117200         | 436            | 186                           | 252                   | 280                  | 257                  | 288                  | 386                   | 456                   | —                     | 270                  | 338                  | 454                   | —                     | —                     |
| HDP 150 3   | 35.0  | 28.6                          | 110920         | 352            | 187                           | 253                   | 281                  | 258                  | 289                  | 387                   | —                     | —                     | 271                  | 339                  | 455                   | —                     | —                     |
| HDP 150 3   | 38.1  | 26.2                          | 107040         | 312            | 188                           | 254                   | 282                  | 259                  | 290                  | 388                   | —                     | —                     | 272                  | 340                  | —                     | —                     | —                     |
| HDP 150 3   | 43.5  | 23.0                          | 117200         | 300            | 206                           | 272                   | 300                  | 277                  | 308                  | —                     | —                     | —                     | 290                  | 358                  | —                     | —                     | —                     |
| HDP 150 3   | 50.9  | 19.6                          | 110840         | 242            | 206                           | 272                   | —                    | 277                  | —                    | —                     | —                     | —                     | 290                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 55.5  | 18.0                          | 106990         | 215            | 207                           | 273                   | —                    | 278                  | —                    | —                     | —                     | —                     | 291                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 60.4  | 16.6                          | 117200         | 216            | 209                           | 275                   | —                    | 280                  | —                    | —                     | —                     | —                     | 293                  | —                    | —                     | —                     | —                     |
| HDP 150 3   | 70.8  | 14.1                          | 116370         | 183            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 3   | 77.0  | 13.0                          | 112360         | 162            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 89.0  | 11.2                          | 116800         | 149            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 104.3 | 9.6                           | 117090         | 127            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 113.6 | 8.8                           | 114780         | 115            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 123.6 | 8.1                           | 117200         | 108            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 144.9 | 6.9                           | 117090         | 92             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 157.8 | 6.3                           | 114780         | 83             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 170.9 | 5.8                           | 116800         | 78             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 200.3 | 5.0                           | 117090         | 66             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 218.1 | 4.6                           | 114780         | 60             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 237.5 | 4.2                           | 117200         | 56             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 278.3 | 3.6                           | 117090         | 48             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 150 4   | 303.1 | 3.3                           | 114780         | 43             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |

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— Thermal verification not necessary



HDP

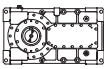
| HDP 160   |       |  |                         |                         | n <sub>1</sub> = 1800 min <sup>-1</sup> |                              |                             |                             |                              |                               |                               |                               |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|---|------------------------------|-----------------------------|-----------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                              |                             |                             |                              |                               |                               |                               |                             |                             |                              |                              |                              |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRAS</sub><br>[kW] | P <sub>TMCRAS9</sub><br>[kW] | P <sub>TMCRAS21</sub><br>[kW] | P <sub>TMCRAS34</sub><br>[kW] | P <sub>TMCRAS51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDP 160 2   | 9.0   | 201                                    | 84540                   | 1848                    | *                                       | *                            | *                           | *                           | *                            | *                             | 796                           |                               | *                           | *                           | *                            | 801                          |                              |
| HDP 160 2   | 10.5  | 172                                    | 98670                   | 1848                    | *                                       | *                            | *                           | *                           | *                            | *                             | 818                           |                               | *                           | *                           | *                            | 823                          |                              |
| HDP 160 2   | 11.4  | 158                                    | 104630                  | 1803                    | *                                       | *                            | *                           | *                           | *                            | *                             | 829                           |                               | *                           | *                           | *                            | 834                          |                              |
| HDP 160 2   | 12.6  | 143                                    | 104350                  | 1630                    | *                                       | *                            | *                           | *                           | *                            | 727                           | 902                           |                               | *                           | *                           | *                            | 907                          |                              |
| HDP 160 2   | 14.7  | 123                                    | 113510                  | 1519                    | *                                       | *                            | *                           | *                           | *                            | 741                           | 916                           | ⊖                             | *                           | *                           | 615                          | 921                          | ⊖                            |
| HDP 160 2   | 15.9  | 113                                    | 115960                  | 1428                    | *                                       | *                            | *                           | *                           | *                            | 748                           | 923                           |                               | *                           | *                           | 622                          | 928                          |                              |
| HDP 160 2   | 17.5  | 103                                    | 110600                  | 1244                    | *                                       | 513                          | 606                         | *                           | 551                          | 794                           | 969                           |                               | *                           | 508                         | 668                          | 974                          |                              |
| HDP 160 2   | 20.4  | 88                                     | 126330                  | 1217                    | *                                       | 523                          | 616                         | *                           | 561                          | 804                           | 979                           |                               | *                           | 518                         | 678                          | 984                          |                              |
| HDP 160 2   | 22.1  | 81                                     | 128970                  | 1143                    | *                                       | 527                          | 620                         | 487                         | 565                          | 808                           | 983                           |                               | *                           | 522                         | 682                          | 988                          |                              |
| HDP 160 3   | 24.4  | 74                                     | 99160                   | 813                     | *                                       | 366                          | 431                         | 346                         | 403                          | 579                           | 705                           | 769                           | *                           | 371                         | 487                          | 709                          | 919                          |
| HDP 160 3   | 28.5  | 63                                     | 115770                  | 813                     | *                                       | 371                          | 436                         | 351                         | 408                          | 584                           | 710                           | 774                           | *                           | 376                         | 492                          | 714                          | 924                          |
| HDP 160 3   | 31.0  | 58                                     | 125840                  | 813                     | *                                       | 373                          | 438                         | 353                         | 410                          | 586                           | 712                           | 776                           | *                           | 378                         | 494                          | 716                          | 926                          |
| HDP 160 3   | 33.9  | 53                                     | 134250                  | 792                     | *                                       | 386                          | 451                         | 366                         | 423                          | 599                           | 725                           | 789                           | 323                         | 391                         | 507                          | 729                          | 939                          |
| HDP 160 3   | 39.6  | 45                                     | 146300                  | 740                     | *                                       | 388                          | 453                         | 368                         | 425                          | 601                           | 727                           | 791                           | 325                         | 393                         | 509                          | 731                          | 941                          |
| HDP 160 3   | 43.1  | 42                                     | 139210                  | 647                     | *                                       | 390                          | 455                         | 370                         | 427                          | 603                           | 729                           | —                             | 327                         | 395                         | 511                          | 733                          | —                            |
| HDP 160 3   | 49.4  | 36                                     | 133700                  | 543                     | 281                                     | 428                          | 493                         | 408                         | 465                          | 641                           | —                             | —                             | 365                         | 433                         | 549                          | —                            | —                            |
| HDP 160 3   | 57.6  | 31                                     | 145030                  | 504                     | 283                                     | 430                          | 495                         | 410                         | 467                          | 643                           | —                             | —                             | 367                         | 435                         | 551                          | —                            | —                            |
| HDP 160 3   | 62.6  | 28.7                                   | 137880                  | 441                     | 284                                     | 431                          | 496                         | 411                         | 468                          | —                             | —                             | —                             | 368                         | 436                         | 552                          | —                            | —                            |
| HDP 160 3   | 68.6  | 26.3                                   | 143440                  | 419                     | 289                                     | 436                          | —                           | 416                         | 473                          | —                             | —                             | —                             | 373                         | 441                         | —                            | —                            | —                            |
| HDP 160 3   | 80.0  | 22.5                                   | 144680                  | 362                     | 290                                     | 437                          | —                           | 417                         | —                            | —                             | —                             | —                             | 374                         | —                           | —                            | —                            | —                            |
| HDP 160 3   | 87.0  | 20.7                                   | 136870                  | 315                     | 291                                     | 438                          | —                           | 418                         | —                            | —                             | —                             | —                             | 375                         | —                           | —                            | —                            | —                            |
| HDP 160 4   | 101.1 | 17.8                                   | 125180                  | 253                     | 204                                     | 316                          | —                           | 304                         | —                            | —                             | —                             | —                             | 270                         | —                           | —                            | —                            | —                            |
| HDP 160 4   | 117.9 | 15.3                                   | 146130                  | 253                     | 205                                     | 317                          | —                           | 305                         | —                            | —                             | —                             | —                             | 271                         | —                           | —                            | —                            | —                            |
| HDP 160 4   | 128.2 | 14.0                                   | 137000                  | 218                     | 205                                     | 317                          | —                           | 305                         | —                            | —                             | —                             | —                             | 271                         | —                           | —                            | —                            | —                            |
| HDP 160 4   | 140.4 | 12.8                                   | 142990                  | 208                     | 207                                     | 319                          | —                           | 307                         | —                            | —                             | —                             | —                             | 273                         | —                           | —                            | —                            | —                            |
| HDP 160 4   | 163.9 | 11.0                                   | 146300                  | 182                     | —                                       | —                            | —                           | —                           | —                            | —                             | —                             | —                             | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 178.1 | 10.1                                   | 146860                  | 168                     | —                                       | —                            | —                           | —                           | —                            | —                             | —                             | —                             | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 194.1 | 9.3                                    | 130070                  | 137                     | —                                       | —                            | —                           | —                           | —                            | —                             | —                             | —                             | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 226.6 | 7.9                                    | 146300                  | 132                     | —                                       | —                            | —                           | —                           | —                            | —                             | —                             | —                             | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 246.3 | 7.3                                    | 147070                  | 122                     | —                                       | —                            | —                           | —                           | —                            | —                             | —                             | —                             | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 269.7 | 6.7                                    | 141000                  | 107                     | —                                       | —                            | —                           | —                           | —                            | —                             | —                             | —                             | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 314.8 | 5.7                                    | 146300                  | 95                      | —                                       | —                            | —                           | —                           | —                            | —                             | —                             | —                             | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 342.2 | 5.3                                    | 147070                  | 88                      | —                                       | —                            | —                           | —                           | —                            | —                             | —                             | —                             | —                           | —                           | —                            | —                            | —                            |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP**

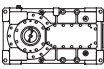
| HDP 160   |       |                               |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |
| HDP 160 2   | 9.0   | 201                           | 84540          | 1848           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | *                     |                       |
| HDP 160 2   | 10.5  | 172                           | 98670          | 1848           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | *                     |                       |
| HDP 160 2   | 11.4  | 158                           | 104630         | 1803           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | *                     |                       |
| HDP 160 2   | 12.6  | 143                           | 104350         | 1630           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | 789                   |                       |
| HDP 160 2   | 14.7  | 123                           | 113510         | 1519           | *                             | *                     | *                    | *                    | *                    | *                     | *                     | ⊖                     | *                    | *                    | *                     | 803                   | ⊖                     |
| HDP 160 2   | 15.9  | 113                           | 115960         | 1428           | *                             | *                     | *                    | *                    | *                    | *                     | *                     |                       | *                    | *                    | *                     | 810                   |                       |
| HDP 160 2   | 17.5  | 103                           | 110600         | 1244           | *                             | *                     | *                    | *                    | *                    | *                     | 553                   |                       | *                    | *                    | 550                   | 856                   |                       |
| HDP 160 2   | 20.4  | 88                            | 126330         | 1217           | *                             | *                     | *                    | *                    | *                    | *                     | 563                   |                       | *                    | *                    | 560                   | 866                   |                       |
| HDP 160 2   | 22.1  | 81                            | 128970         | 1143           | *                             | *                     | *                    | *                    | *                    | 470                   | 567                   |                       | *                    | *                    | 564                   | 870                   |                       |
| HDP 160 3   | 24.4  | 74                            | 99160          | 813            | *                             | *                     | *                    | *                    | *                    | 330                   | 400                   | 430                   | *                    | *                    | 398                   | 620                   | 830                   |
| HDP 160 3   | 28.5  | 63                            | 115770         | 813            | *                             | *                     | *                    | *                    | *                    | 334                   | 404                   | 434                   | *                    | *                    | 402                   | 624                   | 834                   |
| HDP 160 3   | 31.0  | 58                            | 125840         | 813            | *                             | *                     | *                    | *                    | *                    | 336                   | 406                   | 436                   | *                    | *                    | 404                   | 626                   | 836                   |
| HDP 160 3   | 33.9  | 53                            | 134250         | 792            | *                             | *                     | *                    | *                    | *                    | 349                   | 419                   | 449                   | *                    | *                    | 417                   | 639                   | 849                   |
| HDP 160 3   | 39.6  | 45                            | 146300         | 740            | *                             | *                     | 307                  | *                    | *                    | 352                   | 422                   | 452                   | *                    | 304                  | 420                   | 642                   | 852                   |
| HDP 160 3   | 43.1  | 42                            | 139210         | 647            | *                             | 261                   | 308                  | *                    | *                    | 353                   | 423                   | 453                   | *                    | 305                  | 421                   | 643                   | 853                   |
| HDP 160 3   | 49.4  | 36                            | 133700         | 543            | *                             | 299                   | 346                  | 262                  | 293                  | 391                   | 461                   | 491                   | 275                  | 343                  | 459                   | 681                   | —                     |
| HDP 160 3   | 57.6  | 31                            | 145030         | 504            | *                             | 301                   | 348                  | 264                  | 295                  | 393                   | 463                   | 493                   | 277                  | 345                  | 461                   | 683                   | —                     |
| HDP 160 3   | 62.6  | 28.7                          | 137880         | 441            | 194                           | 302                   | 349                  | 265                  | 296                  | 394                   | 464                   | —                     | 278                  | 346                  | 462                   | —                     | —                     |
| HDP 160 3   | 68.6  | 26.3                          | 143440         | 419            | 199                           | 307                   | 354                  | 270                  | 301                  | 399                   | 469                   | —                     | 283                  | 351                  | 467                   | —                     | —                     |
| HDP 160 3   | 80.0  | 22.5                          | 144680         | 362            | 201                           | 309                   | 356                  | 272                  | 303                  | 401                   | —                     | —                     | 285                  | 353                  | 469                   | —                     | —                     |
| HDP 160 3   | 87.0  | 20.7                          | 136870         | 315            | 201                           | 309                   | 356                  | 272                  | 303                  | 401                   | —                     | —                     | 285                  | 353                  | —                     | —                     | —                     |
| HDP 160 4   | 101.1 | 17.8                          | 125180         | 253            | 136                           | 218                   | 254                  | 191                  | 216                  | 293                   | —                     | —                     | 202                  | 255                  | —                     | —                     | —                     |
| HDP 160 4   | 117.9 | 15.3                          | 146130         | 253            | 136                           | 218                   | 254                  | 191                  | 216                  | 293                   | —                     | —                     | 202                  | 255                  | —                     | —                     | —                     |
| HDP 160 4   | 128.2 | 14.0                          | 137000         | 218            | 137                           | 219                   | —                    | 192                  | 217                  | 294                   | —                     | —                     | 203                  | 256                  | —                     | —                     | —                     |
| HDP 160 4   | 140.4 | 12.8                          | 142990         | 208            | 139                           | 221                   | —                    | 194                  | 219                  | —                     | —                     | —                     | 205                  | 258                  | —                     | —                     | —                     |
| HDP 160 4   | 163.9 | 11.0                          | 146300         | 182            | 139                           | 221                   | —                    | 194                  | —                    | —                     | —                     | —                     | 205                  | —                    | —                     | —                     | —                     |
| HDP 160 4   | 178.1 | 10.1                          | 146860         | 168            | 139                           | 221                   | —                    | 194                  | —                    | —                     | —                     | —                     | 205                  | —                    | —                     | —                     | —                     |
| HDP 160 4   | 194.1 | 9.3                           | 130070         | 137            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 226.6 | 7.9                           | 146300         | 132            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 246.3 | 7.3                           | 147070         | 122            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 269.7 | 6.7                           | 141000         | 107            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 314.8 | 5.7                           | 146300         | 95             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 342.2 | 5.3                           | 147070         | 88             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



HDP

| HDP 160   |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |
| HDP 160 2   | 9.0   | 167                            | 89290          | 1627           | *                             | *                     | *                    | *                    | *                    | 693                   | 868                   |                       | *                    | *                    | *                     | 873                   |                       |
| HDP 160 2   | 10.5  | 143                            | 104220         | 1627           | *                             | *                     | *                    | *                    | *                    | 710                   | 885                   |                       | *                    | *                    | *                     | 890                   |                       |
| HDP 160 2   | 11.4  | 132                            | 110510         | 1587           | *                             | *                     | *                    | *                    | *                    | 718                   | 893                   |                       | *                    | *                    | *                     | 898                   |                       |
| HDP 160 2   | 12.6  | 119                            | 110220         | 1435           | *                             | *                     | *                    | *                    | *                    | 775                   | 950                   |                       | *                    | *                    | 649                   | 955                   |                       |
| HDP 160 2   | 14.7  | 102                            | 119890         | 1337           | *                             | *                     | 558                  | *                    | 543                  | 786                   | 961                   | ●                     | *                    | *                    | 660                   | 966                   | ●                     |
| HDP 160 2   | 15.9  | 94                             | 122470         | 1257           | *                             | *                     | 563                  | *                    | 548                  | 791                   | 966                   |                       | *                    | 505                  | 665                   | 971                   |                       |
| HDP 160 2   | 17.5  | 86                             | 116810         | 1095           | *                             | 517                   | 598                  | 505                  | 583                  | 826                   | 1001                  |                       | 446                  | 540                  | 700                   | 1006                  |                       |
| HDP 160 2   | 20.4  | 74                             | 133430         | 1071           | *                             | 524                   | 605                  | 512                  | 590                  | 833                   | 1008                  |                       | 453                  | 547                  | 707                   | 1013                  |                       |
| HDP 160 2   | 22.1  | 68                             | 136230         | 1006           | *                             | 528                   | 609                  | 516                  | 594                  | 837                   | 1012                  |                       | 457                  | 551                  | 711                   | 1017                  |                       |
| HDP 160 3   | 24.4  | 61                             | 105110         | 718            | *                             | 373                   | 429                  | 372                  | 429                  | 605                   | 731                   | —                     | 329                  | 397                  | 513                   | 735                   | —                     |
| HDP 160 3   | 28.5  | 53                             | 122690         | 718            | *                             | 377                   | 433                  | 376                  | 433                  | 609                   | 735                   | —                     | 333                  | 401                  | 517                   | 739                   | —                     |
| HDP 160 3   | 31.0  | 48                             | 133350         | 718            | *                             | 378                   | 434                  | 377                  | 434                  | 610                   | 736                   | —                     | 334                  | 402                  | 518                   | 740                   | —                     |
| HDP 160 3   | 33.9  | 44                             | 142310         | 700            | *                             | 388                   | 444                  | 387                  | 444                  | 620                   | 746                   | —                     | 344                  | 412                  | 528                   | 750                   | —                     |
| HDP 160 3   | 39.6  | 38                             | 146300         | 616            | 262                           | 390                   | 446                  | 389                  | 446                  | 622                   | —                     | —                     | 346                  | 414                  | 530                   | 752                   | —                     |
| HDP 160 3   | 43.1  | 35                             | 138540         | 537            | 263                           | 391                   | 447                  | 390                  | 447                  | 623                   | —                     | —                     | 347                  | 415                  | 531                   | 753                   | —                     |
| HDP 160 3   | 49.4  | 30                             | 138770         | 469            | 293                           | 421                   | 477                  | 420                  | 477                  | —                     | —                     | —                     | 377                  | 445                  | 561                   | —                     | —                     |
| HDP 160 3   | 57.6  | 26.0                           | 145150         | 421            | 294                           | 422                   | —                    | 421                  | —                    | —                     | —                     | —                     | 378                  | 446                  | —                     | —                     | —                     |
| HDP 160 3   | 62.6  | 24.0                           | 137300         | 366            | 295                           | 423                   | —                    | 422                  | —                    | —                     | —                     | —                     | 379                  | —                    | —                     | —                     | —                     |
| HDP 160 3   | 68.6  | 21.9                           | 143440         | 349            | 299                           | 427                   | —                    | 426                  | —                    | —                     | —                     | —                     | 383                  | —                    | —                     | —                     | —                     |
| HDP 160 3   | 80.0  | 18.7                           | 144140         | 301            | 300                           | 428                   | —                    | 427                  | —                    | —                     | —                     | —                     | 384                  | —                    | —                     | —                     | —                     |
| HDP 160 3   | 87.0  | 17.2                           | 136370         | 262            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 101.1 | 14.8                           | 132640         | 224            | 215                           | 312                   | —                    | 315                  | —                    | —                     | —                     | —                     | 281                  | —                    | —                     | —                     | —                     |
| HDP 160 4   | 117.9 | 12.7                           | 146300         | 211            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 128.2 | 11.7                           | 143630         | 191            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 140.4 | 10.7                           | 142380         | 173            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 163.9 | 9.2                            | 146300         | 152            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 178.1 | 8.4                            | 147070         | 141            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 194.1 | 7.7                            | 132640         | 116            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 226.6 | 6.6                            | 146300         | 110            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 246.3 | 6.1                            | 147070         | 102            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 269.7 | 5.6                            | 140530         | 89             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 314.8 | 4.8                            | 146300         | 79             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 342.2 | 4.4                            | 147070         | 73             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |

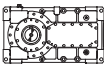
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDP**

**HDP 160** **n<sub>1</sub> = 1500 min<sup>-1</sup>**

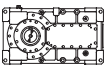
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                              |                             |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFANL/R</sub><br>[kW] | P <sub>TFANLR</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDP 160 2   | 9.0   | 167                                    | 89290                   | 1627                    | *                      | *                            | *                           | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 755                          |                              |
| HDP 160 2   | 10.5  | 143                                    | 104220                  | 1627                    | *                      | *                            | *                           | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 772                          |                              |
| HDP 160 2   | 11.4  | 132                                    | 110510                  | 1587                    | *                      | *                            | *                           | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 780                          |                              |
| HDP 160 2   | 12.6  | 119                                    | 110220                  | 1435                    | *                      | *                            | *                           | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 837                          |                              |
| HDP 160 2   | 14.7  | 102                                    | 119890                  | 1337                    | *                      | *                            | *                           | *                           | *                           | *                            | 545                          | ●                            | *                           | *                           | 542                          | 848                          | ●                            |
| HDP 160 2   | 15.9  | 94                                     | 122470                  | 1257                    | *                      | *                            | *                           | *                           | *                           | *                            | 550                          |                              | *                           | *                           | 547                          | 853                          |                              |
| HDP 160 2   | 17.5  | 86                                     | 116810                  | 1095                    | *                      | *                            | *                           | *                           | *                           | 488                          | 585                          |                              | *                           | *                           | 582                          | 888                          |                              |
| HDP 160 2   | 20.4  | 74                                     | 133430                  | 1071                    | *                      | *                            | *                           | *                           | *                           | 495                          | 592                          |                              | *                           | 429                         | 589                          | 895                          |                              |
| HDP 160 2   | 22.1  | 68                                     | 136230                  | 1006                    | *                      | *                            | 420                         | *                           | *                           | 499                          | 596                          |                              | *                           | 433                         | 593                          | 899                          |                              |
| HDP 160 3   | 24.4  | 61                                     | 105110                  | 718                     | *                      | *                            | 291                         | *                           | *                           | 356                          | 426                          | 456                          | *                           | 308                         | 424                          | 646                          | 856                          |
| HDP 160 3   | 28.5  | 53                                     | 122690                  | 718                     | *                      | *                            | 294                         | *                           | *                           | 359                          | 429                          | 459                          | *                           | 311                         | 427                          | 649                          | 859                          |
| HDP 160 3   | 31.0  | 48                                     | 133350                  | 718                     | *                      | *                            | 296                         | *                           | *                           | 361                          | 431                          | 461                          | *                           | 313                         | 429                          | 651                          | 861                          |
| HDP 160 3   | 33.9  | 44                                     | 142310                  | 700                     | *                      | *                            | 305                         | *                           | *                           | 370                          | 440                          | 470                          | *                           | 322                         | 438                          | 660                          | 870                          |
| HDP 160 3   | 39.6  | 38                                     | 146300                  | 616                     | *                      | 267                          | 308                         | *                           | 275                         | 373                          | 443                          | 473                          | 257                         | 325                         | 441                          | 663                          | —                            |
| HDP 160 3   | 43.1  | 35                                     | 138540                  | 537                     | *                      | 268                          | 309                         | 245                         | 276                         | 374                          | 444                          | 474                          | 258                         | 326                         | 442                          | 664                          | —                            |
| HDP 160 3   | 49.4  | 30                                     | 138770                  | 469                     | 203                    | 297                          | 338                         | 274                         | 305                         | 403                          | 473                          | —                            | 287                         | 355                         | 471                          | —                            | —                            |
| HDP 160 3   | 57.6  | 26.0                                   | 145150                  | 421                     | 204                    | 298                          | 339                         | 275                         | 306                         | 404                          | 474                          | —                            | 288                         | 356                         | 472                          | —                            | —                            |
| HDP 160 3   | 62.6  | 24.0                                   | 137300                  | 366                     | 205                    | 299                          | 340                         | 276                         | 307                         | 405                          | —                            | —                            | 289                         | 357                         | 473                          | —                            | —                            |
| HDP 160 3   | 68.6  | 21.9                                   | 143440                  | 349                     | 209                    | 303                          | 344                         | 280                         | 311                         | 409                          | —                            | —                            | 293                         | 361                         | —                            | —                            | —                            |
| HDP 160 3   | 80.0  | 18.7                                   | 144140                  | 301                     | 210                    | 304                          | —                           | 281                         | 312                         | —                            | —                            | —                            | 294                         | 362                         | —                            | —                            | —                            |
| HDP 160 3   | 87.0  | 17.2                                   | 136370                  | 262                     | 211                    | 305                          | —                           | 282                         | —                           | —                            | —                            | —                            | 295                         | —                           | —                            | —                            | —                            |
| HDP 160 4   | 101.1 | 14.8                                   | 132640                  | 224                     | 147                    | 218                          | 250                         | 202                         | 227                         | —                            | —                            | —                            | 213                         | 266                         | —                            | —                            | —                            |
| HDP 160 4   | 117.9 | 12.7                                   | 146300                  | 211                     | 147                    | 218                          | —                           | 202                         | 227                         | —                            | —                            | —                            | 213                         | —                           | —                            | —                            | —                            |
| HDP 160 4   | 128.2 | 11.7                                   | 143630                  | 191                     | 148                    | 219                          | —                           | 203                         | —                           | —                            | —                            | —                            | 214                         | —                           | —                            | —                            | —                            |
| HDP 160 4   | 140.4 | 10.7                                   | 142380                  | 173                     | 149                    | 220                          | —                           | 204                         | —                           | —                            | —                            | —                            | 215                         | —                           | —                            | —                            | —                            |
| HDP 160 4   | 163.9 | 9.2                                    | 146300                  | 152                     | 150                    | 221                          | —                           | 205                         | —                           | —                            | —                            | —                            | 216                         | —                           | —                            | —                            | —                            |
| HDP 160 4   | 178.1 | 8.4                                    | 147070                  | 141                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 194.1 | 7.7                                    | 132640                  | 116                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 226.6 | 6.6                                    | 146300                  | 110                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 246.3 | 6.1                                    | 147070                  | 102                     | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 269.7 | 5.6                                    | 140530                  | 89                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 314.8 | 4.8                                    | 146300                  | 79                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDP 160 4   | 342.2 | 4.4                                    | 147070                  | 73                      | —                      | —                            | —                           | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary

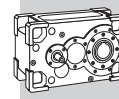


HDP

| HDP 160   |       |                               |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |
| HDP 160 2   | 9.0   | 134                           | 95480          | 1392           | *                             | *                     | *                    | *                    | *                    | 747                   | 922                   |                       | *                    | *                    | 621                   | 927                   |                       |
| HDP 160 2   | 10.5  | 115                           | 111440         | 1392           | *                             | *                     | *                    | *                    | *                    | 760                   | 935                   |                       | *                    | *                    | 634                   | 940                   |                       |
| HDP 160 2   | 11.4  | 105                           | 118160         | 1357           | *                             | *                     | *                    | *                    | *                    | 767                   | 942                   |                       | *                    | *                    | 641                   | 947                   |                       |
| HDP 160 2   | 12.6  | 96                            | 117850         | 1227           | *                             | *                     | 555                  | *                    | 567                  | 810                   | 985                   |                       | *                    | 524                  | 684                   | 990                   |                       |
| HDP 160 2   | 14.7  | 82                            | 128200         | 1144           | *                             | 491                   | 564                  | 498                  | 576                  | 819                   | 994                   | ●                     | *                    | 533                  | 693                   | 999                   | ●                     |
| HDP 160 2   | 15.9  | 75                            | 130950         | 1075           | *                             | 495                   | 568                  | 502                  | 580                  | 823                   | 998                   |                       | 443                  | 537                  | 697                   | 1003                  |                       |
| HDP 160 2   | 17.5  | 69                            | 124900         | 936            | *                             | 522                   | 595                  | 529                  | 607                  | 850                   | 1025                  |                       | 470                  | 564                  | 724                   | 1030                  |                       |
| HDP 160 2   | 20.4  | 59                            | 142670         | 916            | *                             | 528                   | 601                  | 535                  | 613                  | 856                   | 1031                  |                       | 476                  | 570                  | 730                   | 1036                  |                       |
| HDP 160 2   | 22.1  | 54                            | 140260         | 829            | 362                           | 530                   | 603                  | 537                  | 615                  | 858                   | —                     |                       | 478                  | 572                  | 732                   | 1038                  |                       |
| HDP 160 3   | 24.4  | 49                            | 112390         | 614            | 265                           | 380                   | 431                  | 392                  | 449                  | 625                   | —                     | —                     | 349                  | 417                  | 533                   | 755                   | —                     |
| HDP 160 3   | 28.5  | 42                            | 131180         | 614            | 267                           | 382                   | 433                  | 394                  | 451                  | 627                   | —                     | —                     | 351                  | 419                  | 535                   | 757                   | —                     |
| HDP 160 3   | 31.0  | 39                            | 138920         | 598            | 269                           | 384                   | 435                  | 396                  | 453                  | 629                   | —                     | —                     | 353                  | 421                  | 537                   | 759                   | —                     |
| HDP 160 3   | 33.9  | 35                            | 143440         | 564            | 276                           | 391                   | 442                  | 403                  | 460                  | 636                   | —                     | —                     | 360                  | 428                  | 544                   | 766                   | —                     |
| HDP 160 3   | 39.6  | 30                            | 145660         | 491            | 278                           | 393                   | 444                  | 405                  | 462                  | 638                   | —                     | —                     | 362                  | 430                  | 546                   | —                     | —                     |
| HDP 160 3   | 43.1  | 27.9                          | 137780         | 427            | 279                           | 394                   | 445                  | 406                  | 463                  | —                     | —                     | —                     | 363                  | 431                  | —                     | —                     | —                     |
| HDP 160 3   | 49.4  | 24.3                          | 138770         | 375            | 301                           | 416                   | —                    | 428                  | —                    | —                     | —                     | —                     | 385                  | —                    | —                     | —                     | —                     |
| HDP 160 3   | 57.6  | 20.8                          | 144450         | 335            | 303                           | 418                   | —                    | 430                  | —                    | —                     | —                     | —                     | 387                  | —                    | —                     | —                     | —                     |
| HDP 160 3   | 62.6  | 19.2                          | 136660         | 291            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 3   | 68.6  | 17.5                          | 143440         | 279            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 3   | 80.0  | 15.0                          | 146300         | 244            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 3   | 87.0  | 13.8                          | 140140         | 215            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 101.1 | 11.9                          | 132640         | 179            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 117.9 | 10.2                          | 146300         | 169            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 128.2 | 9.4                           | 147070         | 156            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 140.4 | 8.5                           | 141690         | 137            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 163.9 | 7.3                           | 146300         | 122            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 178.1 | 6.7                           | 147070         | 112            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 194.1 | 6.2                           | 132640         | 93             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 226.6 | 5.3                           | 146300         | 88             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 246.3 | 4.9                           | 147070         | 81             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 269.7 | 4.4                           | 141690         | 72             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 314.8 | 3.8                           | 146300         | 63             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 342.2 | 3.5                           | 147070         | 59             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |

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— Thermal verification not necessary



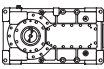
| <b>HDP 160</b>   |              |  |                               |                               | <b>n<sub>1</sub> = 1200 min<sup>-1</sup></b> |                                    |                                   |                                   |                                   |                                    |                                    |                                    |                                   |                                   |                                    |                                    |                                    |  |
|------------------|--------------|--|-------------------------------|-------------------------------|--|------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|--|
|                  | <b>i</b>     | <b>n<sub>2</sub></b><br>[min <sup>-1</sup> ] | <b>Mn<sub>2</sub></b><br>[Nm] | <b>Pn<sub>1</sub></b><br>[kW] | <b>t<sub>a</sub> = 40°C</b>                  |                                    |                                   |                                   |                                   |                                    |                                    |                                    |                                   |                                   |                                    |                                    |                                    |  |
|                  |              |  |                               |                               | <b>P<sub>T</sub></b><br>[kW]                 | <b>P<sub>TFANL/R</sub></b><br>[kW] | <b>P<sub>TFANLR</sub></b><br>[kW] | <b>P<sub>TMCRA5</sub></b><br>[kW] | <b>P<sub>TMCRA9</sub></b><br>[kW] | <b>P<sub>TMCRA21</sub></b><br>[kW] | <b>P<sub>TMCRA34</sub></b><br>[kW] | <b>P<sub>TMCRA51</sub></b><br>[kW] | <b>P<sub>TMCRW5</sub></b><br>[kW] | <b>P<sub>TMCRW9</sub></b><br>[kW] | <b>P<sub>TMCRW21</sub></b><br>[kW] | <b>P<sub>TMCRW34</sub></b><br>[kW] | <b>P<sub>TMCRW51</sub></b><br>[kW] |  |
| <b>HDP 160 2</b> | <b>9.0</b>   | 134  | 95480                         | 1392                          | *  | *                                  | *                                 | *                                 | *                                 | *                                  | *                                  |                                    | *                                 | *                                 | *                                  | 809                                |                                    |  |
| <b>HDP 160 2</b> | <b>10.5</b>  | 115  | 111440                        | 1392                          | *  | *                                  | *                                 | *                                 | *                                 | *                                  | *                                  |                                    | *                                 | *                                 | *                                  | 822                                |                                    |  |
| <b>HDP 160 2</b> | <b>11.4</b>  | 105  | 118160                        | 1357                          | *  | *                                  | *                                 | *                                 | *                                 | *                                  | *                                  |                                    | *                                 | *                                 | *                                  | 829                                |                                    |  |
| <b>HDP 160 2</b> | <b>12.6</b>  | 96   | 117850                        | 1227                          | *  | *                                  | *                                 | *                                 | *                                 | *                                  | 569                                |                                    | *                                 | *                                 | 566                                | 872                                |                                    |  |
| <b>HDP 160 2</b> | <b>14.7</b>  | 82   | 128200                        | 1144                          | *  | *                                  | *                                 | *                                 | *                                 | 481                                | 578                                | ☉                                  | *                                 | *                                 | 575                                | 881                                | ☉                                  |  |
| <b>HDP 160 2</b> | <b>15.9</b>  | 75   | 130950                        | 1075                          | *  | *                                  | *                                 | *                                 | *                                 | 485                                | 582                                |                                    | *                                 | *                                 | 579                                | 885                                |                                    |  |
| <b>HDP 160 2</b> | <b>17.5</b>  | 69   | 124900                        | 936                           | *  | *                                  | 413                               | *                                 | 377                               | 512                                | 609                                |                                    | *                                 | 446                               | 606                                | 912                                |                                    |  |
| <b>HDP 160 2</b> | <b>20.4</b>  | 59   | 142670                        | 916                           | *  | *                                  | 419                               | *                                 | 383                               | 518                                | 615                                |                                    | *                                 | 452                               | 612                                | 918                                |                                    |  |
| <b>HDP 160 2</b> | <b>22.1</b>  | 54   | 140260                        | 829                           | *  | 367                                | 421                               | 341                               | 385                               | 520                                | 617                                |                                    | 360                               | 454                               | 614                                | 920                                |                                    |  |
| <b>HDP 160 3</b> | <b>24.4</b>  | 49   | 112390                        | 614                           | *  | 260                                | 296                               | 246                               | 277                               | 375                                | 445                                | 475                                | 259                               | 327                               | 443                                | 665                                | —                                  |  |
| <b>HDP 160 3</b> | <b>28.5</b>  | 42   | 131180                        | 614                           | *  | 263                                | 299                               | 249                               | 280                               | 378                                | 448                                | 478                                | 262                               | 330                               | 446                                | 668                                | —                                  |  |
| <b>HDP 160 3</b> | <b>31.0</b>  | 39   | 138920                        | 598                           | *  | 264                                | 300                               | 250                               | 281                               | 379                                | 449                                | 479                                | 263                               | 331                               | 447                                | 669                                | —                                  |  |
| <b>HDP 160 3</b> | <b>33.9</b>  | 35   | 143440                        | 564                           | *  | 272                                | 308                               | 258                               | 289                               | 387                                | 457                                | 487                                | 271                               | 339                               | 455                                | 677                                | —                                  |  |
| <b>HDP 160 3</b> | <b>39.6</b>  | 30   | 145660                        | 491                           | *  | 273                                | 309                               | 259                               | 290                               | 388                                | 458                                | 488                                | 272                               | 340                               | 456                                | 678                                | —                                  |  |
| <b>HDP 160 3</b> | <b>43.1</b>  | 27.9   | 137780                        | 427                           | 189  | 274                                | 310                               | 260                               | 291                               | 389                                | 459                                | —                                  | 273                               | 341                               | 457                                | —                                  | —                                  |  |
| <b>HDP 160 3</b> | <b>49.4</b>  | 24.3   | 138770                        | 375                           | 212  | 297                                | 333                               | 283                               | 314                               | 412                                | —                                  | —                                  | 296                               | 364                               | 480                                | —                                  | —                                  |  |
| <b>HDP 160 3</b> | <b>57.6</b>  | 20.8   | 144450                        | 335                           | 213  | 298                                | 334                               | 284                               | 315                               | 413                                | —                                  | —                                  | 297                               | 365                               | —                                  | —                                  | —                                  |  |
| <b>HDP 160 3</b> | <b>62.6</b>  | 19.2   | 136660                        | 291                           | 213  | 298                                | —                                 | 284                               | 315                               | —                                  | —                                  | —                                  | 297                               | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 3</b> | <b>68.6</b>  | 17.5   | 143440                        | 279                           | 217  | 302                                | —                                 | 288                               | —                                 | —                                  | —                                  | —                                  | 301                               | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 3</b> | <b>80.0</b>  | 15.0   | 146300                        | 244                           | 218  | 303                                | —                                 | 289                               | —                                 | —                                  | —                                  | —                                  | 302                               | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 3</b> | <b>87.0</b>  | 13.8   | 140140                        | 215                           | —  | —                                  | —                                 | —                                 | —                                 | —                                  | —                                  | —                                  | —                                 | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>101.1</b> | 11.9   | 132640                        | 179                           | 155  | 219                                | —                                 | 210                               | —                                 | —                                  | —                                  | —                                  | 221                               | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>117.9</b> | 10.2   | 146300                        | 169                           | 156  | 220                                | —                                 | 211                               | —                                 | —                                  | —                                  | —                                  | 222                               | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>128.2</b> | 9.4  | 147070                        | 156                           | 156  | 220                                | —                                 | 211                               | —                                 | —                                  | —                                  | —                                  | 222                               | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>140.4</b> | 8.5  | 141690                        | 137                           | —  | —                                  | —                                 | —                                 | —                                 | —                                  | —                                  | —                                  | —                                 | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>163.9</b> | 7.3  | 146300                        | 122                           | —  | —                                  | —                                 | —                                 | —                                 | —                                  | —                                  | —                                  | —                                 | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>178.1</b> | 6.7  | 147070                        | 112                           | —  | —                                  | —                                 | —                                 | —                                 | —                                  | —                                  | —                                  | —                                 | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>194.1</b> | 6.2  | 132640                        | 93                            | —  | —                                  | —                                 | —                                 | —                                 | —                                  | —                                  | —                                  | —                                 | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>226.6</b> | 5.3  | 146300                        | 88                            | —  | —                                  | —                                 | —                                 | —                                 | —                                  | —                                  | —                                  | —                                 | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>246.3</b> | 4.9  | 147070                        | 81                            | —  | —                                  | —                                 | —                                 | —                                 | —                                  | —                                  | —                                  | —                                 | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>269.7</b> | 4.4  | 141690                        | 72                            | —  | —                                  | —                                 | —                                 | —                                 | —                                  | —                                  | —                                  | —                                 | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>314.8</b> | 3.8  | 146300                        | 63                            | —  | —                                  | —                                 | —                                 | —                                 | —                                  | —                                  | —                                  | —                                 | —                                 | —                                  | —                                  | —                                  |  |
| <b>HDP 160 4</b> | <b>342.2</b> | 3.5  | 147070                        | 59                            | —  | —                                  | —                                 | —                                 | —                                 | —                                  | —                                  | —                                  | —                                 | —                                 | —                                  | —                                  | —                                  |  |

\* **BONFIGLIOLI**  
TECHNICAL SERVICE

— Thermal verification not necessary



HDP

| HDP 160   |       |                               |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |
| HDP 160 2   | 9.0   | 111                           | 100840         | 1225           | *                             | *                     | *                    | *                    | 539                  | 782                   | 957                   |                       | *                    | 496                  | 656                   | 962                   |                       |
| HDP 160 2   | 10.5  | 95                            | 117700         | 1225           | *                             | *                     | *                    | *                    | 550                  | 793                   | 968                   |                       | *                    | 507                  | 667                   | 973                   |                       |
| HDP 160 2   | 11.4  | 88                            | 124800         | 1195           | *                             | *                     | 490                  | *                    | 555                  | 798                   | 973                   |                       | *                    | 512                  | 672                   | 978                   |                       |
| HDP 160 2   | 12.6  | 80                            | 124480         | 1080           | *                             | 469                   | 526                  | 513                  | 591                  | 834                   | 1009                  |                       | 454                  | 548                  | 708                   | 1014                  |                       |
| HDP 160 2   | 14.7  | 68                            | 135400         | 1007           | *                             | 476                   | 533                  | 520                  | 598                  | 841                   | 1016                  | ⊖                     | 461                  | 555                  | 715                   | 1021                  | ⊖                     |
| HDP 160 2   | 15.9  | 63                            | 138320         | 946            | *                             | 479                   | 536                  | 523                  | 601                  | 844                   | 1019                  |                       | 464                  | 558                  | 718                   | 1024                  |                       |
| HDP 160 2   | 17.5  | 57                            | 131920         | 824            | 370                           | 501                   | 558                  | 545                  | 623                  | 866                   | —                     |                       | 486                  | 580                  | 740                   | 1046                  |                       |
| HDP 160 2   | 20.4  | 49                            | 147540         | 790            | 375                           | 506                   | 563                  | 550                  | 628                  | 871                   | —                     |                       | 491                  | 585                  | 745                   | 1051                  |                       |
| HDP 160 2   | 22.1  | 45                            | 139510         | 687            | 377                           | 508                   | 565                  | 552                  | 630                  | 873                   | —                     |                       | 493                  | 587                  | 747                   | —                     |                       |
| HDP 160 3   | 24.4  | 41                            | 118710         | 541            | 278                           | 368                   | 407                  | 405                  | 462                  | 638                   | —                     | —                     | 362                  | 430                  | 546                   | —                     | —                     |
| HDP 160 3   | 28.5  | 35                            | 138550         | 541            | 280                           | 370                   | 409                  | 407                  | 464                  | 640                   | —                     | —                     | 364                  | 432                  | 548                   | —                     | —                     |
| HDP 160 3   | 31.0  | 32                            | 138270         | 496            | 281                           | 371                   | 410                  | 408                  | 465                  | 641                   | —                     | —                     | 365                  | 433                  | 549                   | —                     | —                     |
| HDP 160 3   | 33.9  | 29.5                          | 143440         | 470            | 287                           | 377                   | 416                  | 414                  | 471                  | —                     | —                     | —                     | 371                  | 439                  | 555                   | —                     | —                     |
| HDP 160 3   | 39.6  | 25.2                          | 145050         | 407            | 288                           | 378                   | 417                  | 415                  | —                    | —                     | —                     | —                     | 372                  | 440                  | —                     | —                     | —                     |
| HDP 160 3   | 43.1  | 23.2                          | 137210         | 355            | 289                           | 379                   | —                    | 416                  | —                    | —                     | —                     | —                     | 373                  | —                    | —                     | —                     | —                     |
| HDP 160 3   | 49.4  | 20.3                          | 138770         | 313            | 307                           | 397                   | —                    | 434                  | —                    | —                     | —                     | —                     | 391                  | —                    | —                     | —                     | —                     |
| HDP 160 3   | 57.6  | 17.4                          | 144930         | 280            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 3   | 62.6  | 16.0                          | 137140         | 244            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 3   | 68.6  | 14.6                          | 143440         | 233            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 3   | 80.0  | 12.5                          | 146300         | 203            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 3   | 87.0  | 11.5                          | 144010         | 184            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 101.1 | 9.9                           | 132640         | 149            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 117.9 | 8.5                           | 146300         | 141            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 128.2 | 7.8                           | 147070         | 130            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 140.4 | 7.1                           | 141170         | 114            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 163.9 | 6.1                           | 146300         | 101            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 178.1 | 5.6                           | 147070         | 94             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 194.1 | 5.2                           | 132640         | 78             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 226.6 | 4.4                           | 146300         | 73             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 246.3 | 4.1                           | 147070         | 68             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 269.7 | 3.7                           | 143440         | 60             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 314.8 | 3.2                           | 146300         | 53             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 342.2 | 2.9                           | 147070         | 49             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |

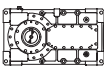
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary





**HDP**

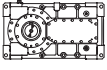
| HDP 160   |       |                               |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                       |                      |                      |                      |                       |                       |                       |                      |                      |                       |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFANL/R}$<br>[kW] | $P_{TFANLR}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TMCRA51}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] | $P_{TMCRW51}$<br>[kW] |
| HDP 160 2   | 9.0   | 111                           | 100840         | 1225           | *                             | *                     | *                    | *                    | *                    | *                     | 541                   |                       | *                    | *                    | 538                   | 844                   |                       |
| HDP 160 2   | 10.5  | 95                            | 117700         | 1225           | *                             | *                     | *                    | *                    | *                    | *                     | 552                   |                       | *                    | *                    | 549                   | 855                   |                       |
| HDP 160 2   | 11.4  | 88                            | 124800         | 1195           | *                             | *                     | *                    | *                    | *                    | *                     | 557                   |                       | *                    | *                    | 554                   | 860                   |                       |
| HDP 160 2   | 12.6  | 80                            | 124480         | 1080           | *                             | *                     | *                    | *                    | *                    | 496                   | 593                   |                       | *                    | *                    | 590                   | 896                   |                       |
| HDP 160 2   | 14.7  | 68                            | 135400         | 1007           | *                             | *                     | *                    | *                    | *                    | 503                   | 600                   | ●                     | *                    | 437                  | 597                   | 903                   | ●                     |
| HDP 160 2   | 15.9  | 63                            | 138320         | 946            | *                             | *                     | *                    | *                    | *                    | 506                   | 603                   |                       | *                    | 440                  | 600                   | 906                   |                       |
| HDP 160 2   | 17.5  | 57                            | 131920         | 824            | *                             | 348                   | 390                  | 349                  | 393                  | 528                   | 625                   |                       | 368                  | 462                  | 622                   | 928                   |                       |
| HDP 160 2   | 20.4  | 49                            | 147540         | 790            | *                             | 353                   | 395                  | 354                  | 398                  | 533                   | 630                   |                       | 373                  | 467                  | 627                   | 933                   |                       |
| HDP 160 2   | 22.1  | 45                            | 139510         | 687            | *                             | 355                   | 397                  | 356                  | 400                  | 535                   | 632                   |                       | 375                  | 469                  | 629                   | 935                   |                       |
| HDP 160 3   | 24.4  | 41                            | 118710         | 541            | *                             | 254                   | 282                  | 259                  | 290                  | 388                   | 458                   | 488                   | 272                  | 340                  | 456                   | 678                   | —                     |
| HDP 160 3   | 28.5  | 35                            | 138550         | 541            | *                             | 256                   | 284                  | 261                  | 292                  | 390                   | 460                   | 490                   | 274                  | 342                  | 458                   | 680                   | —                     |
| HDP 160 3   | 31.0  | 32                            | 138270         | 496            | *                             | 257                   | 285                  | 262                  | 293                  | 391                   | 461                   | 491                   | 275                  | 343                  | 459                   | 681                   | —                     |
| HDP 160 3   | 33.9  | 29.5                          | 143440         | 470            | 197                           | 263                   | 291                  | 268                  | 299                  | 397                   | 467                   | 497                   | 281                  | 349                  | 465                   | 687                   | —                     |
| HDP 160 3   | 39.6  | 25.2                          | 145050         | 407            | 199                           | 265                   | 293                  | 270                  | 301                  | 399                   | 469                   | —                     | 283                  | 351                  | 467                   | —                     | —                     |
| HDP 160 3   | 43.1  | 23.2                          | 137210         | 355            | 199                           | 265                   | 293                  | 270                  | 301                  | 399                   | —                     | —                     | 283                  | 351                  | 467                   | —                     | —                     |
| HDP 160 3   | 49.4  | 20.3                          | 138770         | 313            | 218                           | 284                   | 312                  | 289                  | 320                  | —                     | —                     | —                     | 302                  | 370                  | —                     | —                     | —                     |
| HDP 160 3   | 57.6  | 17.4                          | 144930         | 280            | 219                           | 285                   | —                    | 290                  | —                    | —                     | —                     | —                     | 303                  | —                    | —                     | —                     | —                     |
| HDP 160 3   | 62.6  | 16.0                          | 137140         | 244            | 219                           | 285                   | —                    | 290                  | —                    | —                     | —                     | —                     | 303                  | —                    | —                     | —                     | —                     |
| HDP 160 3   | 68.6  | 14.6                          | 143440         | 233            | 222                           | 288                   | —                    | 293                  | —                    | —                     | —                     | —                     | 306                  | —                    | —                     | —                     | —                     |
| HDP 160 3   | 80.0  | 12.5                          | 146300         | 203            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 3   | 87.0  | 11.5                          | 144010         | 184            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 101.1 | 9.9                           | 132640         | 149            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 117.9 | 8.5                           | 146300         | 141            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 128.2 | 7.8                           | 147070         | 130            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 140.4 | 7.1                           | 141170         | 114            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 163.9 | 6.1                           | 146300         | 101            | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 178.1 | 5.6                           | 147070         | 94             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 194.1 | 5.2                           | 132640         | 78             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 226.6 | 4.4                           | 146300         | 73             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 246.3 | 4.1                           | 147070         | 68             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 269.7 | 3.7                           | 143440         | 60             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 314.8 | 3.2                           | 146300         | 53             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |
| HDP 160 4   | 342.2 | 2.9                           | 147070         | 49             | —                             | —                     | —                    | —                    | —                    | —                     | —                     | —                     | —                    | —                    | —                     | —                     | —                     |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary

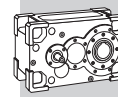


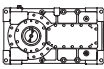
HDP

| HDP 170   |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                    |                          |                    |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|--------------------|--------------------------|--------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                    | $t_a = 40^\circ\text{C}$ |                    |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] |
| HDP 170 2   | 7.8   | 191                            | 133930         | 2796           | *                             | *                  | *                        | *                  |
| HDP 170 2   | 9.1   | 165                            | 140750         | 2532           | *                             | *                  | *                        | *                  |
| HDP 170 2   | 9.8   | 152                            | 143860         | 2389           | *                             | *                  | *                        | *                  |
| HDP 170 2   | 11.3  | 133                            | 144760         | 2099           | *                             | *                  | *                        | *                  |
| HDP 170 2   | 13.1  | 115                            | 159740         | 1996           | *                             | *                  | *                        | *                  |
| HDP 170 2   | 14.2  | 106                            | 163600         | 1887           | *                             | *                  | *                        | *                  |
| HDP 170 2   | 15.4  | 98                             | 157710         | 1679           | *                             | *                  | *                        | *                  |
| HDP 170 2   | 17.8  | 84                             | 165580         | 1519           | *                             | 641                | *                        | *                  |
| HDP 170 2   | 19.3  | 78                             | 169600         | 1436           | *                             | 645                | *                        | *                  |
| HDP 170 3   | 23.2  | 65                             | 151770         | 1093           | *                             | *                  | *                        | *                  |
| HDP 170 3   | 26.9  | 56                             | 176160         | 1093           | *                             | *                  | *                        | *                  |
| HDP 170 3   | 29.1  | 51                             | 182320         | 1044           | *                             | 420                | *                        | *                  |
| HDP 170 3   | 31.6  | 48                             | 177810         | 940            | *                             | 434                | *                        | *                  |
| HDP 170 3   | 36.7  | 41                             | 190190         | 866            | *                             | 436                | *                        | *                  |
| HDP 170 3   | 39.7  | 38                             | 182210         | 766            | *                             | 438                | *                        | *                  |
| HDP 170 3   | 45.1  | 33                             | 183920         | 680            | 336                           | 481                | *                        | 336                |
| HDP 170 3   | 52.4  | 28.6                           | 189610         | 604            | 338                           | 483                | *                        | 338                |
| HDP 170 3   | 56.7  | 26.4                           | 180610         | 531            | 338                           | 483                | 232                      | 338                |
| HDP 170 3   | 61.4  | 24.4                           | 188900         | 513            | 344                           | 489                | 238                      | 344                |
| HDP 170 3   | 71.3  | 21.0                           | 188320         | 441            | 346                           | 491                | 239                      | 345                |
| HDP 170 3   | 77.2  | 19.4                           | 179410         | 388            | 346                           | 491                | 240                      | 346                |
| HDP 170 4   | 92.7  | 16.2                           | 183920         | 338            | 212                           | 322                | *                        | 212                |
| HDP 170 4   | 107.6 | 13.9                           | 190190         | 301            | 213                           | 323                | 132                      | 213                |
| HDP 170 4   | 116.6 | 12.9                           | 182320         | 266            | 223                           | 333                | 142                      | 223                |
| HDP 170 4   | 126.3 | 11.9                           | 188900         | 255            | 229                           | 339                | 149                      | 230                |
| HDP 170 4   | 146.6 | 10.2                           | 190190         | 221            | —                             | —                  | 149                      | 230                |
| HDP 170 4   | 158.8 | 9.4                            | 182320         | 196            | —                             | —                  | 156                      | 237                |
| HDP 170 4   | 177.4 | 8.5                            | 183920         | 177            | —                             | —                  | 176                      | 257                |
| HDP 170 4   | 206.0 | 7.3                            | 190190         | 157            | —                             | —                  | —                        | —                  |
| HDP 170 4   | 223.1 | 6.7                            | 182320         | 139            | —                             | —                  | —                        | —                  |
| HDP 170 4   | 241.7 | 6.2                            | 188900         | 133            | —                             | —                  | —                        | —                  |
| HDP 170 4   | 280.5 | 5.3                            | 190190         | 115            | —                             | —                  | —                        | —                  |
| HDP 170 4   | 303.8 | 4.9                            | 182320         | 102            | —                             | —                  | —                        | —                  |

\* 

— Thermal verification not necessary



| HDP 180   |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                    |                          |                    |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|--------------------|--------------------------|--------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                    | $t_a = 40^\circ\text{C}$ |                    |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] |
| HDP 180 2   | 8.7   | 172                            | 148810         | 2796           | *                             | *                  | *                        | *                  |
| HDP 180 2   | 10.1  | 149                            | 155960         | 2533           | *                             | *                  | *                        | *                  |
| HDP 180 2   | 10.9  | 138                            | 159170         | 2390           | *                             | *                  | *                        | *                  |
| HDP 180 2   | 12.5  | 120                            | 160840         | 2099           | *                             | *                  | *                        | *                  |
| HDP 180 2   | 14.5  | 103                            | 176950         | 1996           | *                             | *                  | *                        | *                  |
| HDP 180 2   | 15.7  | 96                             | 180960         | 1887           | *                             | *                  | *                        | *                  |
| HDP 180 2   | 17.1  | 88                             | 175290         | 1680           | *                             | *                  | *                        | *                  |
| HDP 180 2   | 19.8  | 76                             | 183470         | 1519           | *                             | 678                | *                        | *                  |
| HDP 180 2   | 21.4  | 70                             | 187640         | 1437           | *                             | 682                | *                        | *                  |
| HDP 180 3   | 25.8  | 58                             | 168630         | 1093           | *                             | 441                | *                        | *                  |
| HDP 180 3   | 29.8  | 50                             | 195130         | 1093           | *                             | 445                | *                        | *                  |
| HDP 180 3   | 32.2  | 47                             | 200130         | 1036           | *                             | 446                | *                        | *                  |
| HDP 180 3   | 35.1  | 43                             | 197560         | 940            | *                             | 459                | *                        | *                  |
| HDP 180 3   | 40.6  | 37                             | 202450         | 832            | *                             | 462                | *                        | *                  |
| HDP 180 3   | 43.9  | 34                             | 198410         | 754            | 318                           | 463                | *                        | 311                |
| HDP 180 3   | 50.1  | 29.9                           | 204380         | 680            | 361                           | 506                | *                        | 354                |
| HDP 180 3   | 58.0  | 25.9                           | 202450         | 583            | 363                           | 508                | 250                      | 356                |
| HDP 180 3   | 62.7  | 23.9                           | 196680         | 523            | 363                           | 508                | 251                      | 357                |
| HDP 180 3   | 68.3  | 22.0                           | 209900         | 513            | 369                           | 514                | 257                      | 363                |
| HDP 180 3   | 79.0  | 19.0                           | 202450         | 428            | 370                           | 515                | 258                      | 364                |
| HDP 180 3   | 85.4  | 17.6                           | 195370         | 382            | 371                           | 516                | 258                      | 364                |
| HDP 180 4   | 103.0 | 14.6                           | 204380         | 338            | 231                           | 341                | 145                      | 226                |
| HDP 180 4   | 119.2 | 12.6                           | 202450         | 289            | 231                           | 341                | 146                      | 227                |
| HDP 180 4   | 128.9 | 11.6                           | 205480         | 271            | 241                           | 351                | 155                      | 236                |
| HDP 180 4   | 140.3 | 10.7                           | 209900         | 255            | 248                           | 358                | 162                      | 243                |
| HDP 180 4   | 162.4 | 9.2                            | 202450         | 212            | —                             | —                  | 163                      | 244                |
| HDP 180 4   | 175.6 | 8.5                            | 207020         | 201            | —                             | —                  | 170                      | 251                |
| HDP 180 4   | 197.2 | 7.6                            | 204380         | 177            | —                             | —                  | —                        | —                  |
| HDP 180 4   | 228.1 | 6.6                            | 202450         | 151            | —                             | —                  | —                        | —                  |
| HDP 180 4   | 246.7 | 6.1                            | 205480         | 142            | —                             | —                  | —                        | —                  |
| HDP 180 4   | 268.5 | 5.6                            | 209900         | 133            | —                             | —                  | —                        | —                  |
| HDP 180 4   | 310.7 | 4.8                            | 202450         | 111            | —                             | —                  | —                        | —                  |
| HDP 180 4   | 336.1 | 4.5                            | 207020         | 105            | —                             | —                  | —                        | —                  |

\*  BONFIGLIOLI TECHNICAL SERVICE




— Thermal verification not necessary



## 18 MASS MOMENT OF INERTIA

Moments of inertia listed refer to gearbox input shaft and apply exclusively for configurations with a single extension input and output shaft.

HDP

|  | $i_n$ | $J \cdot 10^{-4} \text{ [kg m}^2\text{]}$ |        |        |        |         |         |         |         |         |         |         |         |         |         |
|--|-------|---|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|  |       | HDP 60                                    | HDP 70 | HDP 80 | HDP 90 | HDP 100 | HDP 110 | HDP 120 | HDP 125 | HDP 130 | HDP 140 | HDP 150 | HDP 160 | HDP 170 | HDP 180 |
| <b>2x</b><br>   | 7.1   | 120                                       | —      | —      | —      | 1220    | —       | —       | —       | 5602    | —       | —       | —       |         |         |
|  | 8.0   | 116                                       | 143    | 335    | 600    | 1170    | 1288    | 2558    | —       | 5402    | 6157    | 12297   | —       |         |         |
|  | 9.0   | 95  | 133    | 314    | 570    | 918     | 1232    | 2481    | 2729    | 4446    | 5858    | 11477   | 13554   |         |         |
|  | 10.0  | 92  | 109    | 263    | 440    | 884     | 963     | 1804    | 2643    | 4303    | 4840    | 11094   | 12503   |         |         |
|  | 11.2  | 68  | 103    | 248    | 421    | 682     | 926     | 1759    | 1905    | 3050    | 4627    | 7584    | 12014   |         |         |
|  | 12.5  | 67  | 77     | 183    | 324    | 661     | 712     | 1285    | 1854    | 2967    | 3279    | 7165    | 8226    |         |         |
|  | 14.0  | 54  | 74     | 175    | 311    | 508     | 688     | 1256    | 1348    | 1916    | 3155    | 6970    | 7689    |         |         |
|  | 16.0  | 53  | 60     | 132    | 226    | 494     | 526     | 1038    | 1316    | 1863    | 2062    | 4651    | 7439    |         |         |
|  | 18.0  | 33  | 58     | 127    | 219    | 388     | 511     | 1019    | 1080    | 1418    | 1983    | 4434    | 4983    |         |         |
|  | 20.0  | 33  | 40     | 99     | 171    | 379     | 399     | 717     | 1059    | 1383    | 1514    | 4332    | 4705    |         |         |
|  | 22.4  | —   | 38     | 95     | 166    | 374     | 390     | 705     | 742     | 1621    | 1462    | —       | 4576    |         |         |
| 25.0   | —     | —   | —      | —      | —      | 378     | 689     | 729     | —       | 1401    | —       | —       |         |         |         |
| <b>3x</b><br> | 22.4  | 33  | —      | —      | —      | 346     | —       | —       | —       | 1365    | —       | 4112    | —       |         |         |
|  | 25.0  | 33  | 36     | 85     | 177    | 341     | 354     | 468     | —       | 1343    | 1427    | 4002    | 4282    |         |         |
|  | 28.0  | 29  | 35     | 83     | 174    | 307     | 348     | 461     | 485     | 1147    | 1394    | 3950    | 4140    |         |         |
|  | 31.5  | 29  | 30     | 68     | 156    | 304     | 312     | 382     | 476     | 1134    | 1183    | 3433    | 4074    |         |         |
|  | 35.5  | 27  | 30     | 67     | 154    | 279     | 308     | 378     | 393     | 1031    | 1163    | 3375    | 3521    |         |         |
|  | 40.0  | 27  | 28     | 67     | 91     | 277     | 282     | 341     | 387     | 1023    | 1054    | 3348    | 3447    |         |         |
|  | 45.0  | 24  | 27     | 66     | 90     | 261     | 280     | 338     | 348     | 959     | 1041    | 1306    | 3413    |         |         |
|  | 50.0  | 24  | 25     | 44     | 82     | 260     | 263     | 296     | 345     | 953     | 974     | 1278    | 1347    |         |         |
|  | 56.0  | 11  | 25     | 44     | 82     | 110     | 262     | 294     | 300     | 414     | 966     | 1266    | 1312    |         |         |
|  | 63.0  | 11  | 12     | 41     | 77     | 109     | 111     | 137     | 298     | 410     | 451     | 1139    | 1296    |         |         |
|  | 71.0  | 11  | 12     | 41     | 77     | 102     | 110     | 136     | 140     | 384     | 446     | 1125    | 1161    |         |         |
|  | 80.0  | 11  | 11     | 21     | 39     | 102     | 103     | 126     | 138     | 382     | 390     | 1118    | 1143    |         |         |
|  | 90.0  | 10  | 11     | 21     | 38     | 97      | 103     | 126     | 128     | 365     | 387     | —       | 1134    |         |         |
|  | 100.0 | 10  | 10     | 20     | 36     | 97      | 98      | 112     | 127     | 364     | 369     | —       | —       |         |         |
| 112.0  | —     | 10  | 20     | 36     | 97     | 97      | 111     | 116     | 374     | 367     | —       | —       |         |         |         |
| 125.0  | —     | —   | —      | —      | —      | 97      | 111     | 115     | —       | 365     | —       | —       |         |         |         |
| <b>4x</b><br> | 90.0  | —   | —      | —      | —      | —       | —       | —       | —       | —       | —       | 510     | —       |         |         |
|  | 100.0 | —   | —      | —      | —      | —       | —       | —       | —       | —       | —       | 503     | 519     |         |         |
|  | 112.0 | —   | —      | —      | —      | 46      | —       | —       | —       | 244     | —       | 500     | 511     |         |         |
|  | 125.0 | —   | —      | —      | —      | 46      | 47      | 51      | —       | 243     | —       | 470     | 507     |         |         |
|  | 140.0 | —   | —      | —      | —      | 45      | 46      | 51      | 52      | 237     | 245     | 466     | 475     |         |         |
|  | 160.0 | —   | —      | —      | —      | 44      | 45      | 49      | 52      | 239     | 238     | 465     | 471     |         |         |
|  | 180.0 | —   | —      | —      | —      | 43      | 40      | 49      | 45      | 214     | 237     | 184     | 469     |         |         |
|  | 200.0 | —   | —      | —      | —      | 43      | 44      | 46      | 45      | 214     | 233     | 182     | 187     |         |         |
|  | 224.0 | —   | —      | —      | —      | 39      | 43      | 46      | 43      | 212     | 215     | 181     | 184     |         |         |
|  | 250.0 | —   | —      | —      | —      | 39      | 16      | 41      | 43      | 211     | 212     | 173     | 183     |         |         |
|  | 280.0 | —   | —      | —      | —      | 16      | 16      | 41      | 41      | 74      | 212     | 172     | 175     |         |         |
|  | 315.0 | —   | —      | —      | —      | 16      | 16      | 17      | 18      | 73      | 74      | 172     | 173     |         |         |
|  | 355.0 | —   | —      | —      | —      | 15      | 16      | 17      | 17      | 68      | 74      | —       | 173     |         |         |
|  | 400.0 | —   | —      | —      | —      | 15      | 15      | 15      | 16      | 68      | 68      | —       | —       |         |         |
| 450.0  | —     | —   | —      | —      | 14     | 15      | 16      | 16      | 67      | 68      | —       | —       |         |         |         |
| 500.0  | —     | —   | —      | —      | 14     | 14      | 15      | 16      | 67      | 67      | —       | —       |         |         |         |

BONFIGLIOLI TECHNICAL SERVICE  




19 EXACT RATIOS

|               | i <sub>N</sub> | i       |         |         |         |         |         |         |         |         |         |         |         |         |         |
|---------------|----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|               |                | HDP 60  | HDP 70  | HDP 80  | HDP 90  | HDP 100 | HDP 110 | HDP 120 | HDP 125 | HDP 130 | HDP 140 | HDP 150 | HDP 160 | HDP 170 | HDP 180 |
| <b>2x</b><br> | 7.1            | 7.146   | —       | —       | —       | 7.400   | —       | —       | —       | 7.263   | —       | —       | —       | —       | —       |
|               | 8.0            | 8.031   | 8.039   | 8.063   | 7.929   | 8.222   | 8.085   | 7.907   | —       | 7.929   | 8.359   | 7.905   | —       | 7.833   | —       |
|               | 9.0            | 8.969   | 9.333   | 9.361   | 8.828   | 9.106   | 8.956   | 8.611   | 8.922   | 8.613   | 9.250   | 9.263   | 8.977   | 9.092   | 8.704   |
|               | 10.0           | 10.079  | 10.090  | 9.844   | 10.059  | 10.118  | 9.949   | 10.302  | 9.601   | 9.402   | 9.913   | 10.087  | 10.478  | 9.848   | 10.071  |
|               | 11.2           | 11.156  | 11.714  | 11.429  | 11.200  | 11.250  | 11.021  | 11.219  | 11.624  | 11.307  | 10.969  | 11.063  | 11.389  | 11.278  | 10.892  |
|               | 12.5           | 12.538  | 12.551  | 12.600  | 12.214  | 12.500  | 12.292  | 13.013  | 12.508  | 12.343  | 13.013  | 12.963  | 12.563  | 13.090  | 12.531  |
|               | 14.0           | 13.533  | 14.571  | 14.629  | 13.600  | 14.160  | 13.616  | 14.171  | 14.682  | 14.133  | 14.400  | 14.116  | 14.663  | 14.178  | 14.500  |
|               | 16.0           | 15.209  | 15.225  | 15.488  | 15.807  | 15.733  | 15.471  | 15.976  | 15.800  | 15.429  | 16.267  | 15.370  | 15.938  | 15.361  | 15.681  |
|               | 18.0           | 17.267  | 17.676  | 17.981  | 17.600  | 18.000  | 17.138  | 17.398  | 18.025  | 17.431  | 18.000  | 18.010  | 17.454  | 17.830  | 17.068  |
|               | 20.0           | 19.404  | 19.425  | 19.441  | 20.086  | 20.000  | 19.667  | 20.624  | 19.397  | 19.029  | 20.062  | 19.612  | 20.371  | 19.311  | 19.750  |
|               | 22.4           | —       | 22.552  | 22.571  | 22.364  | 21.786  | 21.786  | 22.459  | 23.269  | 21.652  | 22.200  | —       | 22.143  | —       | 21.359  |
| 25.0          | —              | —       | —       | —       | —       | 25.000  | 25.357  | 25.040  | —       | 24.941  | —       | —       | —       | —       |         |
| <b>3x</b><br> | 22.4           | 22.686  | —       | —       | —       | 22.765  | —       | —       | —       | 21.785  | —       | 21.510  | —       | 23.182  | —       |
|               | 25.0           | 25.494  | 25.521  | 25.800  | 25.406  | 25.294  | 24.873  | 25.756  | —       | 23.781  | 25.073  | 25.205  | 24.427  | 26.908  | 25.758  |
|               | 28.0           | 28.219  | 29.630  | 29.954  | 28.288  | 28.125  | 27.553  | 28.048  | 29.059  | 28.599  | 27.744  | 27.448  | 28.510  | 29.143  | 29.806  |
|               | 31.5           | 31.713  | 31.746  | 31.713  | 32.878  | 31.250  | 30.729  | 32.533  | 31.271  | 31.220  | 32.916  | 29.886  | 30.990  | 31.576  | 32.234  |
|               | 35.5           | 34.231  | 36.857  | 36.818  | 36.608  | 35.400  | 34.040  | 35.429  | 36.706  | 35.749  | 36.424  | 35.019  | 33.938  | 36.650  | 35.084  |
|               | 40.0           | 38.470  | 38.510  | 39.809  | 40.036  | 39.333  | 38.678  | 39.940  | 39.500  | 39.025  | 41.145  | 38.135  | 39.611  | 39.695  | 40.597  |
|               | 45.0           | 43.675  | 44.710  | 46.218  | 44.578  | 45.000  | 42.845  | 43.495  | 45.063  | 44.090  | 45.529  | 43.460  | 43.056  | 45.111  | 43.905  |
|               | 50.0           | 49.082  | 49.134  | 51.625  | 51.811  | 50.000  | 49.167  | 51.560  | 48.493  | 48.131  | 50.746  | 50.924  | 49.353  | 52.361  | 50.123  |
|               | 56.0           | 56.578  | 57.044  | 59.937  | 57.689  | 55.547  | 54.464  | 56.148  | 58.172  | 56.533  | 56.153  | 55.456  | 57.603  | 56.711  | 58.000  |
|               | 63.0           | 63.583  | 63.650  | 64.805  | 65.837  | 61.719  | 60.690  | 64.253  | 62.600  | 61.714  | 65.067  | 60.381  | 62.612  | 61.444  | 62.726  |
|               | 71.0           | 68.633  | 73.898  | 75.238  | 73.306  | 69.915  | 67.229  | 69.971  | 72.494  | 70.667  | 72.000  | 70.752  | 68.568  | 71.319  | 68.272  |
|               | 80.0           | 77.131  | 77.213  | 76.405  | 77.818  | 77.683  | 76.389  | 78.882  | 78.013  | 77.143  | 81.333  | 77.048  | 80.031  | 77.244  | 79.000  |
|               | 90.0           | 87.567  | 89.644  | 88.706  | 86.646  | 88.875  | 84.619  | 85.902  | 88.999  | 87.156  | 90.000  | —       | 86.990  | —       | 85.437  |
|               | 100.0          | 98.408  | 98.513  | 95.911  | 98.884  | 98.750  | 97.104  | 101.830 | 95.774  | 95.143  | 100.311 | —       | —       | —       | —       |
| 112.0         | —              | 114.373 | 111.352 | 110.102 | 107.567 | 107.567 | 110.892 | 114.890 | 108.259 | 111.000 | —       | —       | —       | —       |         |
| 125.0         | —              | —       | —       | —       | —       | 123.438 | 125.201 | 123.636 | —       | 124.704 | —       | —       | —       | —       |         |
| <b>4x</b><br> | 90.0           | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | 88.989  | —       | 92.728  | —       |
|               | 100.0          | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       | 104.273 | 101.055 | 107.631 | 103.032 |
|               | 112.0          | —       | —       | —       | —       | 110.625 | —       | —       | —       | 111.182 | —       | 113.553 | 117.948 | 116.573 | 119.222 |
|               | 125.0          | —       | —       | —       | —       | 122.917 | 120.868 | 127.964 | —       | 121.371 | —       | 123.638 | 128.205 | 126.302 | 128.937 |
|               | 140.0          | —       | —       | —       | —       | 139.240 | 133.891 | 139.352 | 144.376 | 138.978 | 141.600 | 144.873 | 140.402 | 146.601 | 140.336 |
|               | 160.0          | —       | —       | —       | —       | 154.711 | 168.525 | 157.099 | 155.367 | 151.714 | 159.956 | 157.765 | 163.872 | 158.780 | 162.389 |
|               | 180.0          | —       | —       | —       | —       | 177.000 | 190.972 | 171.080 | 181.235 | 176.667 | 177.000 | 170.942 | 178.122 | 177.437 | 175.621 |
|               | 200.0          | —       | —       | —       | —       | 196.667 | 193.389 | 202.801 | 195.031 | 192.857 | 197.279 | 200.301 | 194.121 | 205.954 | 197.152 |
|               | 225.0          | —       | —       | —       | —       | 222.188 | 214.226 | 220.849 | 222.499 | 217.889 | 225.000 | 218.127 | 226.571 | 223.064 | 228.133 |
|               | 250.0          | —       | —       | —       | —       | 246.875 | 248.643 | 254.575 | 246.228 | 237.857 | 250.778 | 237.499 | 246.272 | 241.681 | 246.722 |
|               | 280.0          | —       | —       | —       | —       | 286.437 | 275.434 | 277.231 | 287.226 | 274.481 | 277.500 | 278.290 | 269.702 | 280.523 | 268.535 |
|               | 315.0          | —       | —       | —       | —       | 318.263 | 312.958 | 323.176 | 319.611 | 299.636 | 315.912 | 303.056 | 314.787 | 303.828 | 310.733 |
|               | 355.0          | —       | —       | —       | —       | 359.563 | 346.679 | 351.936 | 364.624 | 348.917 | 349.575 | —       | 342.160 | —       | 336.052 |
|               | 400.0          | —       | —       | —       | —       | 399.514 | 392.856 | 405.681 | 401.207 | 380.893 | 401.583 | —       | —       | —       | —       |
|               | 450.0          | —       | —       | —       | —       | 457.071 | 440.694 | 454.317 | 457.712 | 469.768 | 444.375 | —       | —       | —       | —       |
| 500.0         | —              | —       | —       | —       | 507.857 | 499.393 | 523.697 | 506.527 | 534.530 | 495.286 | —       | —       | —       | —       |         |

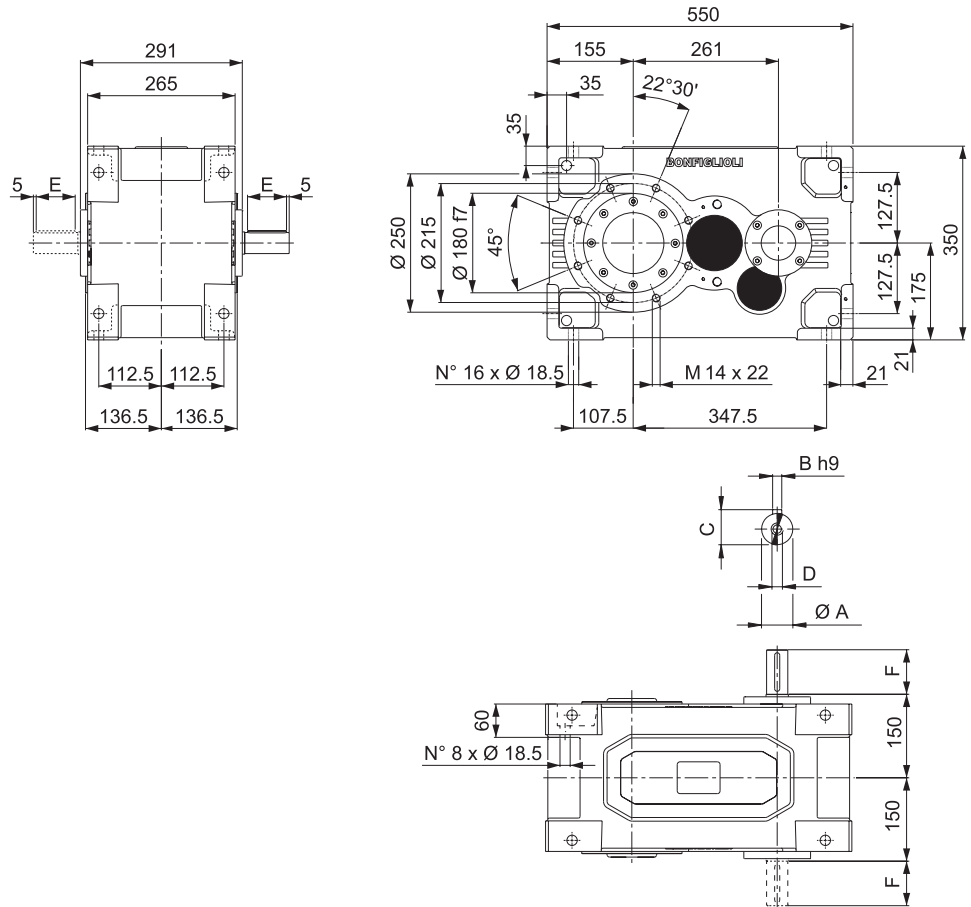
HDP



20 DIMENSIONS AND WEIGHT

HDP

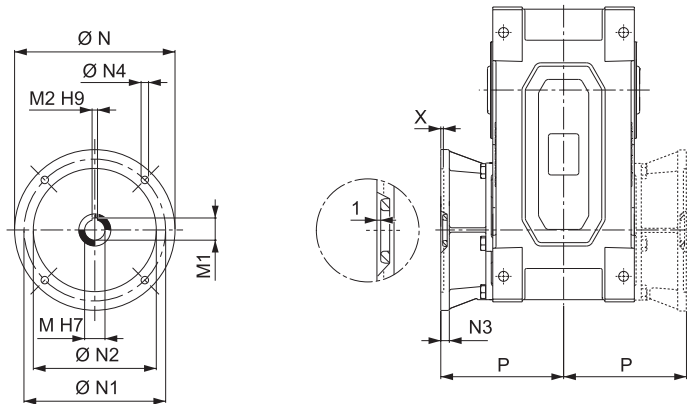
HDP 60



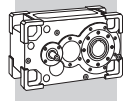
VP

| VP       | i =           | A     | B  | C  | D      | E  | F  | Kg LP |
|----------|---------------|-------|----|----|--------|----|----|-------|
| HDP 60 2 | 7.1 ... 15.2  | 38 k6 | 10 | 41 | M12x28 | 70 | 80 | 161   |
| HDP 60 2 | 17.3 ... 19.4 | 32 k6 | 10 | 35 | M12x28 | 70 | 80 | 161   |
| HDP 60 3 | 22.7 ... 49.1 | 32 k6 | 10 | 35 | M12x28 | 70 | 80 | 164   |
| HDP 60 3 | 56.6 ... 98.4 | 28 j6 | 8  | 31 | M10x22 | 50 | 60 | 164   |

AD

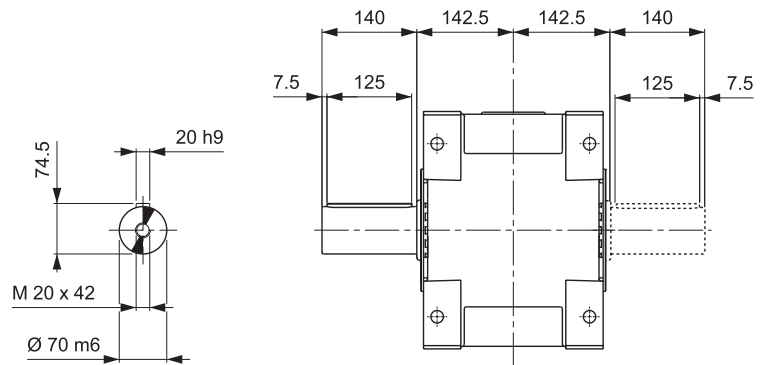


| AD           | M  | M1   | M2 | N   | N1  | N2  | N3 | N4 | X | P   |
|--------------|----|------|----|-----|-----|-----|----|----|---|-----|
| HDP 60 3_112 | 28 | 31.3 | 8  | 250 | 215 | 180 | 15 | 14 | 5 | 220 |
| HDP 60 3_132 | 38 | 41.3 | 10 | 300 | 265 | 230 | 16 | 14 | 5 | 230 |
| HDP 60 3_160 | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18 | 6 | 261 |
| HDP 60 3_180 | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18 | 6 | 261 |

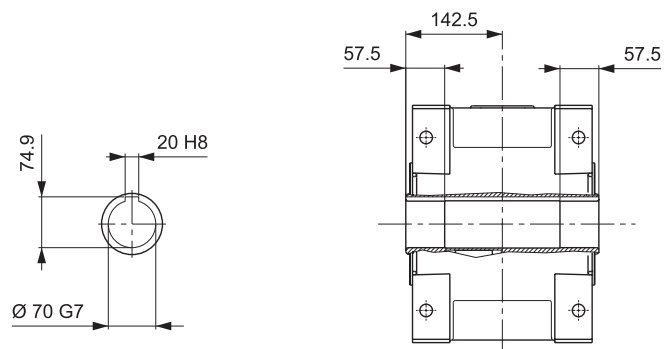


# HDP 60

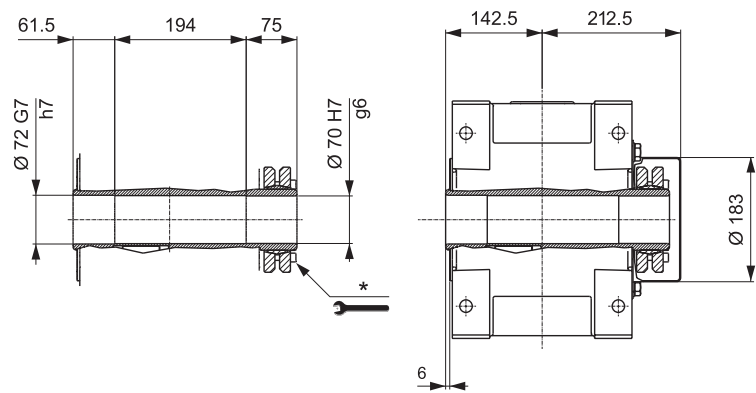
LP



H



S

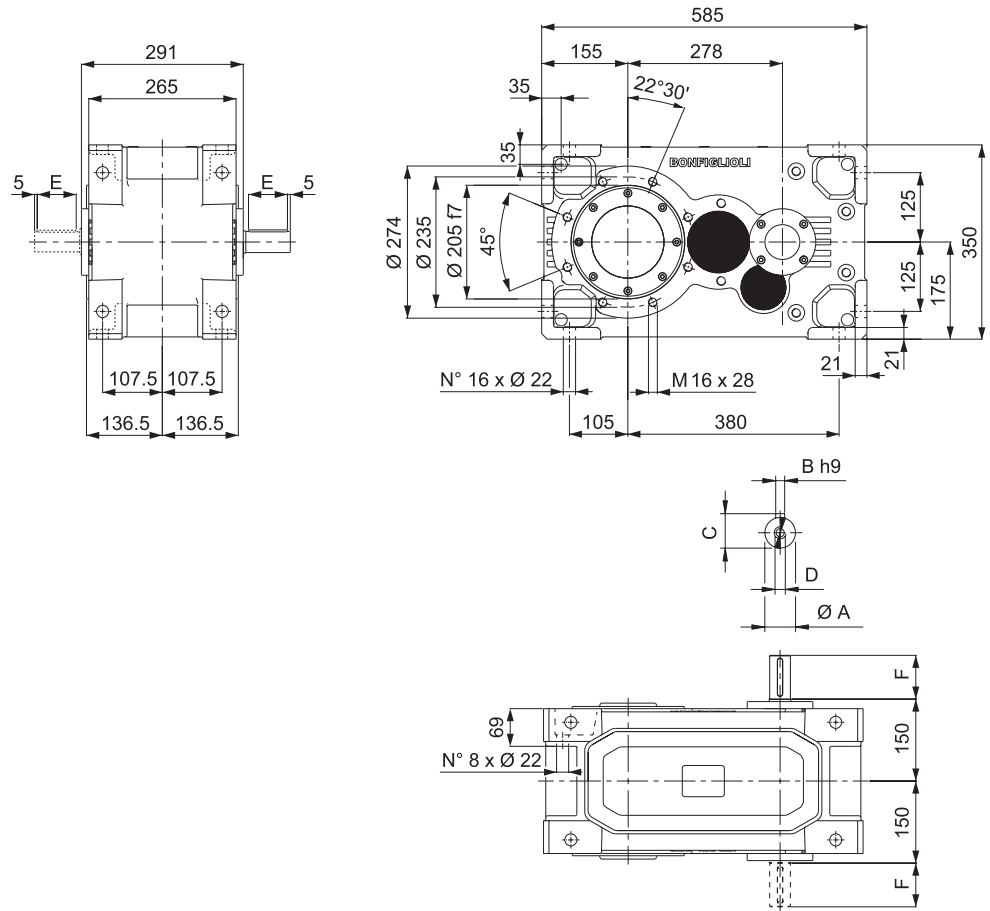


HDP

\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



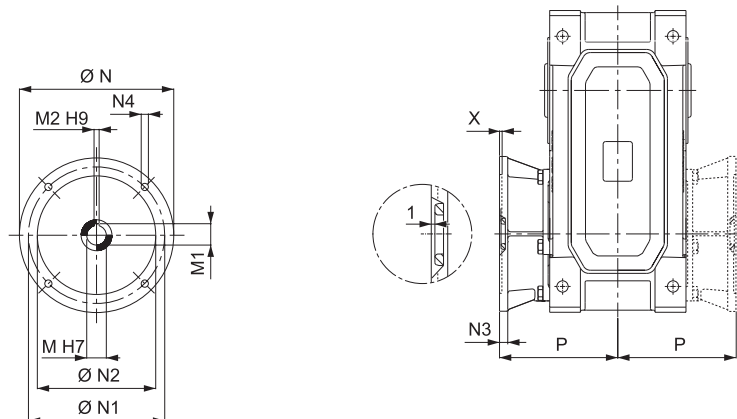
# HDP 70



## VP

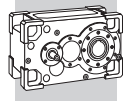
| VP       | i =            | A     | B  | C  | D      | E  | F  | kg LP |
|----------|----------------|-------|----|----|--------|----|----|-------|
| HDP 70 2 | 8.0 ... 17.7   | 38 k6 | 10 | 41 | M12x28 | 70 | 80 | 189   |
| HDP 70 2 | 19.4 ... 22.6  | 32 k6 | 10 | 35 | M12x28 | 70 | 80 | 189   |
| HDP 70 3 | 25.5 ... 57.0  | 32 k6 | 10 | 35 | M12x28 | 70 | 80 | 192   |
| HDP 70 3 | 63.7 ... 114.4 | 28 j6 | 8  | 31 | M10x22 | 50 | 60 | 192   |

## AD



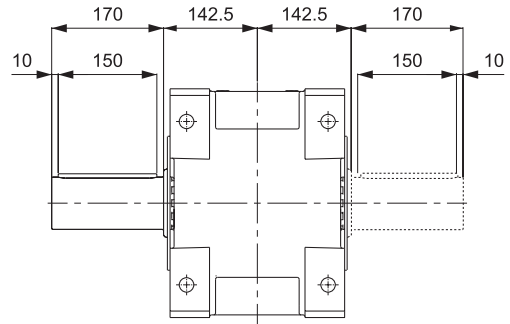
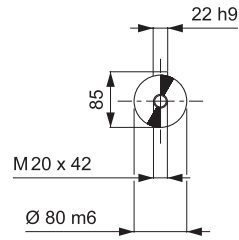
| AD           | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X | P   |
|--------------|----|------|----|-----|-----|-----|----|--------|---|-----|
| HDP 70 3_112 | 28 | 31.3 | 8  | 250 | 215 | 180 | 15 | 14     | 5 | 220 |
| HDP 70 3_132 | 38 | 41.3 | 10 | 300 | 265 | 230 | 16 | 14     | 5 | 230 |
| HDP 70 3_160 | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6 | 261 |
| HDP 70 3_180 | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6 | 261 |
| HDP 70 3_200 | 55 | 59.3 | 16 | 400 | 350 | 300 | -  | M16x23 | 7 | 286 |



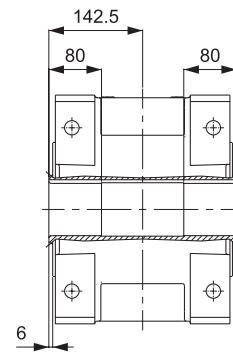
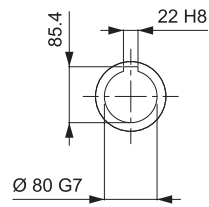


# HDP 70

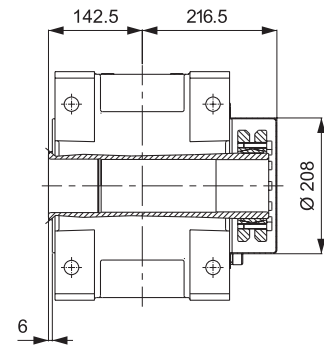
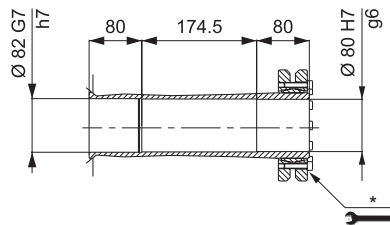
LP



H



S



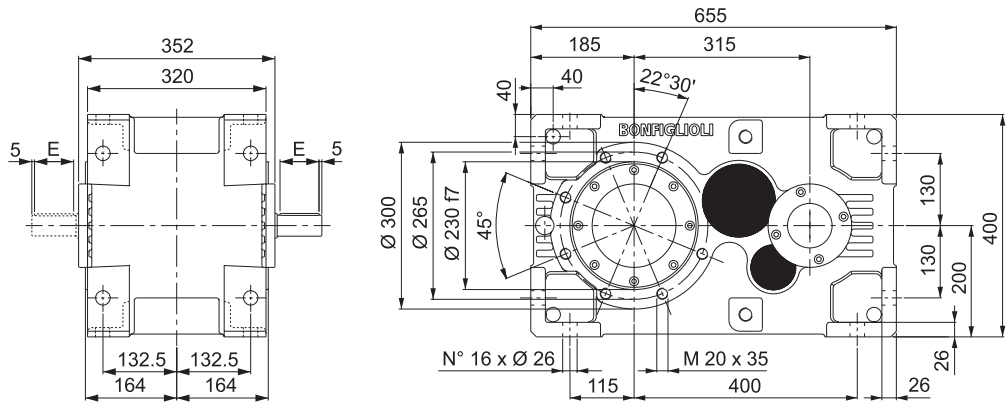
HDP

\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".

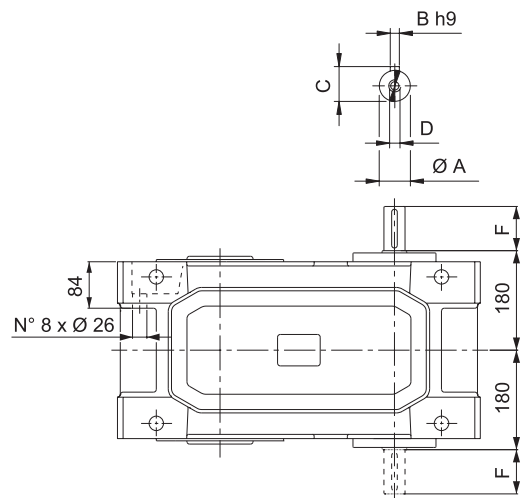


# HDP 80

HDP

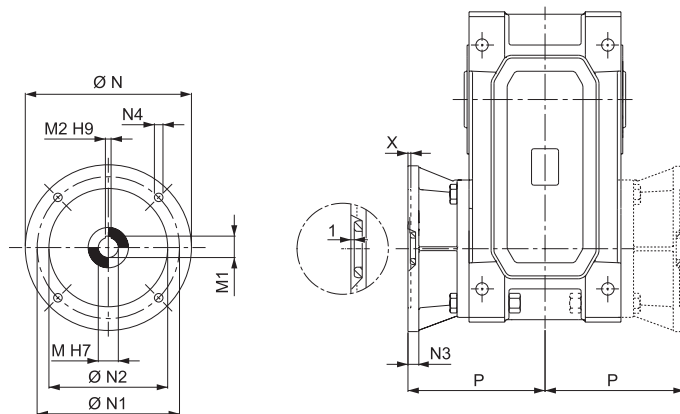


VP

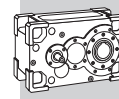


| VP       | i =            | A     | B  | C    | D      | E   | F   | Kg  | LP |
|----------|----------------|-------|----|------|--------|-----|-----|-----|----|
| HDP 80 2 | 8.1 ... 14.6   | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 301 |    |
| HDP 80 2 | 15.5 ... 22.6  | 38 k6 | 10 | 41   | M12x28 | 70  | 80  | 301 |    |
| HDP 80 3 | 25.8 ... 75.2  | 38 k6 | 10 | 41   | M12x28 | 70  | 80  | 306 |    |
| HDP 80 3 | 76.4 ... 114.4 | 28 j6 | 8  | 31   | M10x22 | 50  | 60  | 306 |    |

AD

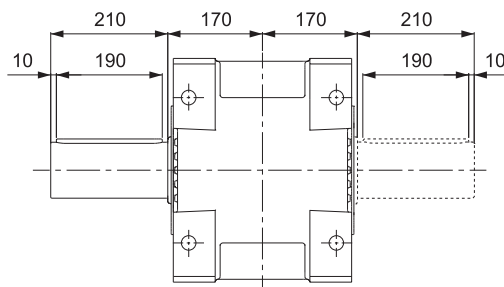
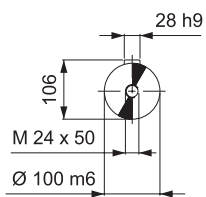


| AD           | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X | P     |
|--------------|----|------|----|-----|-----|-----|----|--------|---|-------|
| HDP 80 3_132 | 38 | 41.3 | 10 | 300 | 265 | 230 | 16 | 14     | 5 | 257.5 |
| HDP 80 3_160 | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6 | 288.5 |
| HDP 80 3_180 | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6 | 288.5 |
| HDP 80 3_200 | 55 | 59.3 | 16 | 400 | 350 | 300 | -  | M16x23 | 7 | 313.5 |

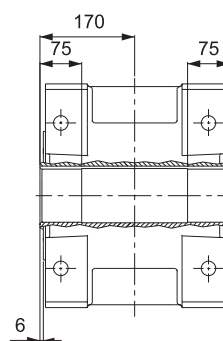
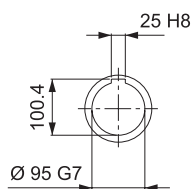


# HDP 80

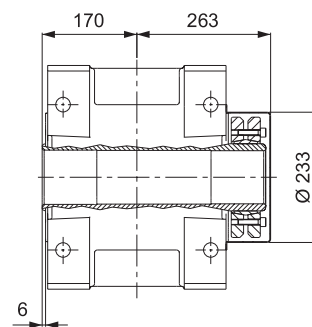
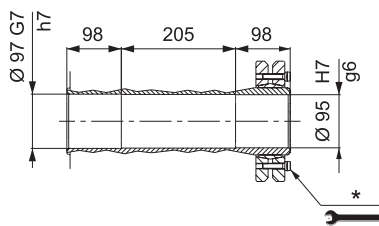
**LP**



**H**



**S**

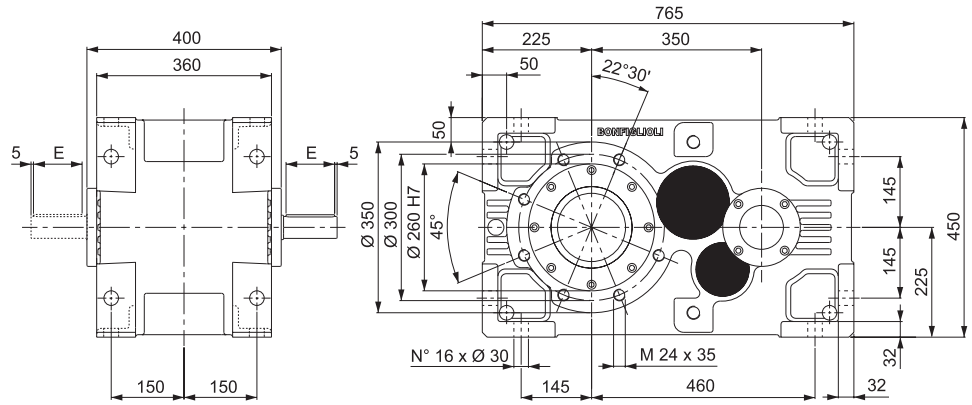


\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".

**HDP**

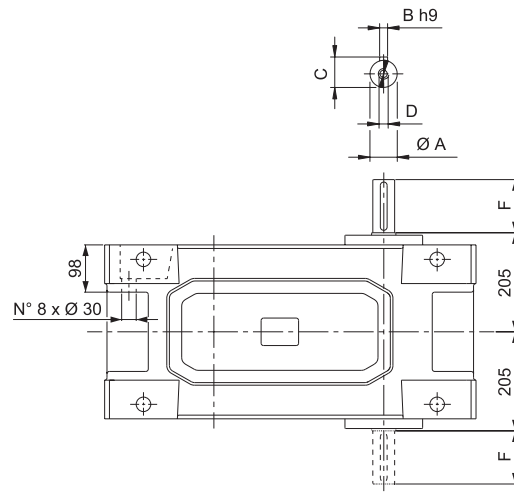


# HDP 90



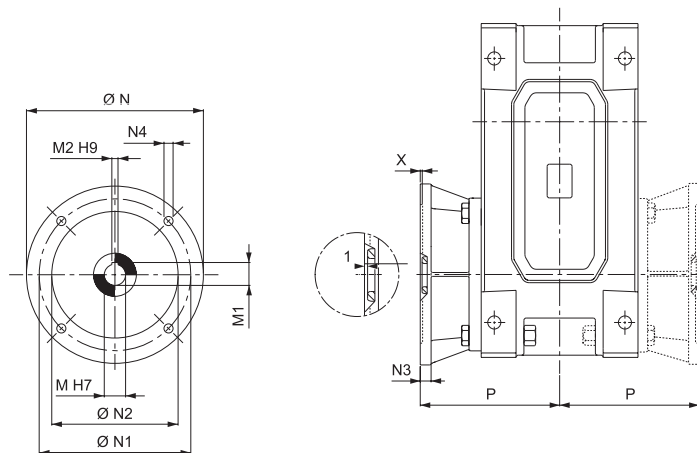
HDP

VP

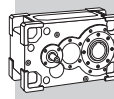


| VP       | i =            | A     | B  | C    | D      | E   | F   | LP  |
|----------|----------------|-------|----|------|--------|-----|-----|-----|
| HDP 90 2 | 7.9 ... 13.6   | 50 k6 | 14 | 53.5 | M16x36 | 100 | 110 | 429 |
| HDP 90 2 | 15.8 ... 22.4  | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 429 |
| HDP 90 3 | 25.4 ... 73.3  | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 440 |
| HDP 90 3 | 77.8 ... 110.1 | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 440 |

AD

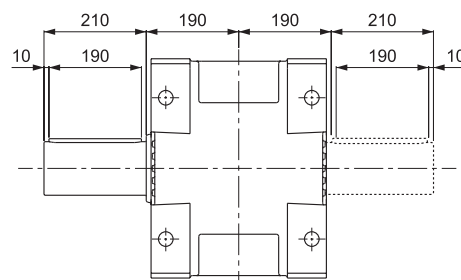
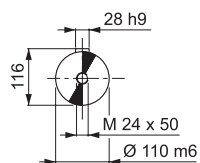


| AD           | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X | P     |
|--------------|----|------|----|-----|-----|-----|----|--------|---|-------|
| HDP 90 3_160 | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6 | 308.5 |
| HDP 90 3_180 | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6 | 308.5 |
| HDP 90 3_200 | 55 | 59.3 | 16 | 400 | 350 | 300 | -  | M16x23 | 7 | 333.5 |

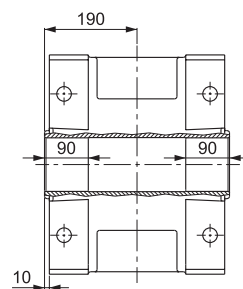
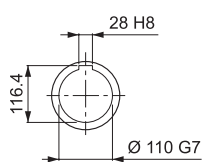


# HDP 90

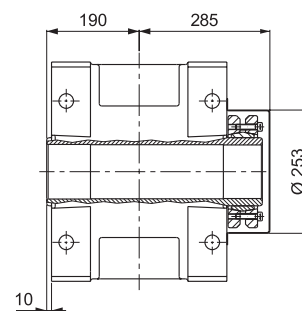
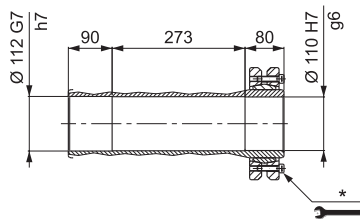
LP



H



S

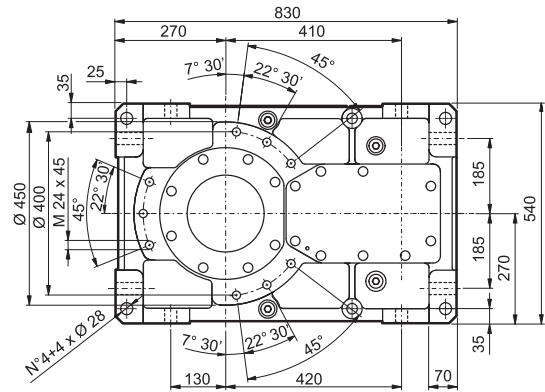
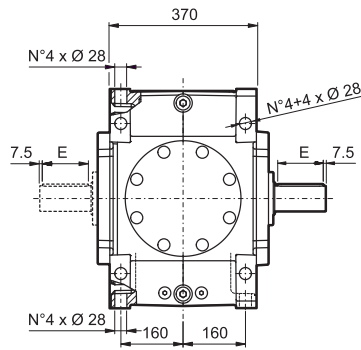


HDP

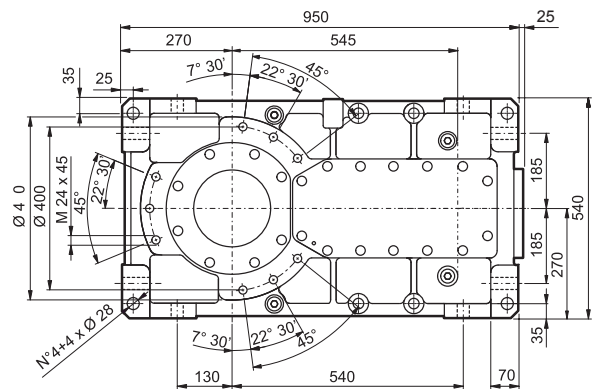
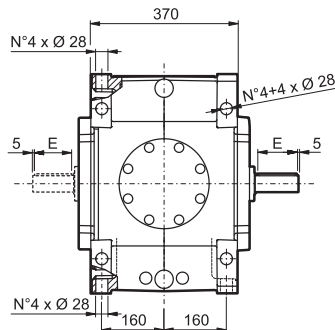
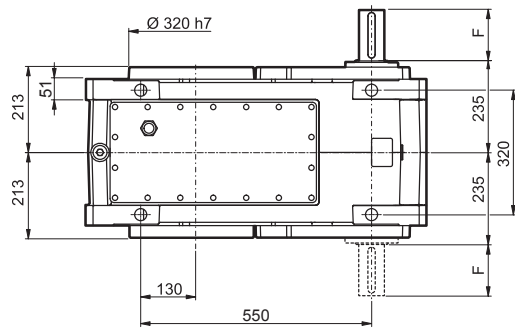
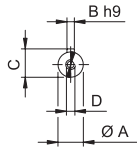
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



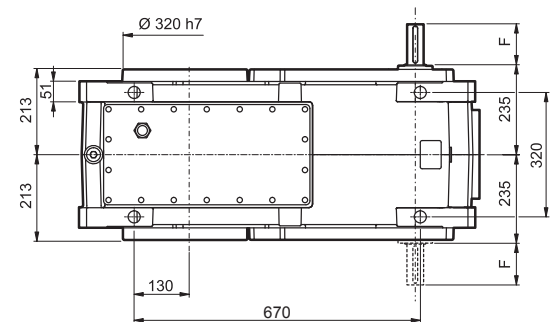
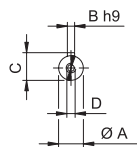
# HDP 100



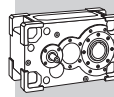
## HDP 100 2



## HDP 100 3 HDP 100 4

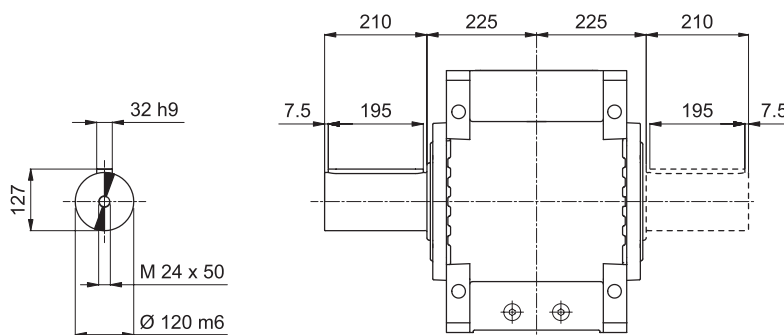


| VP        | i =             | A     | B  | C    | D      | E   | F   | LP  |
|-----------|-----------------|-------|----|------|--------|-----|-----|-----|
| HDP 100 2 | 7.4 ... 21.8    | 60 m6 | 18 | 64   | M20x42 | 125 | 140 | 625 |
| HDP 100 3 | 22.8 ... 50     | 48 k6 | 14 | 51.5 | M16x36 | 100 | 110 | 700 |
| HDP 100 3 | 55.5 ... 107.8  | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 700 |
| HDP 100 4 | 110.6 ... 507.9 | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 715 |



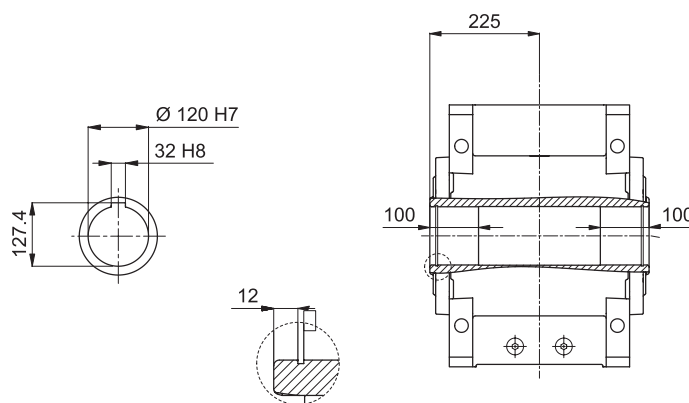
# HDP 100

LP

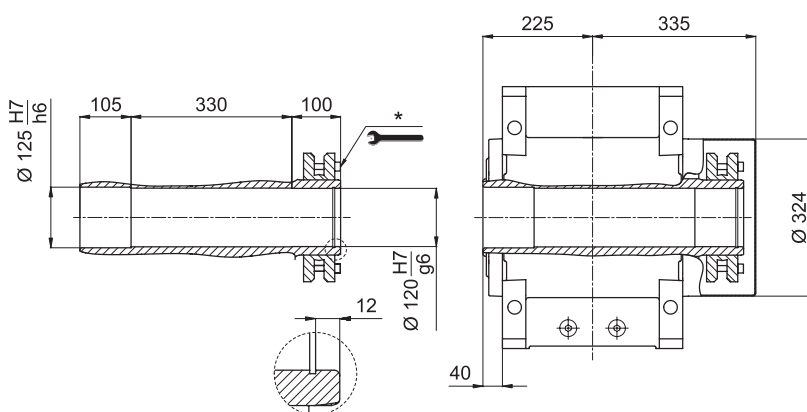


HDP

H



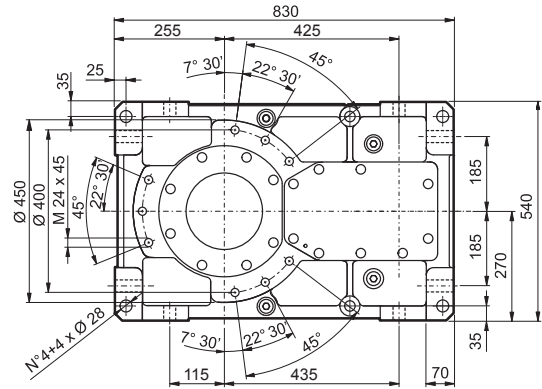
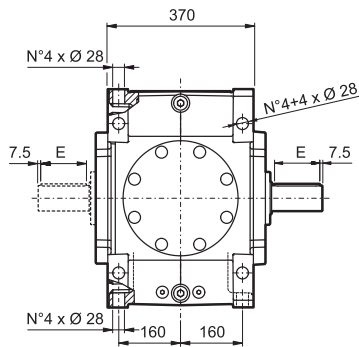
S



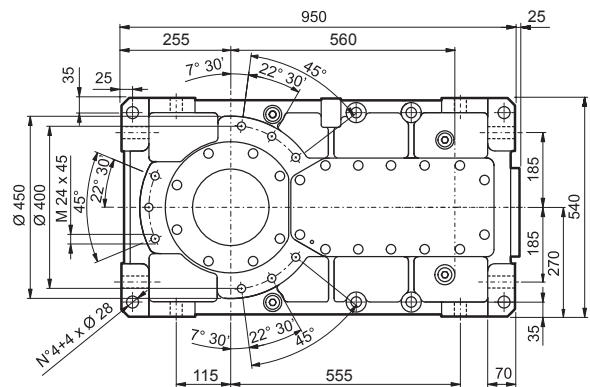
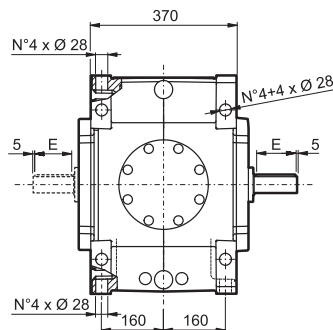
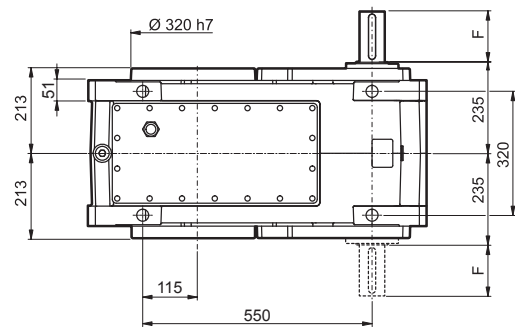
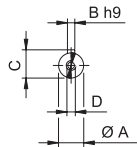
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



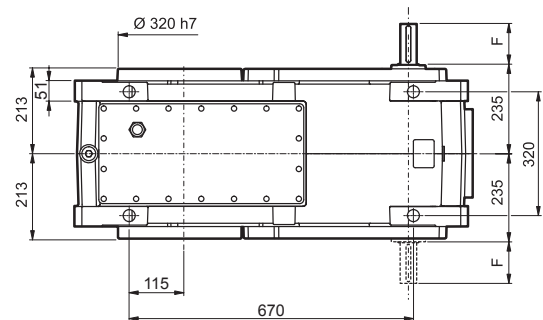
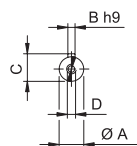
# HDP 110



## HDP 110 2

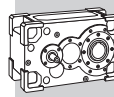


## HDP 110 3 HDP 110 4



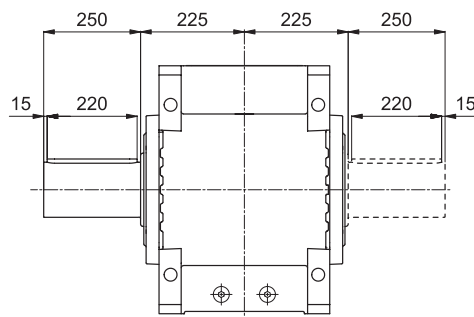
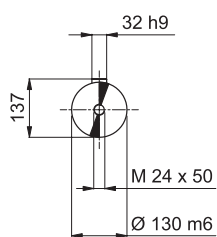
| VP        | i =             | A     | B  | C    | D      | E   | F   | LP  |
|-----------|-----------------|-------|----|------|--------|-----|-----|-----|
| HDP 110 2 | 8.1 ... 25.0    | 60 m6 | 18 | 64   | M20x42 | 125 | 140 | 670 |
| HDP 110 3 | 24.9 ... 54.5   | 48 k6 | 14 | 51.5 | M16x36 | 100 | 110 | 740 |
| HDP 110 3 | 60.7 ... 123.5  | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 740 |
| HDP 110 4 | 120.9 ... 499.4 | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 730 |



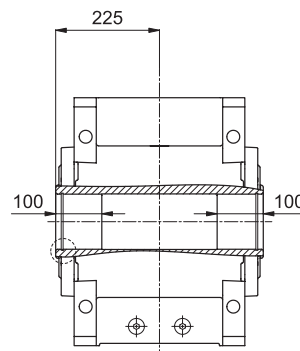
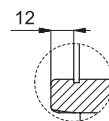
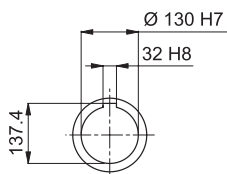


# HDP 110

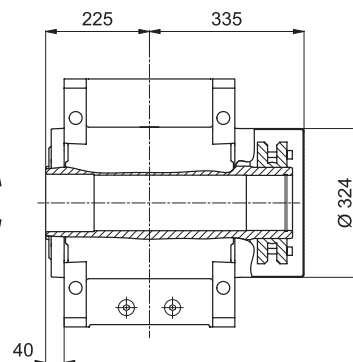
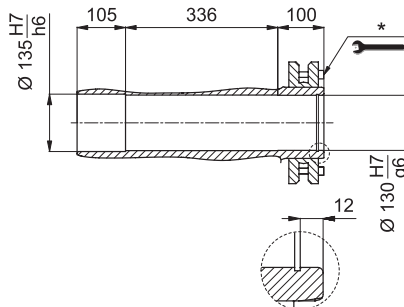
LP



H

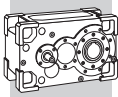


S

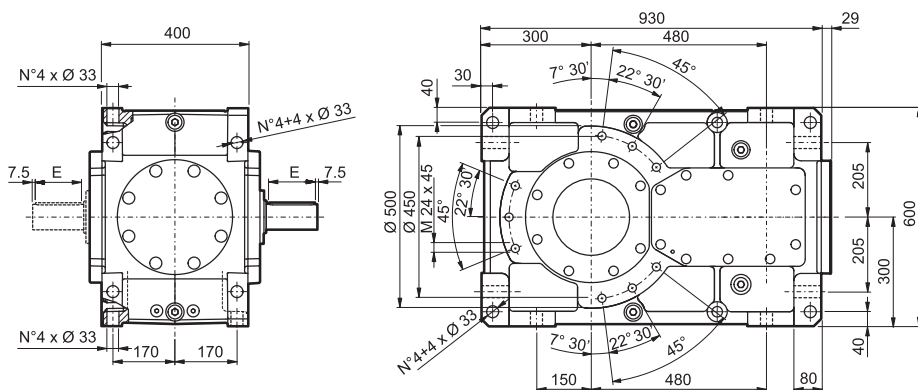


HDP

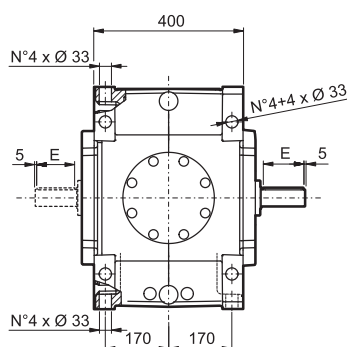
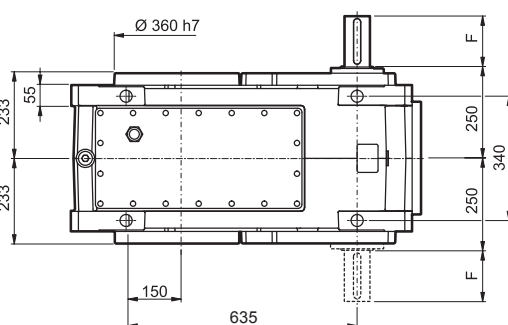
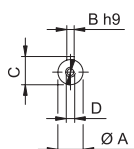
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



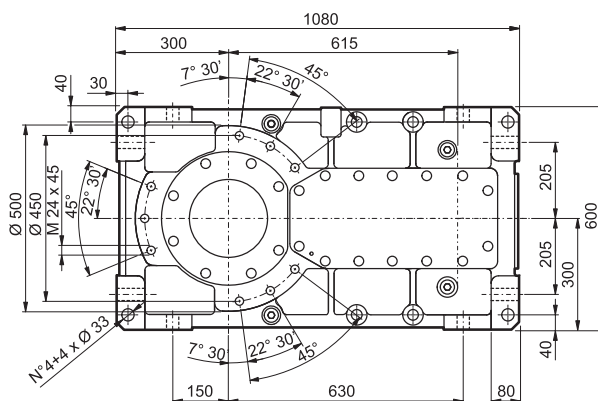
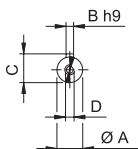
# HDP 120



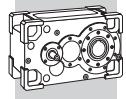
## HDP 120 2



## HDP 120 3 HDP 120 4

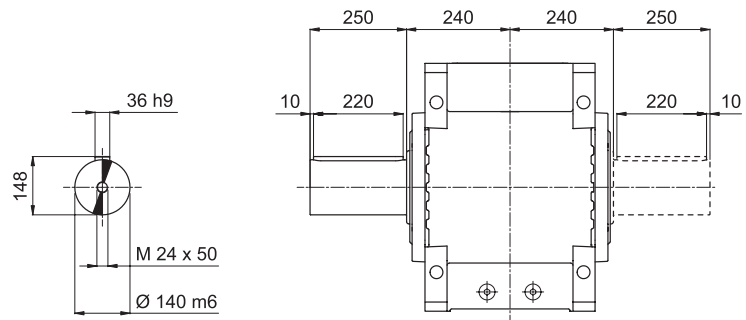


| VP        | i =            | A     | B  | C    | D      | E   | F   | Kg LP |
|-----------|----------------|-------|----|------|--------|-----|-----|-------|
| HDP 120 2 | 7.9 ... 25.4   | 70 m6 | 20 | 74.5 | M20x42 | 125 | 140 | 890   |
| HDP 120 3 | 25.8 ... 56.1  | 48 k6 | 14 | 51.5 | M16x36 | 100 | 110 | 995   |
| HDP 120 3 | 64.3 ... 125.2 | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 995   |
| HDP 120 4 | 128 ... 523.7  | 32 k6 | 10 | 35   | M12x36 | 70  | 80  | 985   |



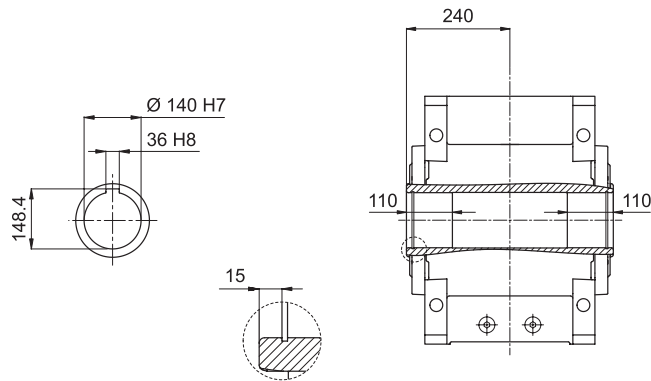
# HDP 120

LP

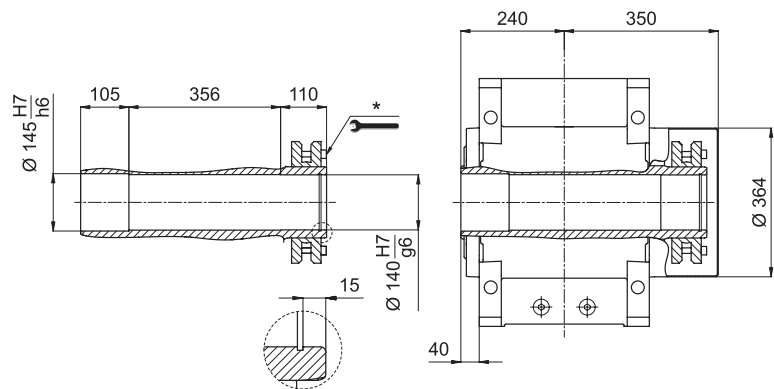


HDP

H



S

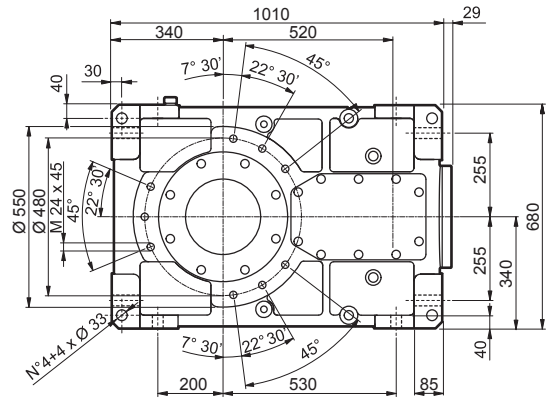
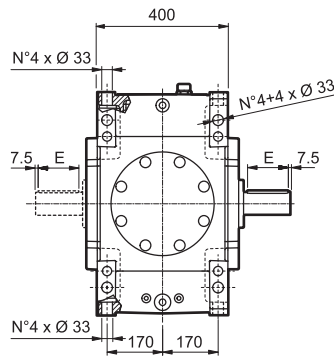


\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".

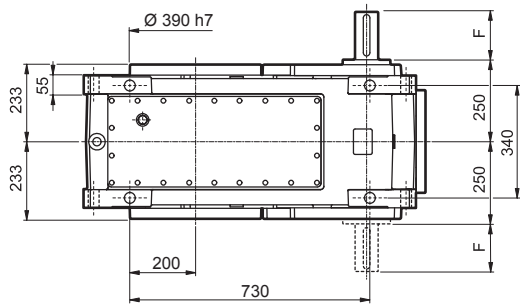
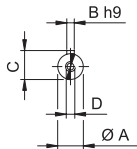


# HDP 125

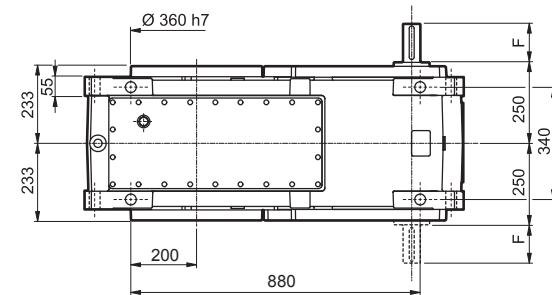
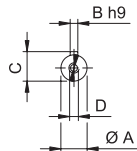
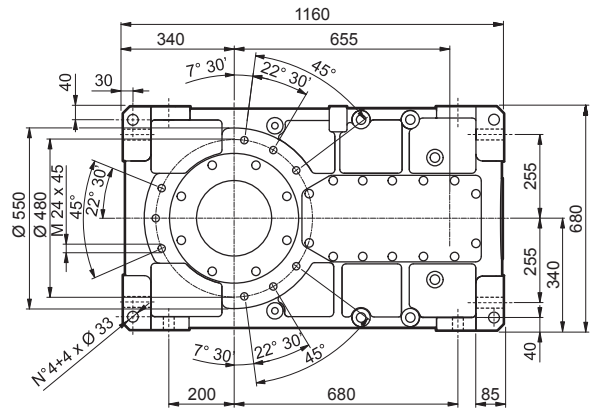
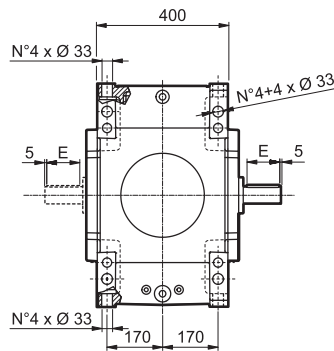
HDP



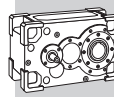
## HDP 125 2



## HDP 125 3 HDP 125 4

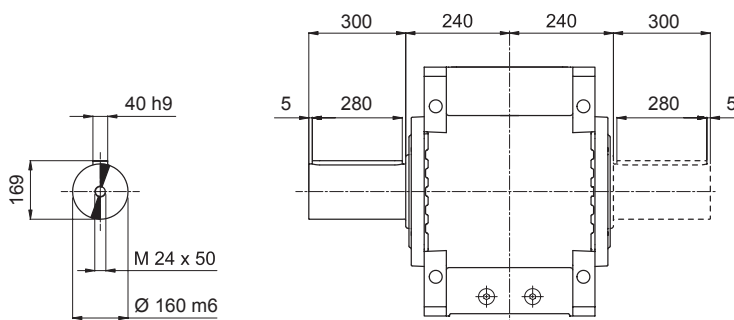


| VP        | i =             | A     | B  | C    | D      | E   | F   | LP   |
|-----------|-----------------|-------|----|------|--------|-----|-----|------|
| HDP 125 2 | 8.9 ... 25.0    | 70 m6 | 20 | 74.5 | M20x42 | 125 | 140 | 1075 |
| HDP 125 3 | 29.1 ... 62.6   | 48 k6 | 14 | 51.5 | M16x36 | 100 | 110 | 1175 |
| HDP 125 3 | 72.5 ... 123.6  | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 1175 |
| HDP 125 4 | 144.4 ... 506.5 | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 1160 |



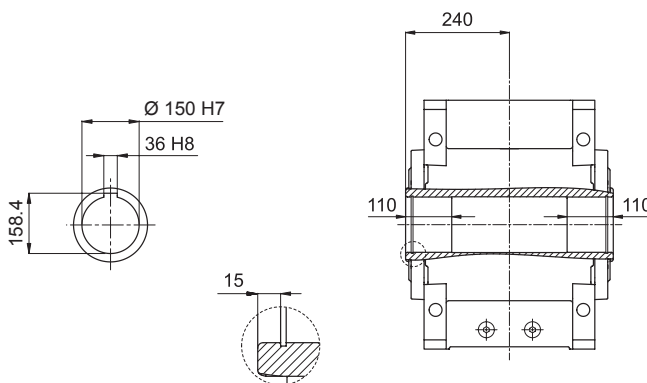
# HDP 125

LP

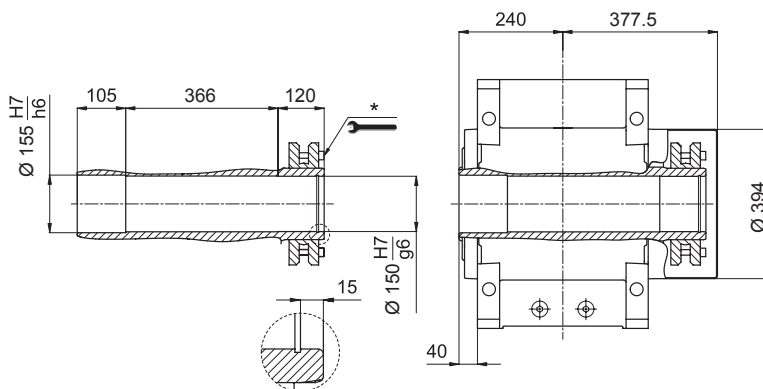


HDP

H



S

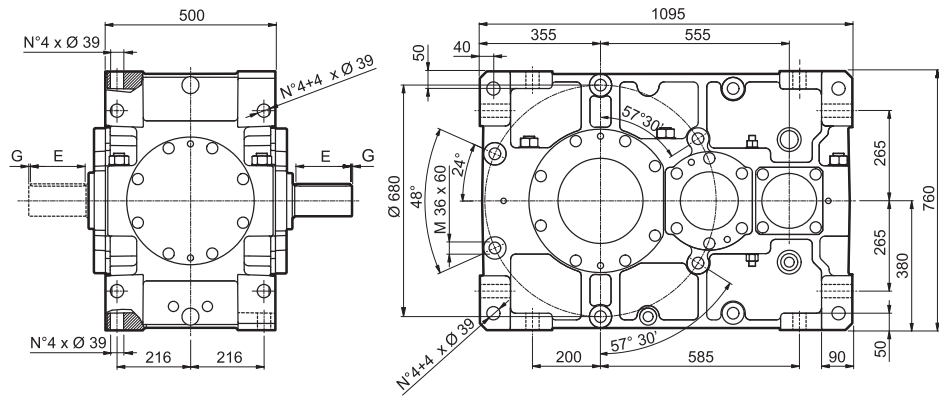


\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".

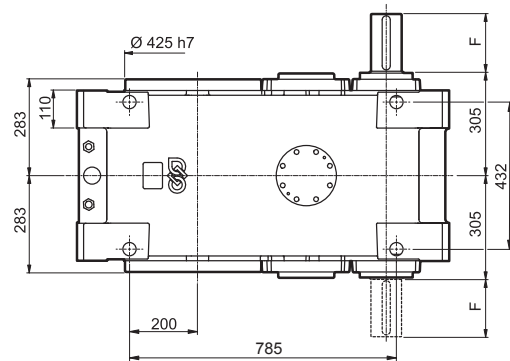
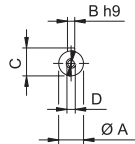


HDP

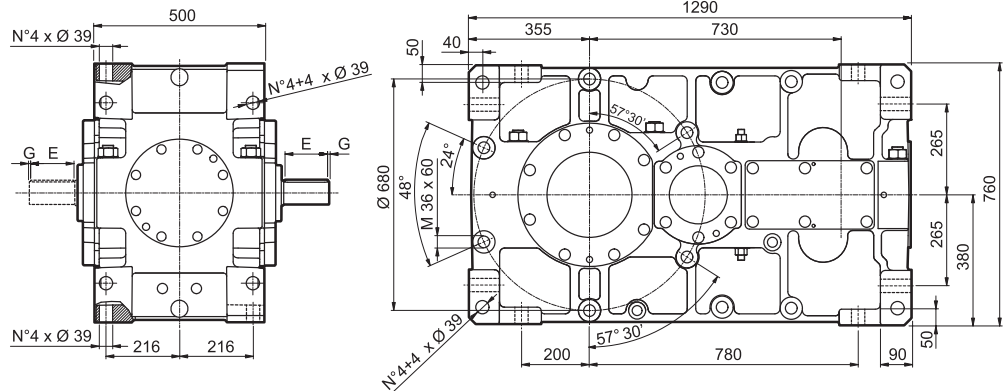
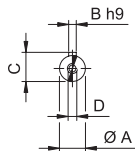
## HDP 130



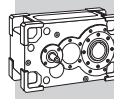
## HDP 130 2



## HDP 130 3 HDP 130 4

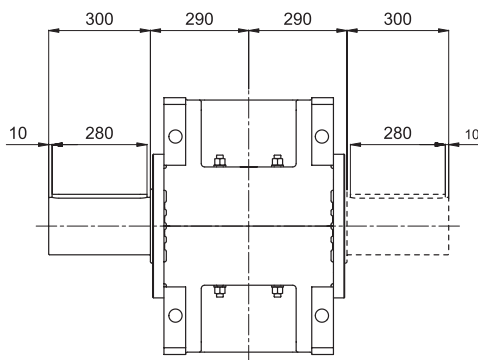
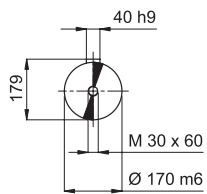


| VP        | i=              | A     | B  | C    | D      | E   | F   | G   | Kg | LP   |
|-----------|-----------------|-------|----|------|--------|-----|-----|-----|----|------|
| HDP 130 2 | 7.3 ... 12.3    | 90 m6 | 25 | 95   | M24x50 | 160 | 170 | 5   |    | 1500 |
| HDP 130 2 | 14.1 ... 21.7   | 70 m6 | 20 | 74.5 | M20x42 | 125 | 140 | 7.5 |    | 1500 |
| HDP 130 3 | 21.8 ... 48.1   | 65 m6 | 18 | 69   | M20x42 | 125 | 140 | 7.5 |    | 1705 |
| HDP 130 3 | 56.5 ... 108.3  | 50 k6 | 14 | 53.5 | M16x36 | 100 | 110 | 5   |    | 1705 |
| HDP 130 4 | 111.2 ... 237.9 | 42 k6 | 12 | 45   | M16x36 | 100 | 110 | 5   |    | 1740 |
| HDP 130 4 | 274.5 ... 534.5 | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 5   |    | 1740 |

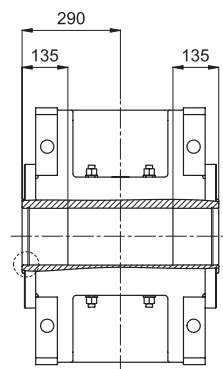
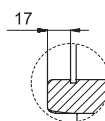
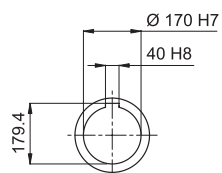


# HDP 130

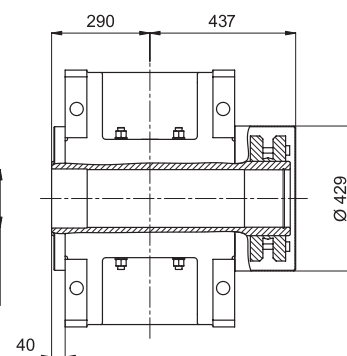
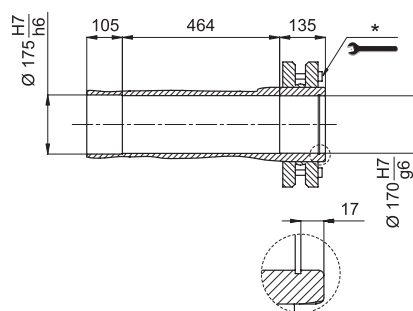
LP



H



S

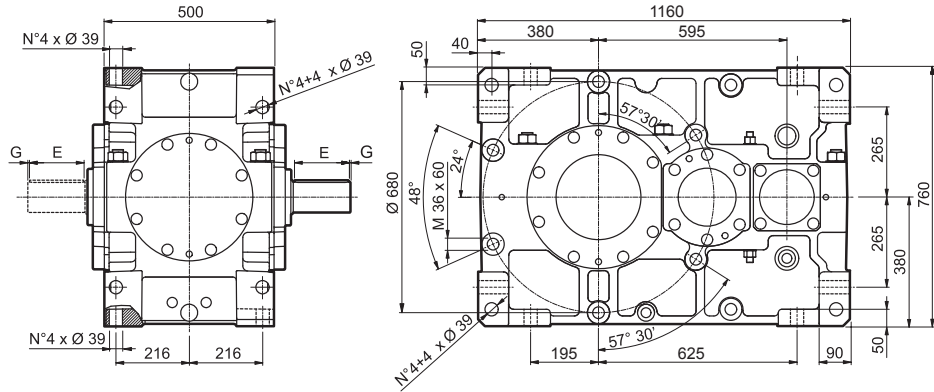


HDP

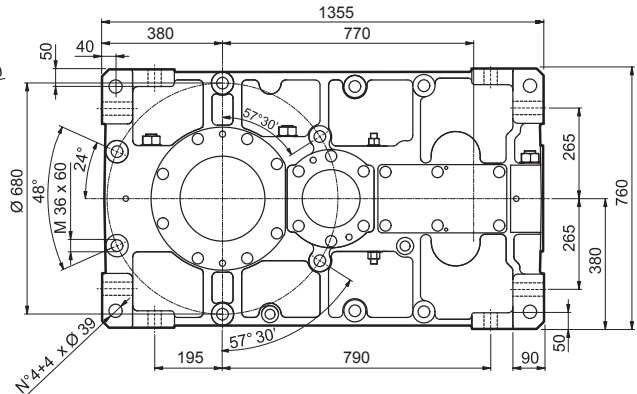
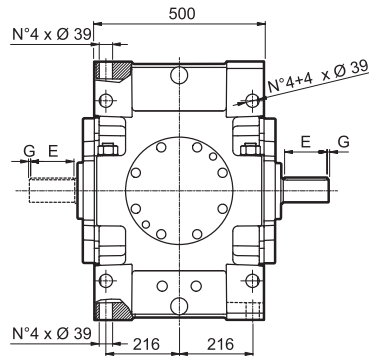
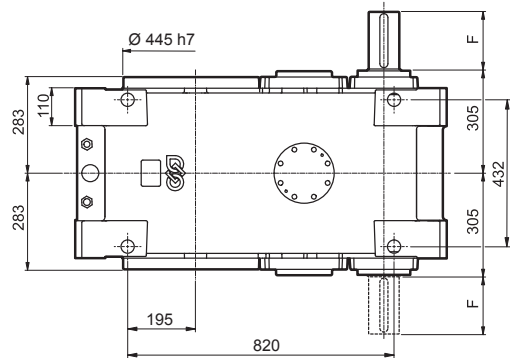
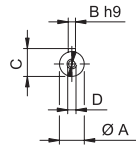
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



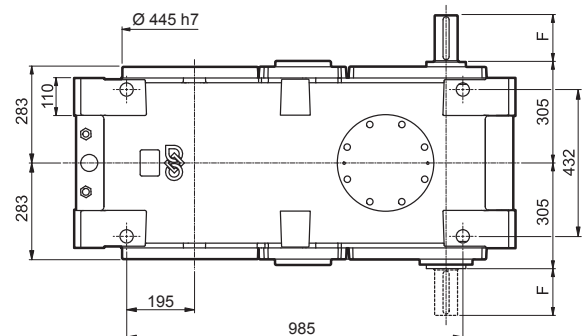
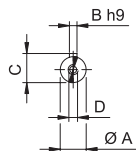
## HDP 140



## HDP 140 2

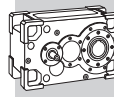


## HDP 140 3 HDP 140 4



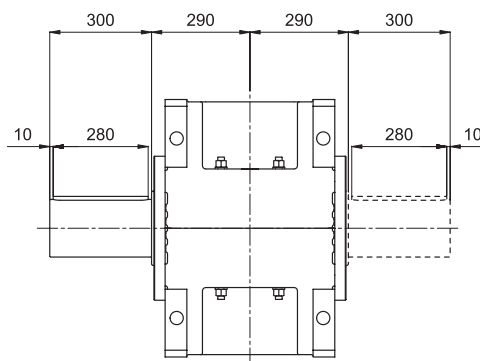
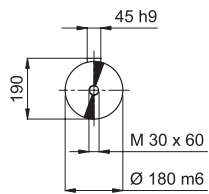
| VP        | i =             | A     | B  | C    | D      | E   | F   | G   | Kg | LP   |
|-----------|-----------------|-------|----|------|--------|-----|-----|-----|----|------|
| HDP 140 2 | 8.4 ... 14.4    | 90 m6 | 25 | 95   | M24x50 | 160 | 170 | 5   |    | 1640 |
| HDP 140 2 | 16.3 ... 24.9   | 70 m6 | 20 | 74.5 | M20x42 | 125 | 140 | 7.5 |    | 1640 |
| HDP 140 3 | 25.1 ... 56.2   | 65 m6 | 18 | 69   | M20x42 | 125 | 140 | 7.5 |    | 1915 |
| HDP 140 3 | 65.1 ... 124.7  | 50 k6 | 14 | 53.5 | M16x36 | 100 | 110 | 5   |    | 1915 |
| HDP 140 4 | 141.6 ... 277.5 | 42 k6 | 12 | 45   | M16x36 | 100 | 110 | 5   |    | 1935 |
| HDP 140 4 | 315.9 ... 495.3 | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 5   |    | 1935 |



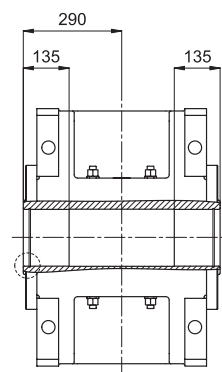
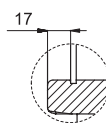
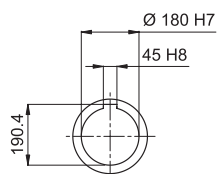


# HDP 140

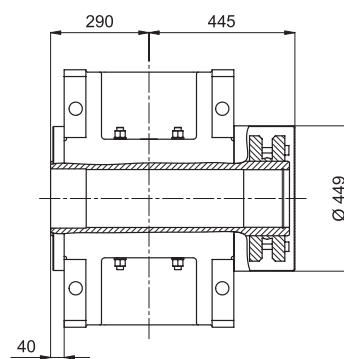
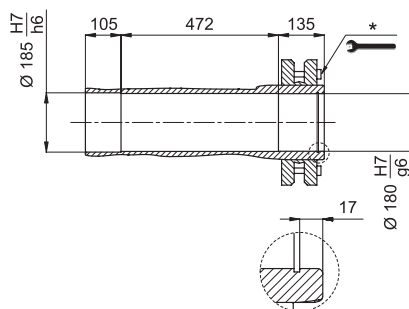
LP



H



S



HDP

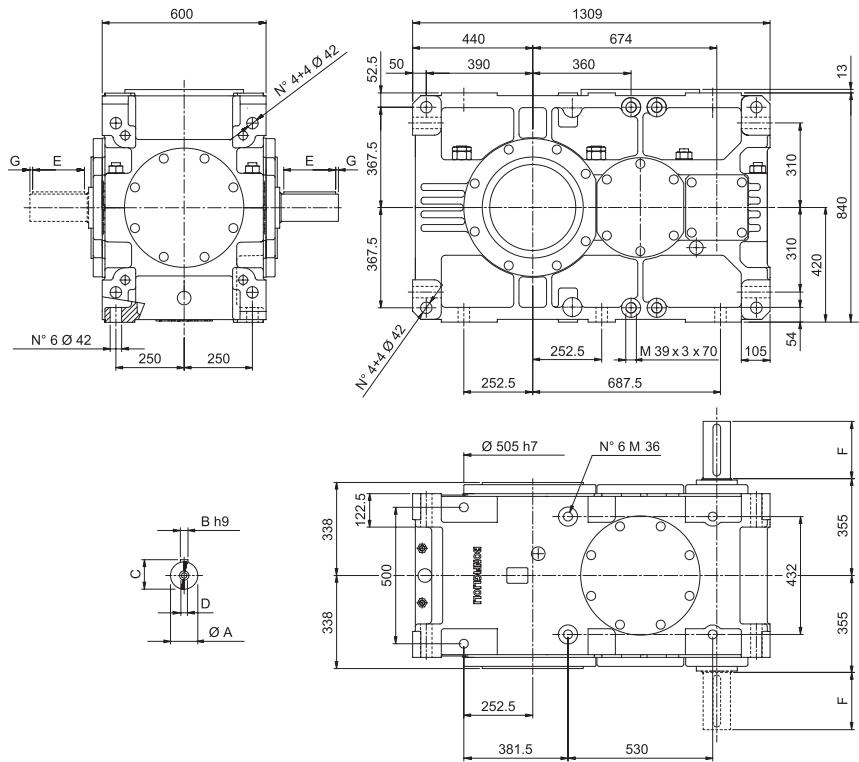
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



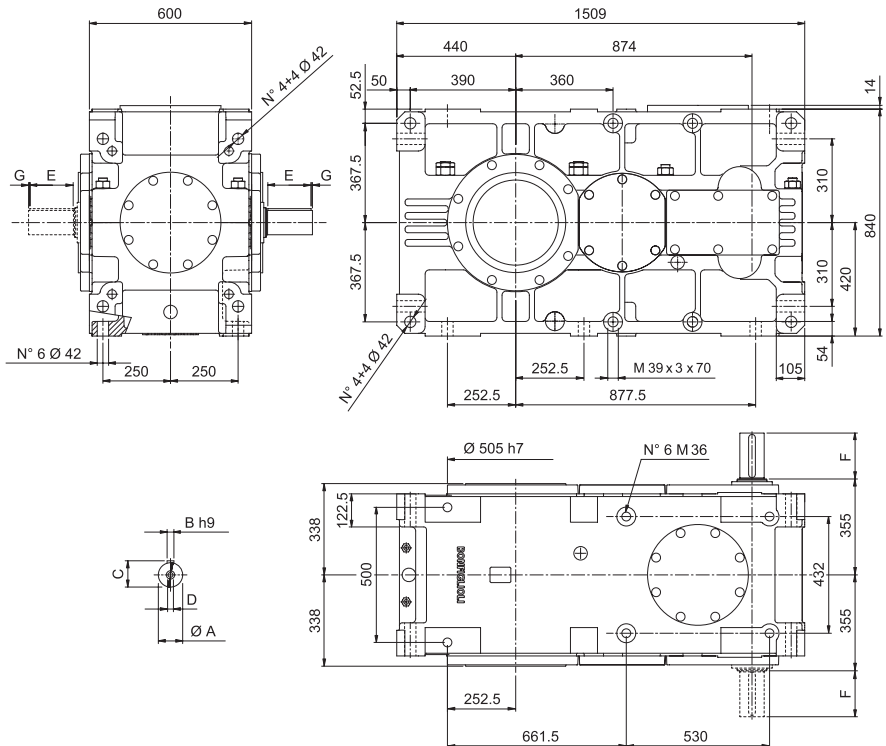
HDP

# HDP 150

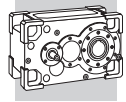
## HDP 150 2



## HDP 150 3 HDP 150 4

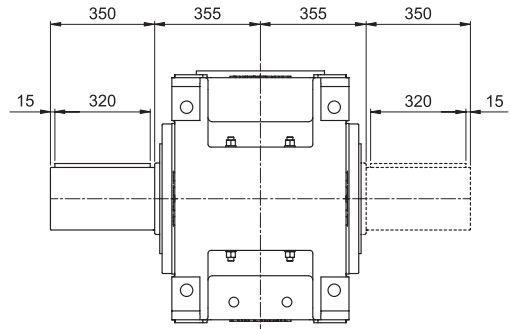
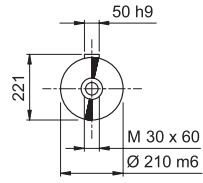


| VP        | i=              | A      | B  | C    | D      | E   | F   | G   | LP   |
|-----------|-----------------|--------|----|------|--------|-----|-----|-----|------|
| HDP 150 2 | 7.9 ... 14.1    | 100 m6 | 28 | 106  | M24x50 | 190 | 210 | 10  | 2585 |
| HDP 150 2 | 15.4 ... 19.6   | 90 m6  | 25 | 95   | M24x50 | 160 | 170 | 5   | 2585 |
| HDP 150 3 | 21.5 ... 38.1   | 90 m6  | 25 | 95   | M24x50 | 160 | 170 | 5   | 2835 |
| HDP 150 3 | 43.5 ... 77.0   | 70 m6  | 20 | 74.5 | M20x42 | 125 | 140 | 7.5 | 2835 |
| HDP 150 4 | 89.0 ... 157.8  | 55 m6  | 16 | 59   | M20x42 | 90  | 110 | 10  | 2870 |
| HDP 150 4 | 170.9 ... 303.1 | 45 k6  | 14 | 48.5 | M16x36 | 100 | 110 | 5   | 2870 |

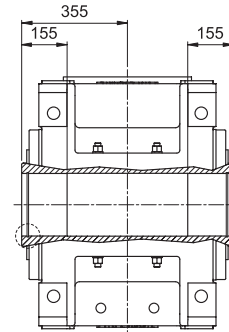
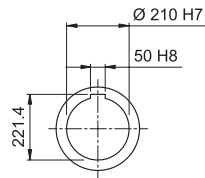


# HDP 150

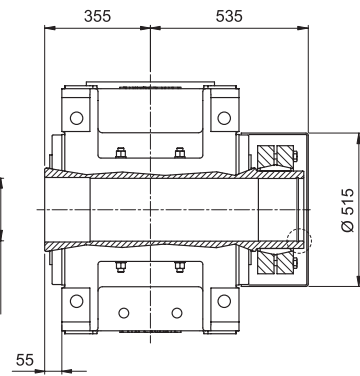
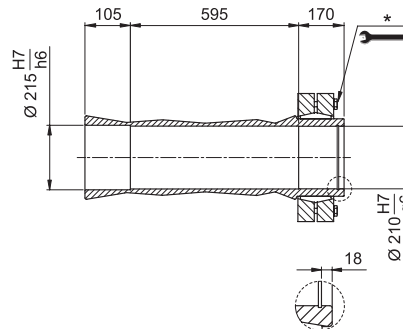
LP



H



S



HDP

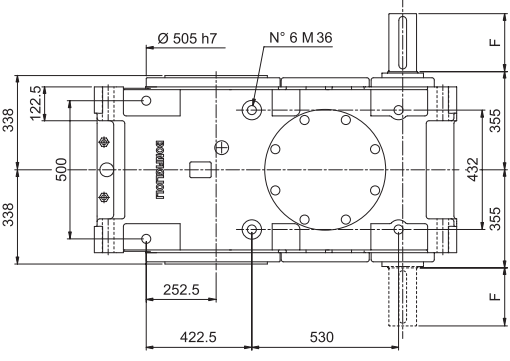
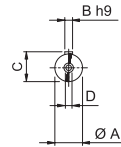
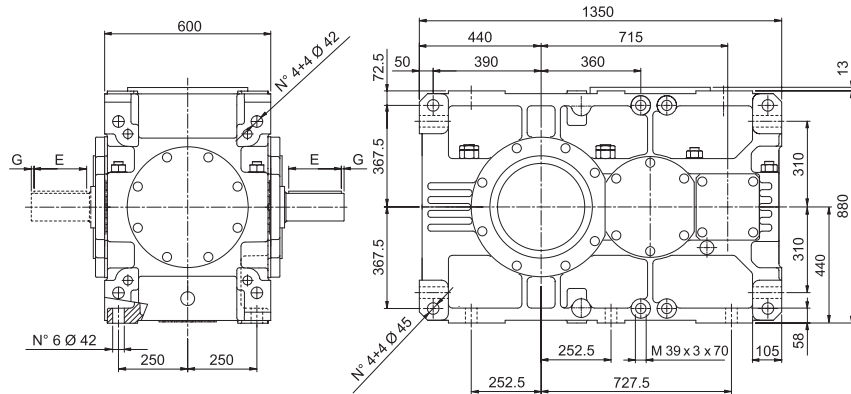
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



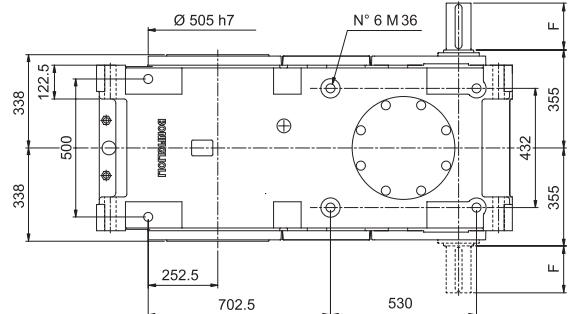
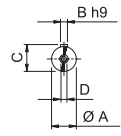
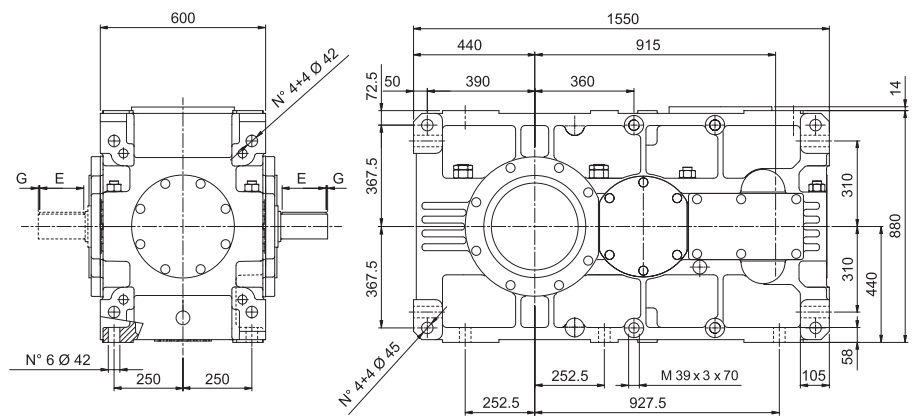
# HDP 160

HDP

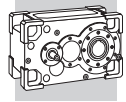
## HDP 160 2



## HDP 160 3 HDP 160 4

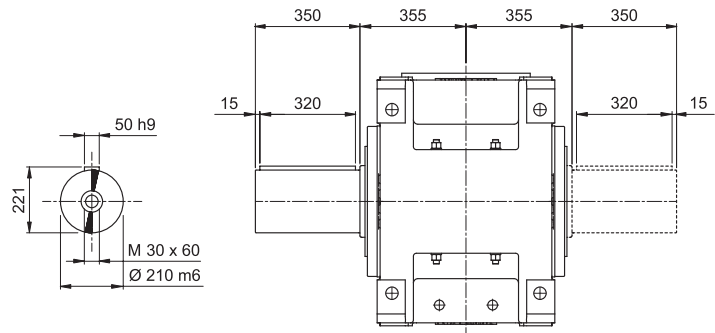


| VP        | i=              | A      | B  | C    | D      | E   | F   | G   | LP   |
|-----------|-----------------|--------|----|------|--------|-----|-----|-----|------|
| HDP 160 2 | 9.0 ... 15.9    | 100 m6 | 28 | 106  | M24x50 | 190 | 210 | 10  | 2860 |
| HDP 160 2 | 17.5 ... 22.1   | 90 m6  | 25 | 95   | M24x50 | 160 | 170 | 5   | 2860 |
| HDP 160 3 | 24.4 ... 43.1   | 90 m6  | 25 | 95   | M24x50 | 160 | 170 | 5   | 3120 |
| HDP 160 3 | 49.4 ... 87.0   | 70 m6  | 20 | 74.5 | M20x42 | 125 | 140 | 7.5 | 3120 |
| HDP 160 4 | 101.1 ... 178.1 | 55 m6  | 16 | 59   | M20x42 | 90  | 110 | 10  | 3145 |
| HDP 160 4 | 194.1 ... 342.2 | 45 k6  | 14 | 48.5 | M16x36 | 100 | 110 | 5   | 3145 |

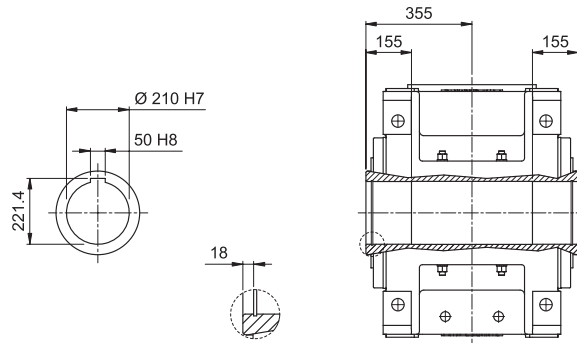


# HDP 160

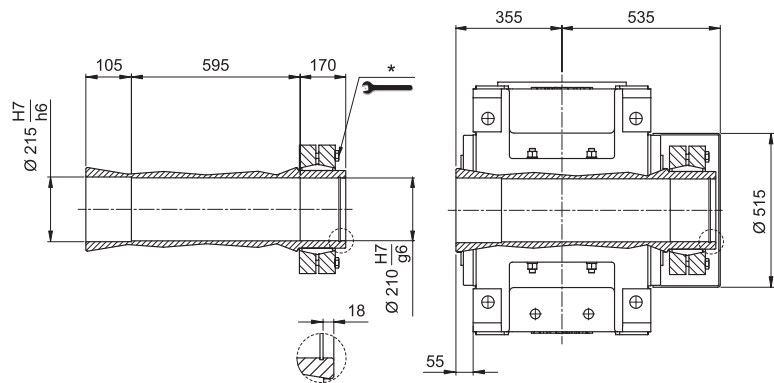
LP



H



S



HDP

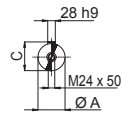
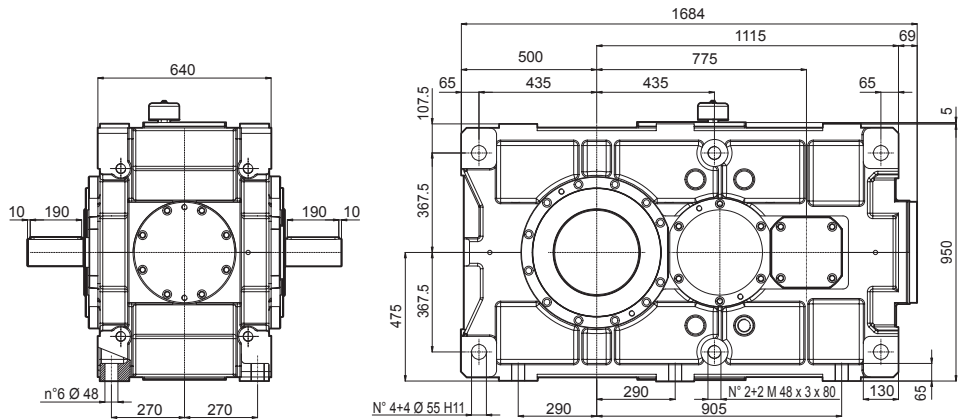
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



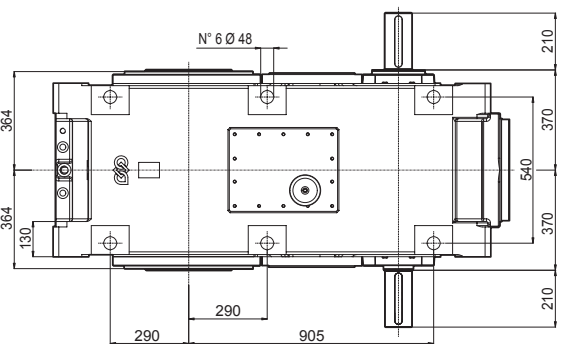
# HDP 170

HDP

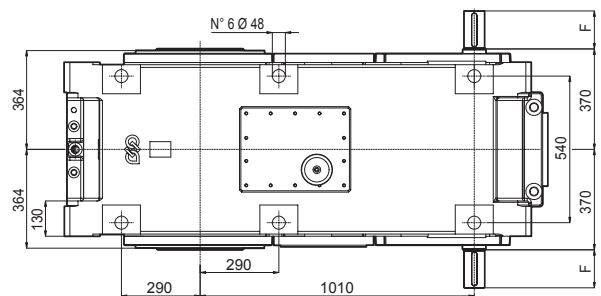
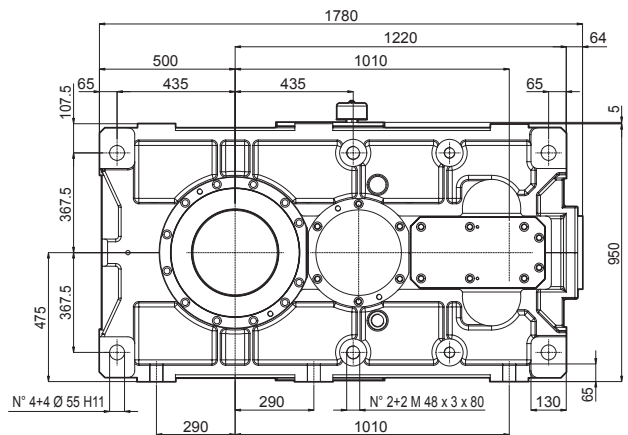
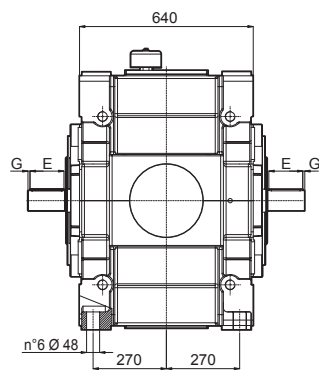
## HDP 170 2



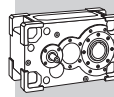
| VP        | i =           | A      | C   | LP   |
|-----------|---------------|--------|-----|------|
| HDP 170 2 | 7.8 ... 14.2  | 110 m6 | 116 | 3495 |
| HDP 170 2 | 15.4 ... 19.3 | 100 m6 | 106 | 3495 |



## HDP 170 3 HDP 170 4

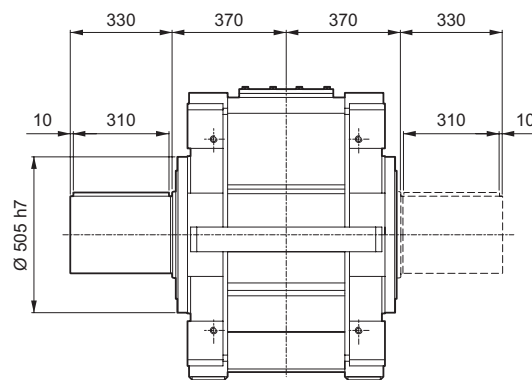
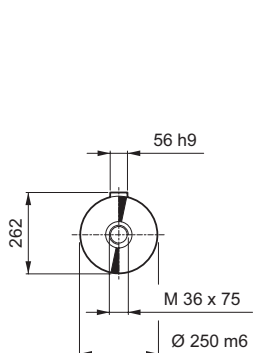


| VP        | i =             | A     | B  | C    | D      | E   | F   | G   | LP   |
|-----------|-----------------|-------|----|------|--------|-----|-----|-----|------|
| HDP 170 3 | 23.2 ... 39.7   | 90 m6 | 25 | 95   | M24x50 | 160 | 170 | 5   | 3765 |
| HDP 170 3 | 45.1 ... 77.2   | 75 m6 | 20 | 79.5 | M20x42 | 125 | 140 | 7.5 | 3765 |
| HDP 170 4 | 92.7 ... 158.8  | 55 m6 | 16 | 59   | M20x42 | 90  | 110 | 10  | 3795 |
| HDP 170 4 | 177.4 ... 303.8 | 50 k6 | 14 | 53.5 | M16x36 | 100 | 110 | 5   | 3795 |

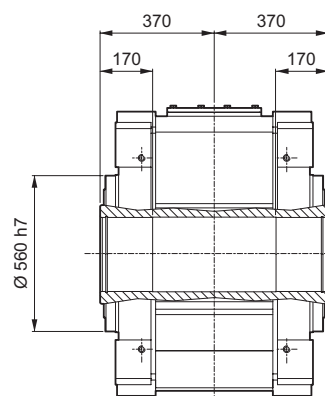
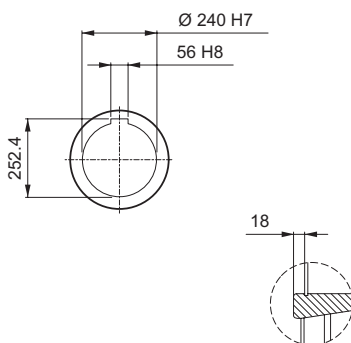


# HDP 170

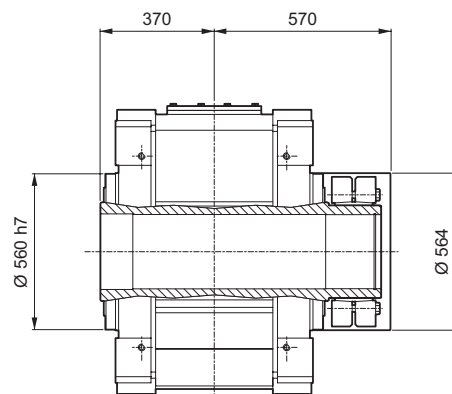
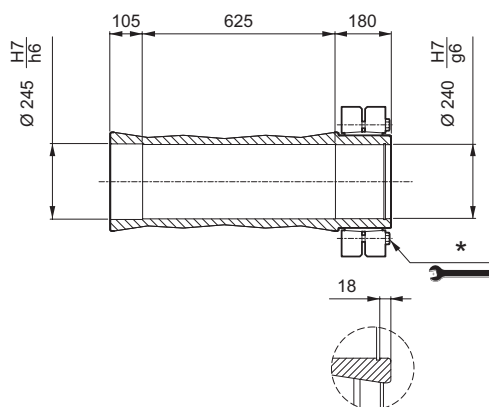
LP



H



S



HDP

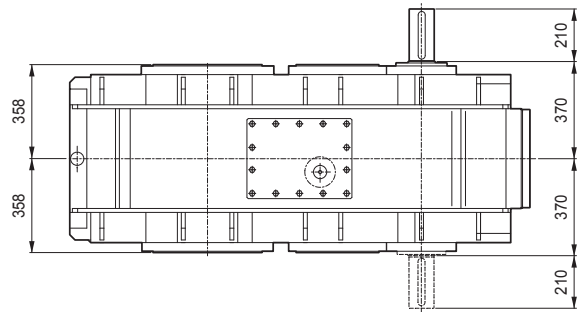
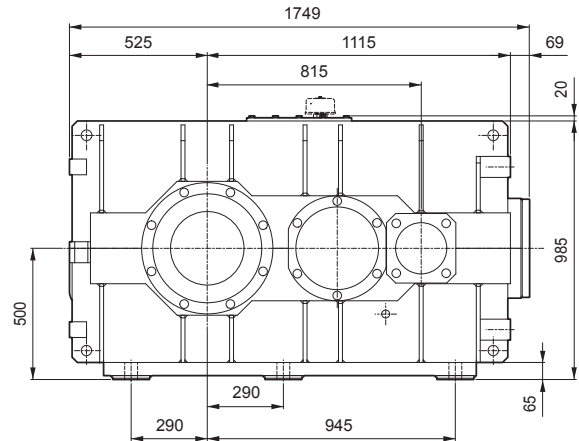
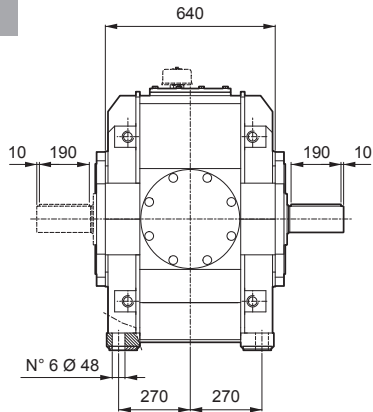
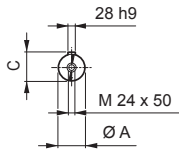
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



# HDP 180

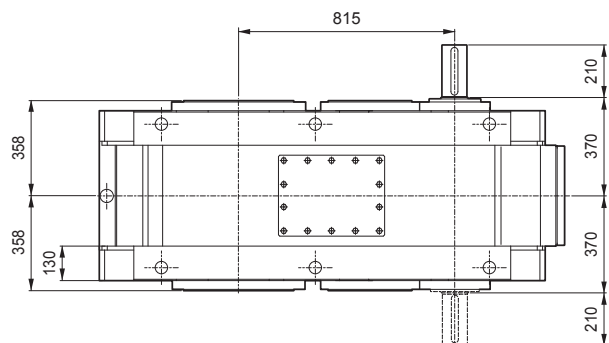
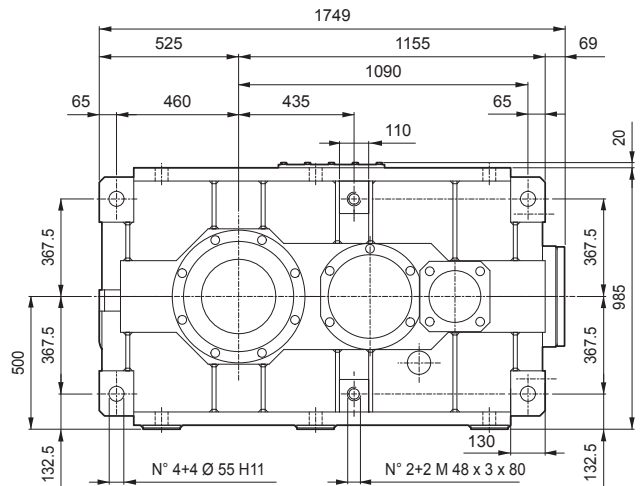
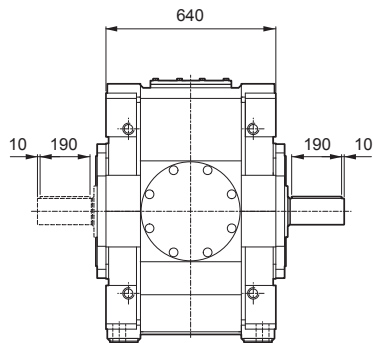
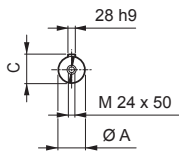
## HDP 180 2

**B3**



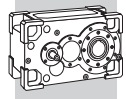
## HDP 180 2

**V5**



| VP        | i =           | A      | C   | LP   |
|-----------|---------------|--------|-----|------|
| HDP 180 2 | 8.7 ... 15.7  | 110 m6 | 116 | 3640 |
| HDP 180 2 | 17.1 ... 21.4 | 100 m6 | 106 | 3640 |



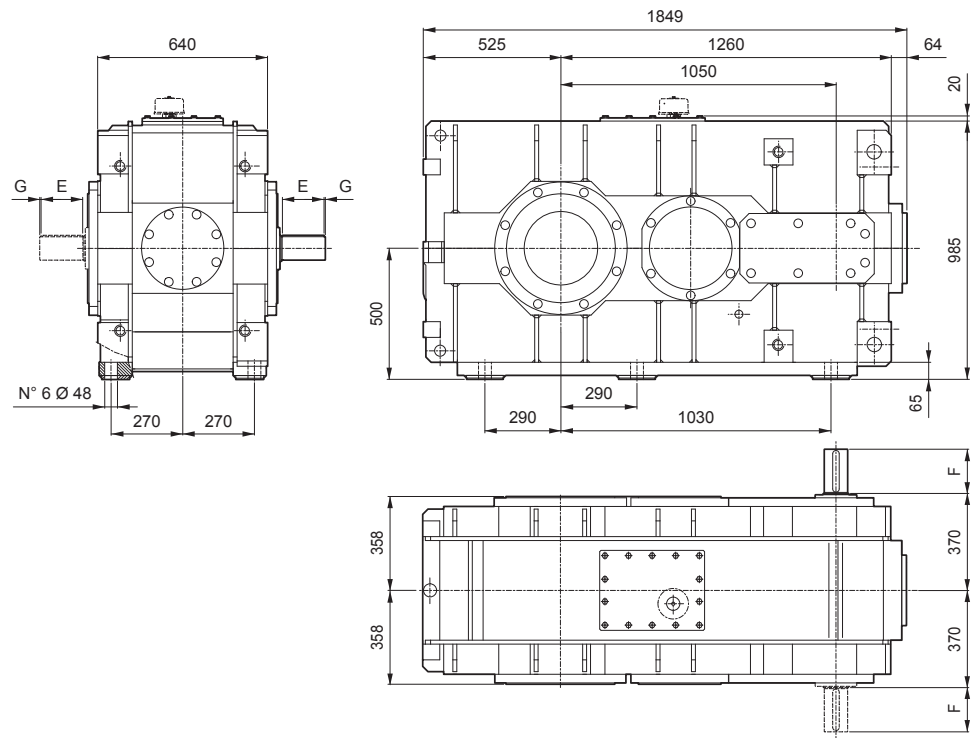
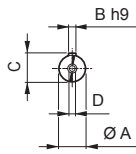


# HDP 180

HDP

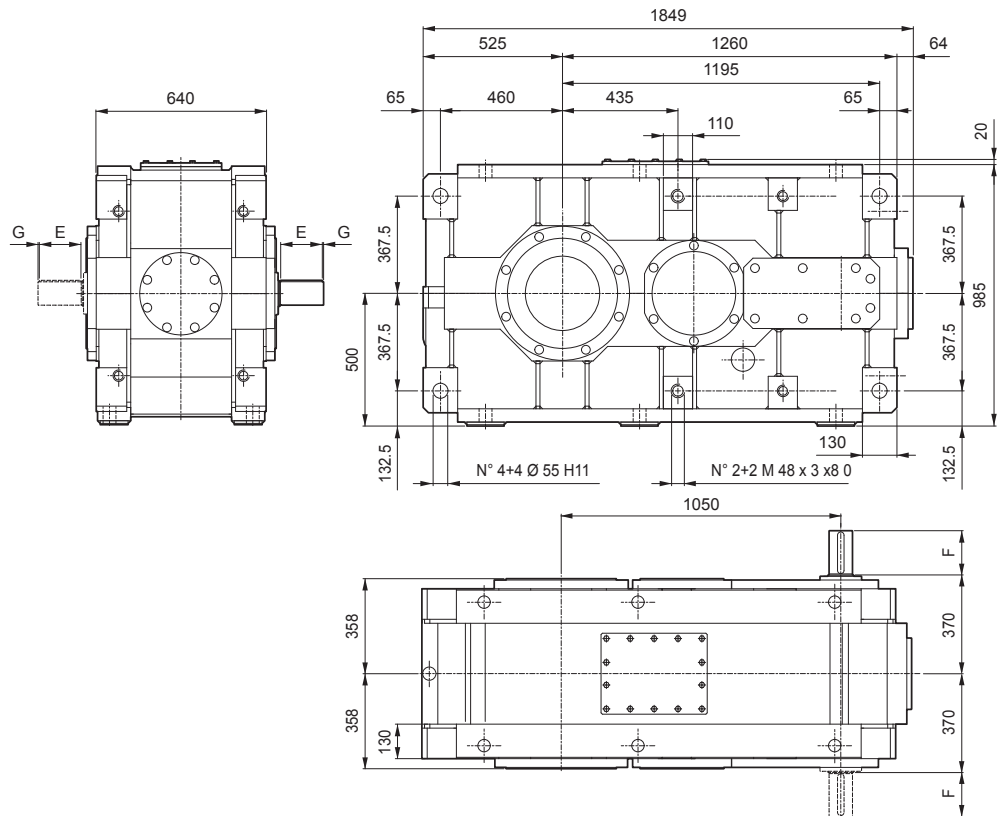
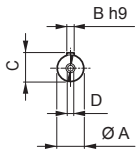
## HDP 180 3/4

**B3**

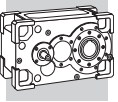


## HDP 180 3/4

**V5**



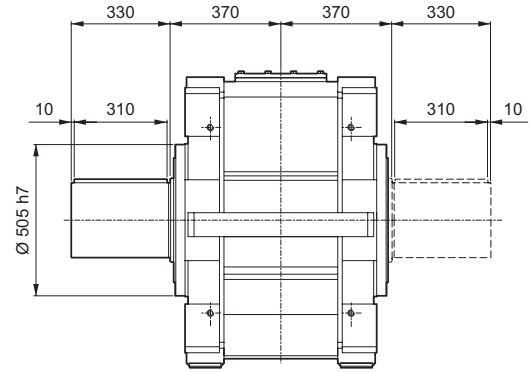
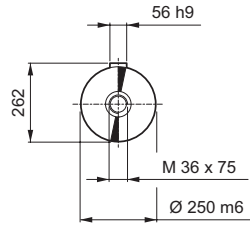
| VP        | i =             | A     | B  | C    | D      | E   | F   | G   | LP   |
|-----------|-----------------|-------|----|------|--------|-----|-----|-----|------|
| HDP 180 3 | 25.8 ... 43.9   | 90 m6 | 25 | 95   | M24x50 | 160 | 170 | 5   | 3860 |
| HDP 180 3 | 50.1 ... 85.4   | 75 m6 | 20 | 79.5 | M20x42 | 125 | 140 | 7.5 | 3860 |
| HDP 180 4 | 103.0 ... 175.6 | 55 m6 | 16 | 59   | M20x42 | 90  | 110 | 10  | 3890 |
| HDP 180 4 | 197.2 ... 336.1 | 50 k6 | 14 | 53.5 | M16x36 | 100 | 110 | 5   | 3890 |



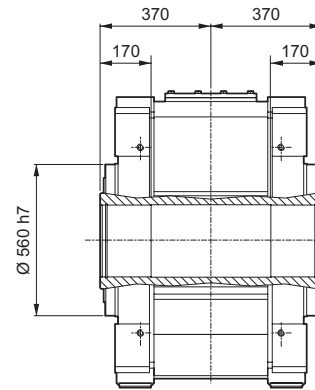
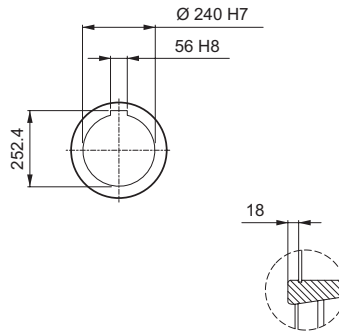
# HDP 180

HDP

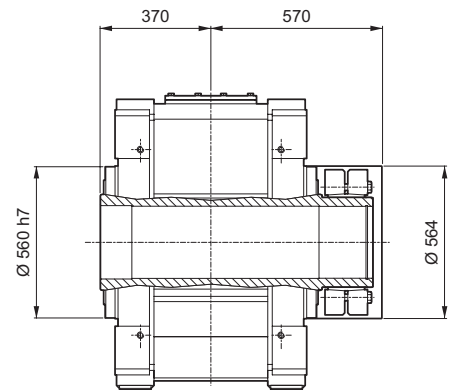
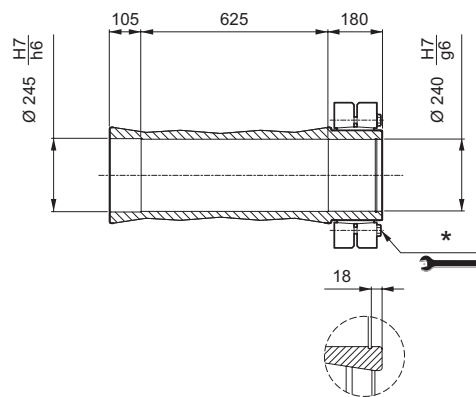
LP



H



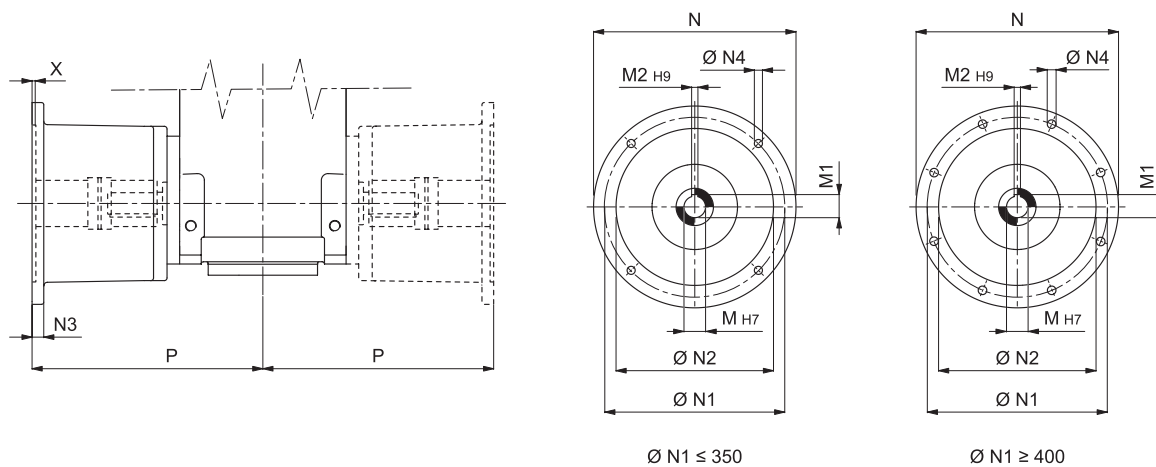
S



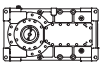

\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".

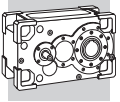


## 20.1 MOTOR MOUNTING WITH BELL HOUSING AND FLEXIBLE COUPLING

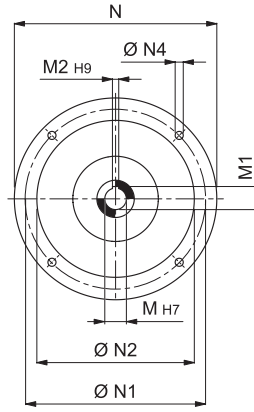
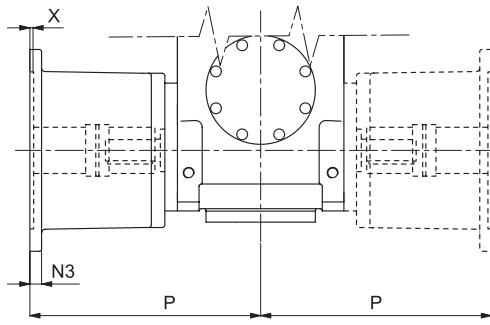


**HDP**

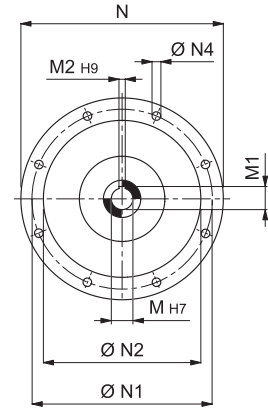
|  |  | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X | P   |
|---|---|----|------|----|-----|-----|-----|----|--------|---|-----|
| HDP 60_132  |   |    | 41.3 | 10 | 300 | 265 | 230 | 16 | 14     | 5 | 311 |
| HDP 60_160  |   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6 | 341 |
| HDP 60_180  |   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6 | 341 |
| HDP 60_200  |   | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7 | 366 |
| HDP 60_225  |   | 60 | 64.4 | 18 | 450 | 400 | 350 | 25 | 18     | 7 | 374 |
| HDP 70_132  |   | 38 | 41.3 | 10 | 300 | 265 | 230 | 16 | 14     | 5 | 311 |
| HDP 70_160  |   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6 | 341 |
| HDP 70_180  |   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6 | 341 |
| HDP 70_200  |   | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7 | 366 |
| HDP 70_225  |   | 60 | 64.4 | 18 | 450 | 400 | 350 | 25 | 18     | 7 | 374 |
| HDP 80_160  |   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6 | 371 |
| HDP 80_180  |   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6 | 371 |
| HDP 80_200  |   | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7 | 396 |
| HDP 80_225  |   | 60 | 64.4 | 18 | 450 | 400 | 350 | 25 | 18     | 7 | 432 |
| HDP 80_250  |   | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6 | 462 |
| HDP 80_280  |   | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6 | 462 |
| HDP 90_160  |   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6 | 427 |
| HDP 90_180  |   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6 | 427 |
| HDP 90_200  |   | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7 | 452 |
| HDP 90_225  |   | 60 | 64.4 | 18 | 450 | 400 | 350 | 25 | 18     | 7 | 457 |
| HDP 90_250  |   | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6 | 487 |
| HDP 90_280  |   | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6 | 487 |



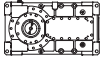
# HDP

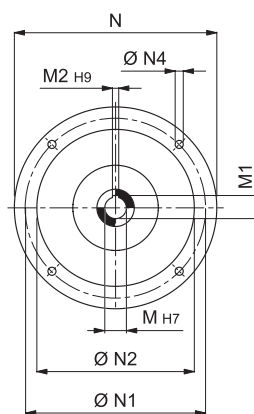
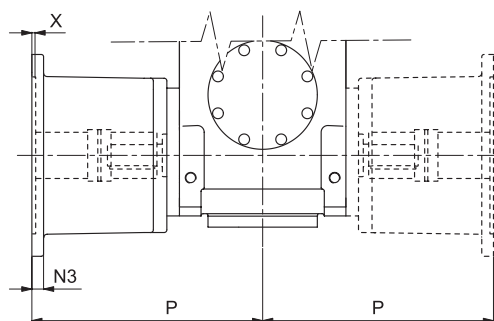
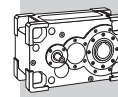


Ø N1 ≤ 350

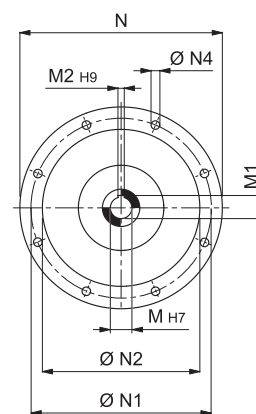


Ø N1 ≥ 400

|  | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X  | P     |
|---|----|------|----|-----|-----|-----|----|--------|----|-------|
| HDP 100_112   | 28 | 31.3 | 8  | 250 | 215 | 180 | 15 | 14     | 5  | 395   |
| HDP 100_132   | 38 | 41.3 | 10 | 300 | 265 | 230 | —  | M12x20 | 6  | 415   |
| HDP 100_160   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 481   |
| HDP 100_180   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 481   |
| HDP 100_200   | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 506   |
| HDP 100_225   | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 513   |
| HDP 100_250   | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 543   |
| HDP 100_280   | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 543   |
| HDP 100_315   | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 579.5 |
| HDP 110_112   | 28 | 31.3 | 8  | 250 | 215 | 180 | 15 | 14     | 5  | 395   |
| HDP 110_132   | 38 | 41.3 | 10 | 300 | 265 | 230 | —  | M12x20 | 6  | 415   |
| HDP 110_160   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 481   |
| HDP 110_180   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 481   |
| HDP 110_200   | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 506   |
| HDP 110_225   | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 513   |
| HDP 110_250   | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 543   |
| HDP 110_280   | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 543   |
| HDP 110_315   | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 579.5 |
| HDP 120_132   | 38 | 41.3 | 10 | 300 | 265 | 230 | —  | M12x20 | 6  | 430   |
| HDP 120_160   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 496   |
| HDP 120_180   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 496   |
| HDP 120_200   | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 521   |
| HDP 120_225   | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 528   |
| HDP 120_250   | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 558   |
| HDP 120_280   | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 558   |
| HDP 120_315   | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 594.5 |
| HDP 125_132   | 38 | 41.3 | 10 | 300 | 265 | 230 | —  | M12x20 | 6  | 430   |
| HDP 125_160   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 496   |
| HDP 125_180   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 496   |
| HDP 125_200   | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 521   |
| HDP 125_225   | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 528   |
| HDP 125_250   | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 558   |
| HDP 125_280   | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 558   |
| HDP 125_315   | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 594.5 |

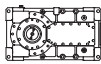




Ø N1 ≤ 350



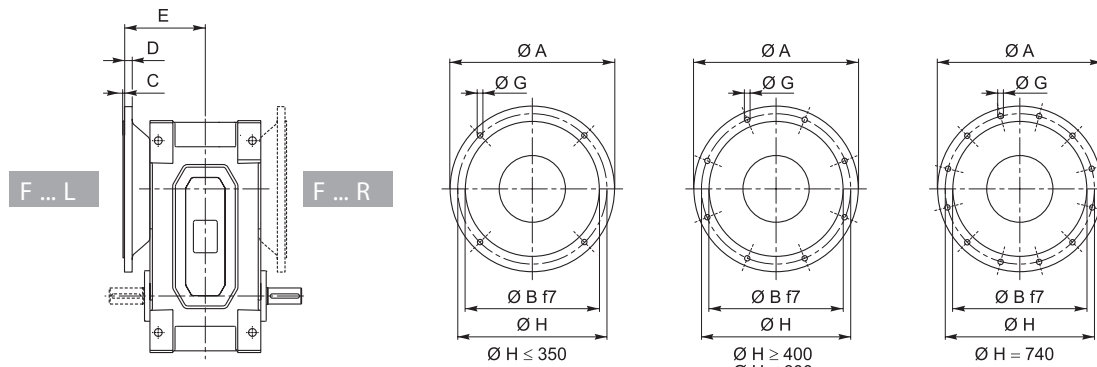
Ø N1 ≥ 400

**HDP**

|  |  | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X  | P     |
|---|---|--|------|----|-----|-----|-----|----|--------|----|-------|
| HDP 130_160   |   | 42   | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 551   |
| HDP 130_180   |   | 48   | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 551   |
| HDP 130_200   |   | 55   | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 576   |
| HDP 130_225   |   | 60   | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 583   |
| HDP 130_250   |   | 65   | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 613   |
| HDP 130_280   |   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 613   |
| HDP 130_315   |   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 649.5 |
| HDP 140_160   |   | 42   | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 551   |
| HDP 140_180   |   | 48   | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 551   |
| HDP 140_200   |   | 55   | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 576   |
| HDP 140_225   |   | 60   | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 583   |
| HDP 140_250   |   | 65   | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 613   |
| HDP 140_280   |   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 613   |
| HDP 140_315   |   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 649.5 |
| HDP 150_160   |   | 42   | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 601   |
| HDP 150_180   |   | 48   | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 601   |
| HDP 150_200   |   | 55   | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 626   |
| HDP 150_225   |   | 60   | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 633   |
| HDP 150_250   |   | 65   | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 663   |
| HDP 150_280   |   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 663   |
| HDP 150_315   |   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 699.5 |
| HDP 160_160   |   | 42   | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 601   |
| HDP 160_180   |   | 48   | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 601   |
| HDP 160_200   |   | 55   | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 626   |
| HDP 160_225   |   | 60   | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 633   |
| HDP 160_250   |   | 65   | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 663   |
| HDP 160_280   |   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 663   |
| HDP 160_315   |   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 699.5 |
| HDP 170   |   |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |      |    |     |     |     |    |        |    |       |
| HDP 180   |   |  |      |    |     |     |     |    |        |    |       |



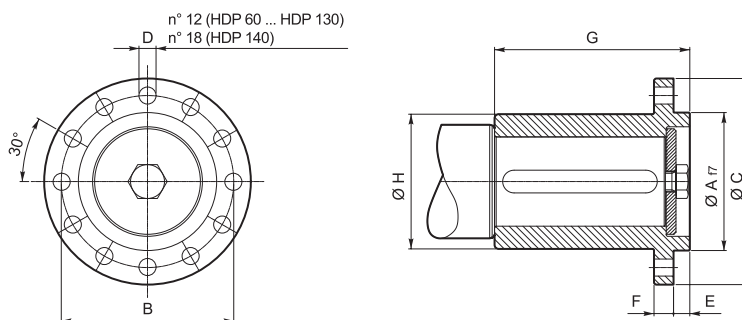
## 20.2 MOUNTING FLANGE



|         |      | A                                    | B   | C | D  | E     | G  | H   |
|---------|------|--------------------------------------|-----|---|----|-------|----|-----|
| HDP 60  | F350 | 350                                  | 250 | 5 | 18 | 187.5 | 18 | 300 |
|         | F400 | 400                                  | 300 | 5 | 20 | 187.5 | 18 | 350 |
| HDP 70  | F450 | 450                                  | 350 | 5 | 22 | 210   | 18 | 400 |
|         | F550 | 550                                  | 450 | 5 | 24 | 210   | 18 | 500 |
| HDP 80  | F450 | 450                                  | 350 | 5 | 22 | 240   | 18 | 400 |
|         | F550 | 550                                  | 450 | 5 | 24 | 240   | 18 | 500 |
| HDP 90  | F550 | 550                                  | 450 | 5 | 24 | 260   | 18 | 500 |
| HDP 100 | F660 | 660                                  | 550 | 7 | 30 | 335   | 22 | 600 |
| HDP 110 | F660 | 660                                  | 550 | 7 | 30 | 335   | 22 | 600 |
| HDP 120 | F660 | 660                                  | 550 | 7 | 30 | 355   | 26 | 600 |
| HDP 125 | F730 | 730                                  | 580 | 7 | 35 | 360   | 26 | 660 |
| HDP 130 | F800 | 800                                  | 680 | 7 | 40 | 460   | 26 | 740 |
| HDP 140 | F800 | 800                                  | 680 | 7 | 40 | 460   | 26 | 740 |
| HDP 150 |      | <b>BONFIGLIOLI TECHNICAL SERVICE</b> |     |   |    |       |    |     |
| HDP 160 |      |                                      |     |   |    |       |    |     |
| HDP 170 |      |                                      |     |   |    |       |    |     |
| HDP 180 |      |                                      |     |   |    |       |    |     |

## 20.3 MANIFOLD FLANGE

Available for shaft arrangement: LL, LR, LD, RL, RR and RD, all featuring a single output shaft extension.

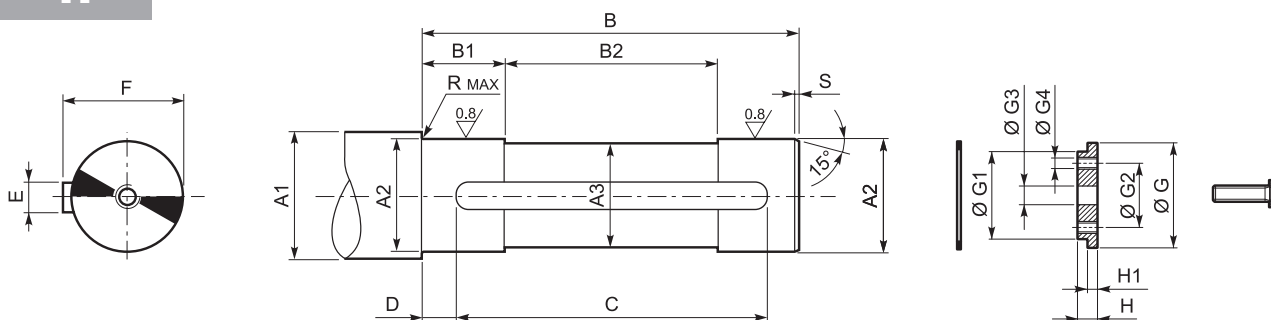




|            | A   | B                                    | C   | D  | E  | F  | G   | H   |
|------------|-----|--------------------------------------|-----|----|----|----|-----|-----|
| HDP 60 FM  | 125 | 175                                  | 208 | 19 | 14 | 21 | 165 | 135 |
| HDP 70 FM  | 125 | 175                                  | 208 | 19 | 14 | 21 | 195 | 135 |
| HDP 80 FM  | 170 | 212                                  | 254 | 21 | 20 | 24 | 240 | 166 |
| HDP 90 FM  | 170 | 212                                  | 254 | 21 | 20 | 24 | 240 | 166 |
| HDP 100 FM | 200 | 260                                  | 309 | 25 | 19 | 31 | 244 | 200 |
| HDP 110 FM | 200 | 260                                  | 309 | 25 | 19 | 31 | 289 | 200 |
| HDP 120 FM | 200 | 260                                  | 309 | 25 | 19 | 31 | 289 | 200 |
| HDP 125 FM | 220 | 320                                  | 384 | 32 | 19 | 31 | 344 | 240 |
| HDP 130 FM | 220 | 320                                  | 384 | 32 | 19 | 31 | 344 | 250 |
| HDP 140 FM | 250 | 380                                  | 450 | 32 | 19 | 40 | 344 | 310 |
| HDP 150    |     | <b>BONFIGLIOLI TECHNICAL SERVICE</b> |     |    |    |    |     |     |
| HDP 160    |     |                                      |     |    |    |    |     |     |
| HDP 170    |     |                                      |     |    |    |    |     |     |
| HDP 180    |     |                                      |     |    |    |    |     |     |







## 20.4 CUSTOMER'S SHAFT

### H



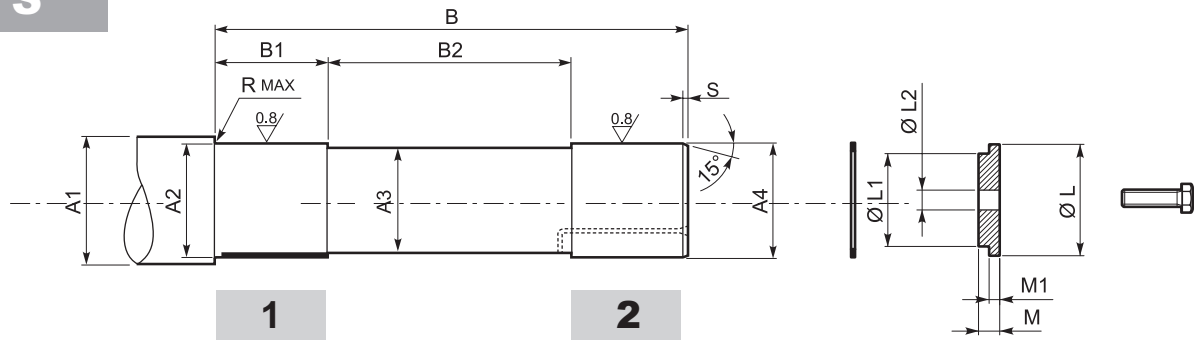
|         | A1  | A2     | A3    | B   | B1  | B2  | C   | D   | E     | F    | R   | S   | <br>UNI6604 |
|---------|---|--------|-------|-----|-----|-----|-----|-----|-------|------|-----|-----|--|
| HDP 60  | ≥ 78  | 70 h6  | 69    | 283 | 56  | 172 | 220 | 30  | 20 h9 | 74.5 | 2.5 | 2   | 20x12x220A   |
| HDP 70  | ≥ 89  | 80 h6  | 79    | 283 | 78  | 127 | 220 | 30  | 22 h9 | 85   | 2.5 | 2.5 | 22x14x220A   |
| HDP 80  | ≥ 104   | 95 h6  | 94    | 338 | 73  | 192 | 280 | 30  | 25 h9 | 100  | 2.5 | 2.5 | 25x14x280A   |
| HDP 90  | ≥ 121   | 110 h6 | 109   | 378 | 88  | 202 | 320 | 30  | 28 h9 | 116  | 2.5 | 2.5 | 28x16x320A   |
| HDP 100 | ≥ 133   | 120 h6 | 119.5 | 420 | 100 | 250 | 360 | 30  | 32 h9 | 127  | 3   | 2.5 | 32x18x360A   |
| HDP 110 | ≥ 143   | 130 h6 | 129.5 | 420 | 100 | 250 | 360 | 30  | 32 h9 | 137  | 3   | 2.5 | 32x18x360A   |
| HDP 120 | ≥ 153   | 140 h6 | 139.5 | 444 | 110 | 260 | 400 | 40  | 36 h9 | 148  | 3   | 2.5 | 36x20x400A   |
| HDP 125 | ≥ 163   | 150 h6 | 149.5 | 444 | 110 | 260 | 400 | 40  | 36 h9 | 158  | 3   | 2.5 | 36x20x400A   |
| HDP 130 | ≥ 183   | 170 h6 | 169.5 | 540 | 135 | 310 | 400 | 80  | 40 h9 | 179  | 3   | 2.5 | 40x22x400A   |
| HDP 140 | ≥ 193   | 180 h6 | 179.5 | 540 | 135 | 310 | 400 | 80  | 45 h9 | 190  | 3   | 2.5 | 45x25x400A   |
| HDP 150 | ≥ 223   | 210 h6 | 209.5 | 667 | 155 | 400 | 500 | 100 | 50 h9 | 221  | 3   | 3   | 50x28x450B   |
| HDP 160 | ≥ 223   | 210 h6 | 209.5 | 667 | 155 | 400 | 500 | 100 | 50 h9 | 221  | 3   | 3   | 50x28x450B   |
| HDP 170 | ≥ 255   | 240 h6 | 239.5 | 697 | 170 | 400 | 506 | 100 | 56 h9 | 252  | 3   | 3   | 56x32x450B   |
| HDP 180 |  BONFIGLIOLI TECHNICAL SERVICE |        |       |     |     |     |     |     |       |      |     |     |  |

| Out of scope for supply  |   |        |        |     |    |     |    |  |         |
|--|---|--------|--------|-----|----|-----|----|--|---------|
| <br>UNI7437 |                                |        |        |     |    |     |    | <br>UNI5739 |         |
|  | G   | G1     | G2     | G3  | G4 | H   | H1 |  |         |
| HDP 60   | —   | 90     | 70 d9  | —   | 22 | —   | 10 | 8.5  | M20x50  |
| HDP 70   | —   | 100    | 80 d9  | —   | 22 | —   | 10 | 8.5  | M20x50  |
| HDP 80   | —   | 115    | 95 d9  | —   | 26 | —   | 15 | 13.5   | M24x60  |
| HDP 90   | —   | 130    | 110 d9 | —   | 26 | —   | 15 | 13.5   | M24x60  |
| HDP 100  | 120x4   | 120 d9 | 96     | 64  | 26 | M16 | 24 | 12   | M24x70  |
| HDP 110  | 130x4   | 130 d9 | 105    | 69  | 26 | M20 | 24 | 12   | M24x70  |
| HDP 120  | 140x4   | 140 d9 | 115    | 79  | 26 | M20 | 30 | 15   | M24x80  |
| HDP 125  | 150x4   | 150 d9 | 122    | 86  | 26 | M20 | 30 | 15   | M24x80  |
| HDP 130  | 170x4   | 170 d9 | 142    | 102 | 33 | M24 | 34 | 17   | M30x90  |
| HDP 140  | 180x4   | 180 d9 | 150    | 110 | 33 | M24 | 34 | 17   | M30x90  |
| HDP 150  | 210x5   | 210 d9 | 178    | 140 | 33 | M24 | 36 | 18   | M30x100 |
| HDP 160  | 210x5   | 210 d9 | 178    | 140 | 33 | M24 | 36 | 18   | M30x100 |
| HDP 170  | 240x5   | 240 d9 | 208    | 160 | 39 | M24 | 36 | 18   | M36x110 |
| HDP 180  |  BONFIGLIOLI TECHNICAL SERVICE |        |        |     |    |     |    |  |         |



S

HDP



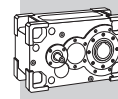
|         | A1                                   | A2     | A3    | A4     | B   | B1  | B2  | R   | S   |
|---------|--------------------------------------|--------|-------|--------|-----|-----|-----|-----|-----|
| HDP 60  | ≥ 90                                 | 72 h7  | 69    | 70 g6  | 328 | 59  | 194 | 2.5 | 2.5 |
| HDP 70  | ≥ 104                                | 82 h7  | 79    | 80 g6  | 332 | 77  | 174 | 2.5 | 2.5 |
| HDP 80  | ≥ 119                                | 97 h7  | 94    | 95 g6  | 398 | 95  | 205 | 2.5 | 2.5 |
| HDP 90  | ≥ 136                                | 112 h7 | 109   | 110 g6 | 440 | 87  | 273 | 2.5 | 2.5 |
| HDP 100 | ≥ 138                                | 125 h6 | 119.5 | 120 g6 | 517 | 104 | 328 | 3   | 2.5 |
| HDP 110 | ≥ 148                                | 135 h6 | 129.5 | 130 g6 | 523 | 104 | 334 | 3   | 2.5 |
| HDP 120 | ≥ 158                                | 145 h6 | 139.5 | 140 g6 | 550 | 104 | 354 | 3   | 2.5 |
| HDP 125 | ≥ 168                                | 155 h6 | 149.5 | 150 g6 | 570 | 104 | 363 | 3   | 2.5 |
| HDP 130 | ≥ 188                                | 175 h6 | 169.5 | 170 g6 | 681 | 104 | 462 | 3   | 2.5 |
| HDP 140 | ≥ 198                                | 185 h6 | 179.5 | 180 g6 | 689 | 104 | 470 | 3   | 2.5 |
| HDP 150 | ≥ 228                                | 215 h6 | 209.5 | 210 g6 | 839 | 104 | 593 | 3   | 3   |
| HDP 160 | ≥ 228                                | 215 h6 | 209.5 | 210 g6 | 839 | 104 | 593 | 3   | 3   |
| HDP 170 | <b>BONFIGLIOLI TECHNICAL SERVICE</b> |        |       |        |     |     |     |     |     |
| HDP 180 | <b>BONFIGLIOLI TECHNICAL SERVICE</b> |        |       |        |     |     |     |     |     |

| Out of scope for supply |                                      |        |        |        |    |      |             |
|-------------------------|--------------------------------------|--------|--------|--------|----|------|-------------|
|                         | <br>UNI7437                          | L      | L1     | <br>L2 | M  | M1   | <br>UNI5739 |
| HDP 60                  | —                                    | 90     | 70 d9  | 22     | 10 | 8.5  | M20x50      |
| HDP 70                  | —                                    | 100    | 80 d9  | 22     | 10 | 8.5  | M20x50      |
| HDP 80                  | —                                    | 115    | 95 d9  | 26     | 15 | 13.5 | M24x60      |
| HDP 90                  | —                                    | 130    | 110 d9 | 26     | 15 | 13.5 | M24x60      |
| HDP 100                 | 120x4                                | 120 d9 | 96     | 26     | 16 | 12   | M24x65      |
| HDP 110                 | 130x4                                | 130 d9 | 105    | 26     | 16 | 12   | M24x65      |
| HDP 120                 | 140x4                                | 140 d9 | 115    | 26     | 19 | 15   | M24x70      |
| HDP 125                 | 150x4                                | 150 d9 | 122    | 26     | 19 | 15   | M24x70      |
| HDP 130                 | 170x4                                | 170 d9 | 142    | 33     | 21 | 17   | M30x80      |
| HDP 140                 | 180x4                                | 180 d9 | 150    | 33     | 21 | 17   | M30x80      |
| HDP 150                 | 210x5                                | 210 d9 | 178    | 33     | 29 | 18   | M30x90      |
| HDP 160                 | 210x5                                | 210 d9 | 178    | 33     | 29 | 18   | M30x90      |
| HDP 170                 | <b>BONFIGLIOLI TECHNICAL SERVICE</b> |        |        |        |    |      |             |
| HDP 180                 | <b>BONFIGLIOLI TECHNICAL SERVICE</b> |        |        |        |    |      |             |

To facilitate part removal in the area of the cylindrical guide opposite the shrink disc, install a machine pivot to which a self-lubricating cylindrical bushing (1) can be fitted and/or with a hole big enough to allow application of a rust treatment (2).

In the presence of external thrust loads, vibration, safety problems, requirements for enhanced reliability, or unfavourable mounting positions (e.g. V5 mounting positions, output shaft directed downwards), install suitable devices to secure the shaft in an axial direction and prevent accidental decoupling.





## PARALLEL SHAFT GEAR UNIT SERIES HDP ATEX CONFIGURATION

Selection of the the product must fit through the compilation of the selection form (see page 11). For a safe selection it is strongly recommended to rely on the long time experience of the Bonfiglioli Technical Service Dept.

### 21 INSTALLATION, USE AND MAINTENANCE

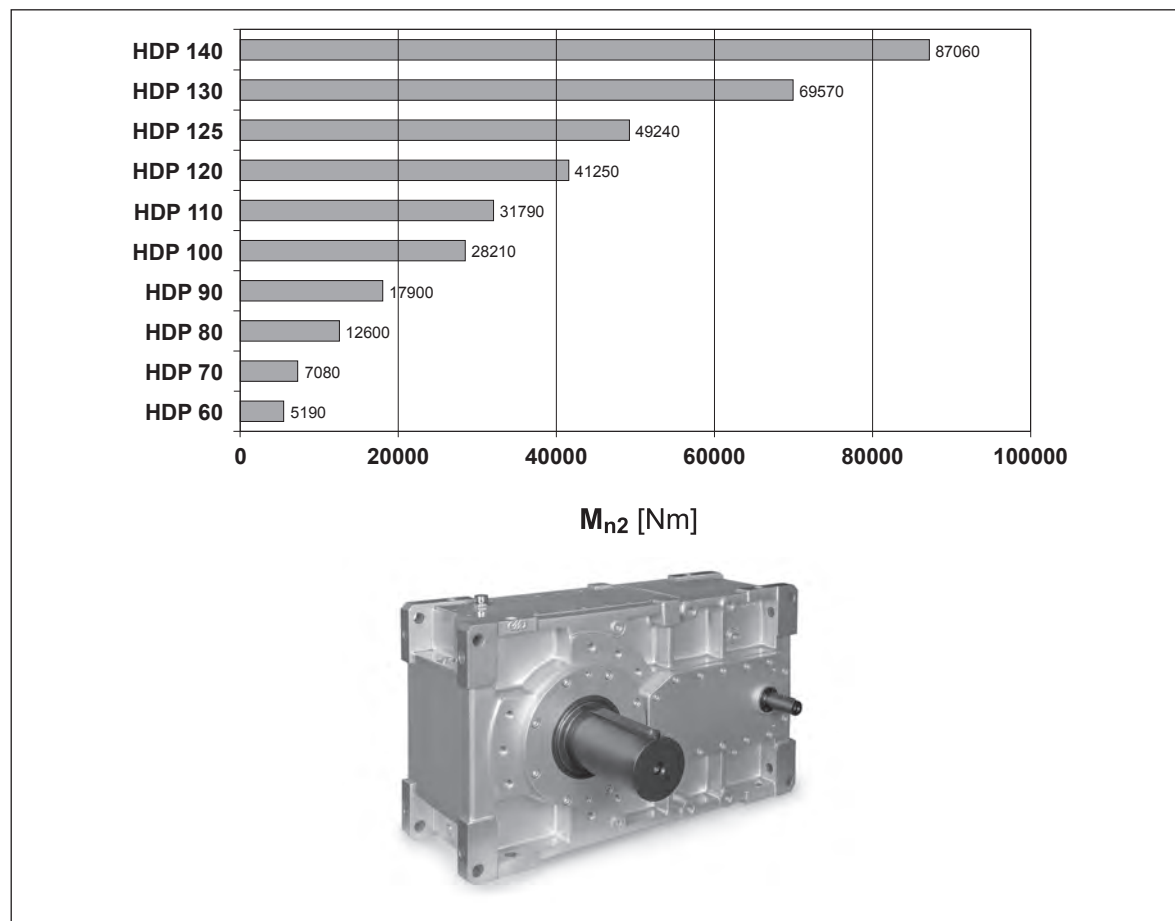
All the instructions for installation, use and maintenance of the product are given in the unit's Manual.

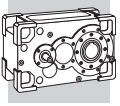
This can be downloaded from [www.bonfiglioli.com](http://www.bonfiglioli.com) where the manual is available in PDF format in a number of languages.

This document must be kept in a suitable place, in the vicinity of the installed gear unit, as a reference for all persons authorised to work with or on the product throughout its service life.

### 22 CONSTRUCTION OF ATEX-SPECIFIED EQUIPMENT

- Equipped with service plugs for periodic lubricant level checks.
- Equipped with vent caps with anti-intrusion valve.
- Fluoro elastomer seal rings as standard.
- No plastic component parts..
- Nameplate indication of the product category and type of protection.
- Components operable at above the operating temperature.
- Temperature indicator supplied along with each unit.

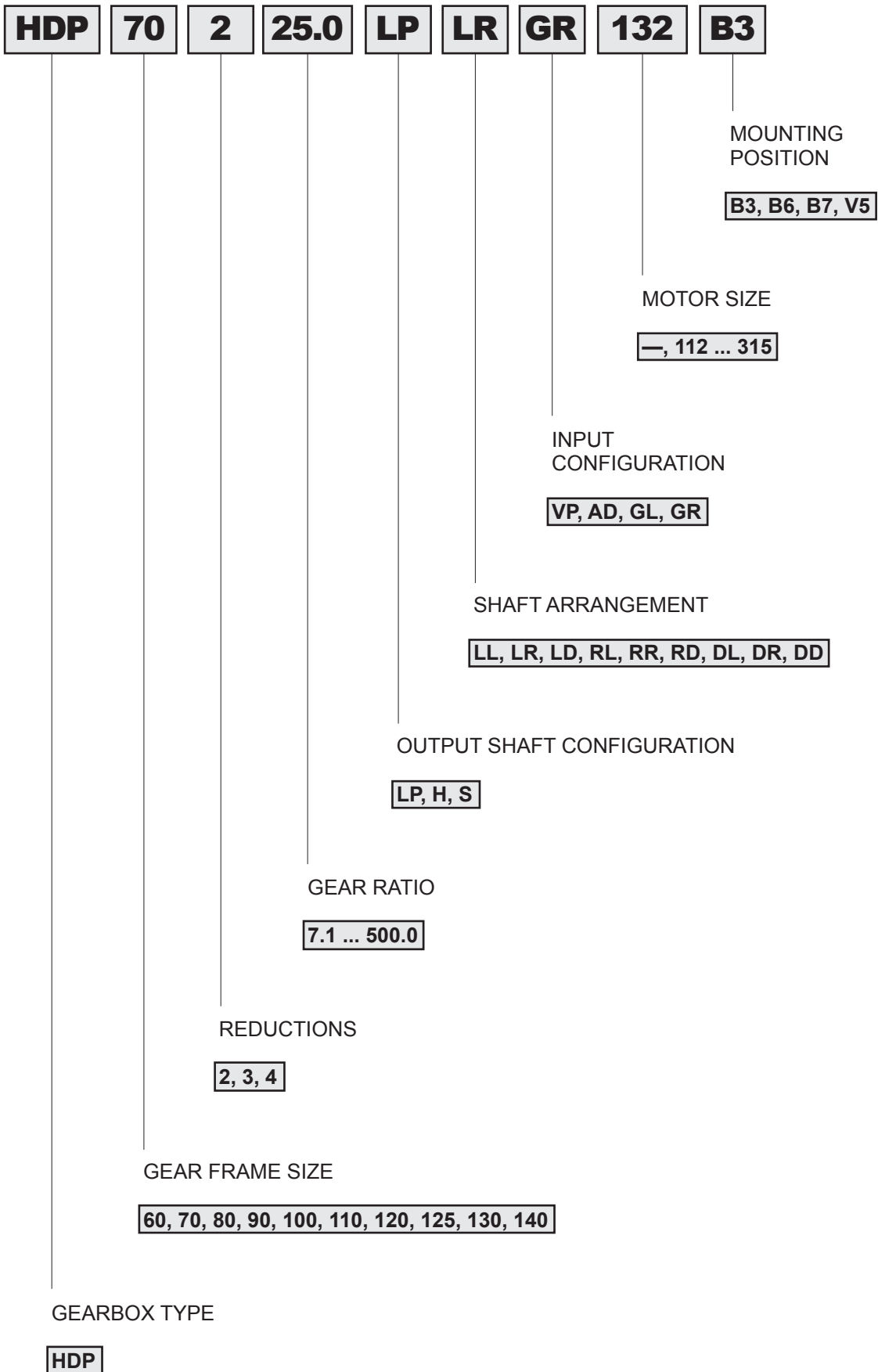


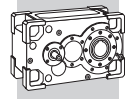


23 DESIGNATION

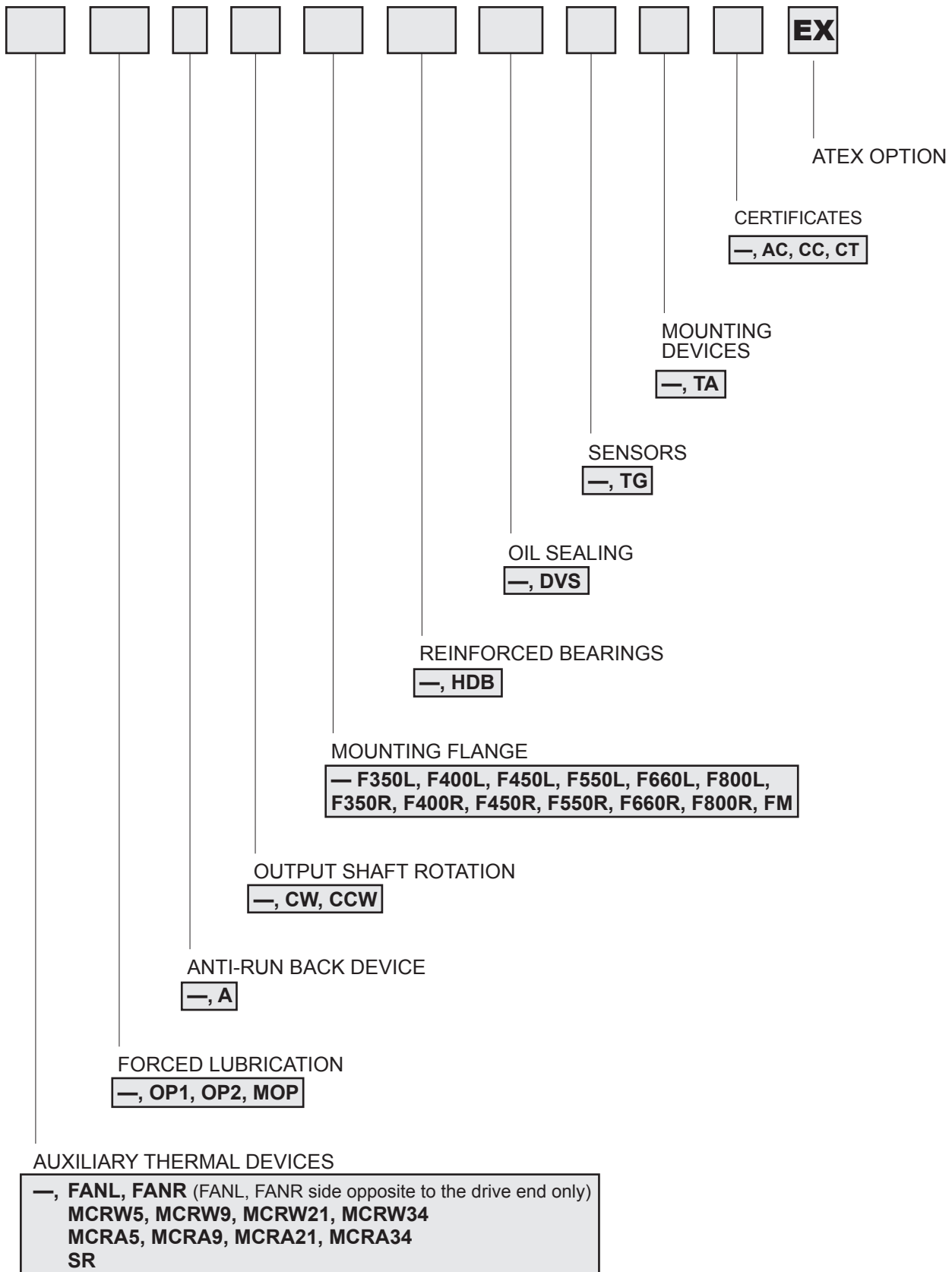
23.1 BASE VARIANTS

HDP

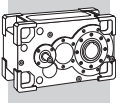




### 23.2 OPTIONAL VARIANTS

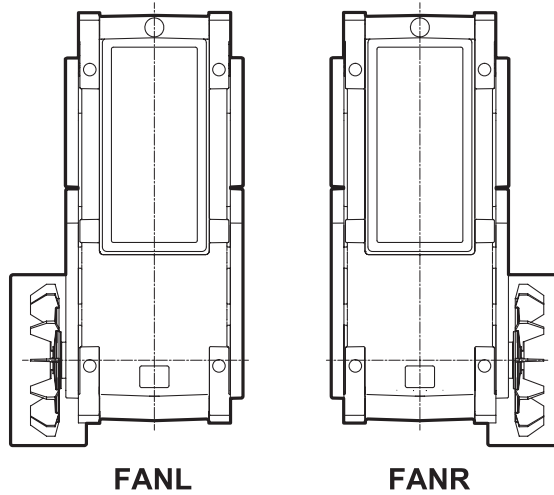


REMARK: The multiple selection of some of the variants may be subject to technical or dimensional constraints. Consult with the factory to have your selection approved.



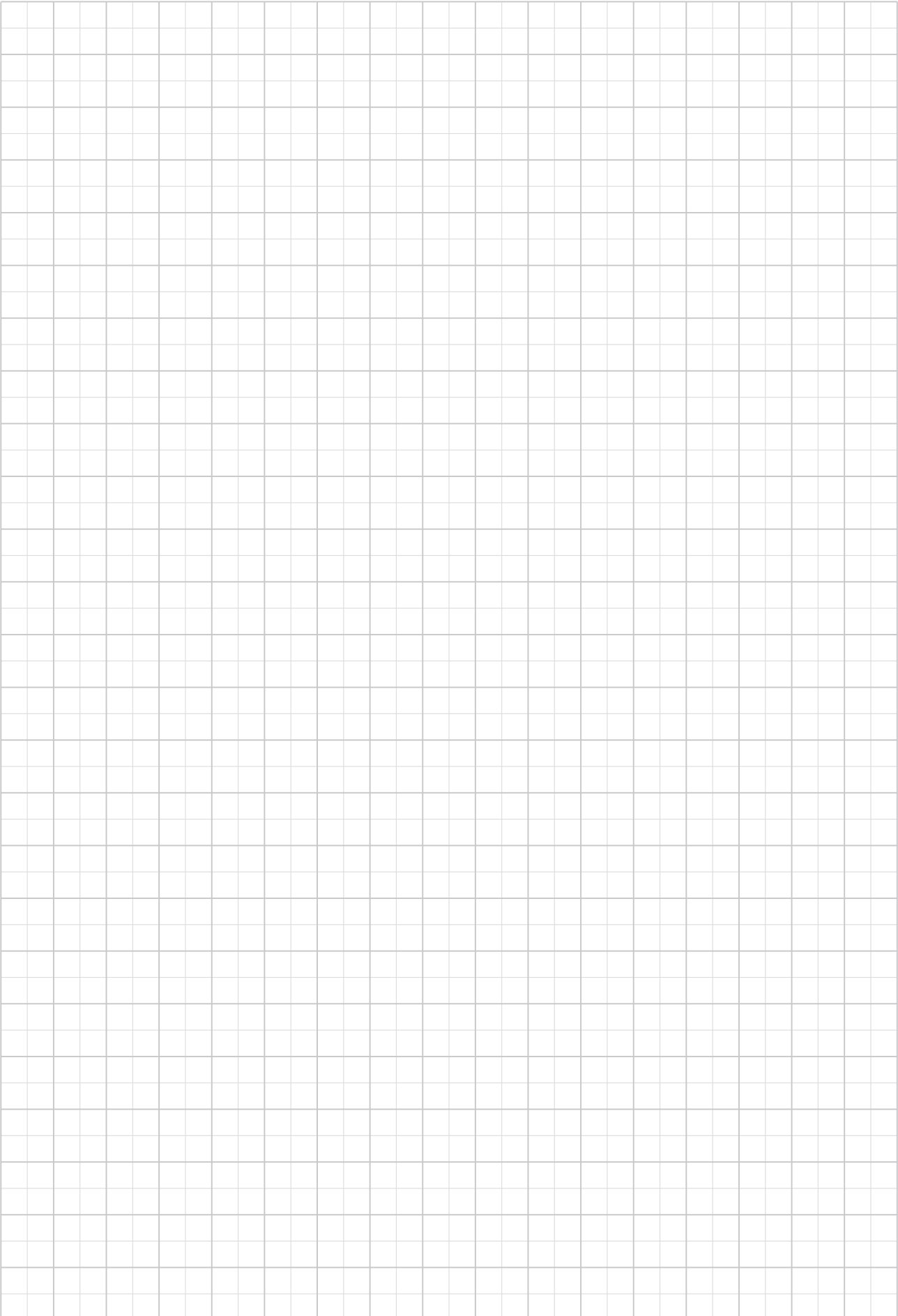
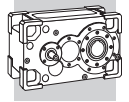
### 23.3 FAN COOLING

Greater heat dissipation capacity can be achieved by installing cooling fans, which are keyed on to the gearbox input shaft. Gear units HDP 60 ... HDP 90 featuring a solid input shaft (VP) and HDP 100 ... HDP 160 with lantern type motor adapter (GL/GR) may have an auxiliary fan fitted to the side opposite the drive end. Specify code **FANL** or **FANR**.



### 24 OTHER INFORMATION ABOUT GEARBOX AND GEARMOTOR

Mounting positions, technical data, motor availability, moments of inertia and dimensions of **HDP-EX (Atex)** series don't change among equivalent **HDP** product series. All of these information can be obtained in the related chapters of this catalogue.



HDP

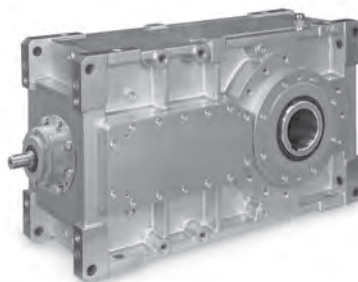
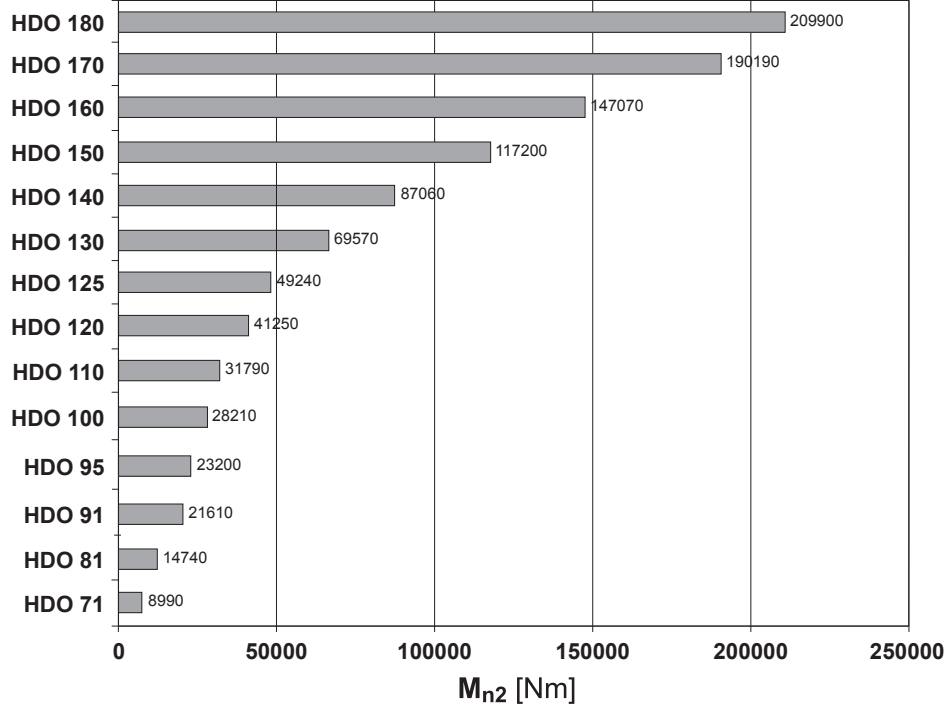


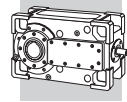
## BEVEL HELICAL GEAR UNITS SERIES HDO

### 25 DESIGN FEATURES

The main design features of the HDO bevel helical range are:

- 8 frame sizes: HDO 100, 110, 120, 125, 130, 140, 150 and 160, with 2, 3, and 4 reduction stages.
- 6 frame sizes: HDO 71, 81, 91, 95, 170, 180, with 3, and 4 reduction stages.
- Excellent distribution of rated torque values across the entire ratio range.
- Gear ratios with constant 12% escalation.
- HDO 71, 81, 91, 95, 100, 110, 120 and 125: monobloc casing in rigid, strong and precision machined spheroidal graphite cast iron, with internal and external paint finish. Universal mounting thanks to large number of machined and drilled surfaces. Casing shapes and thicknesses optimised by FEM analysis for superior structural rigidity, low acoustic emissions and reduced weight.
- HDO 130 ... HDO 180: spheroidal graphite cast iron or electrically-welded steel body made up of two half-casings, split along the same plane as the shafts. This design makes maintenance operations quick and economical. Casing shapes and thicknesses optimised by FEM analysis for superior structural rigidity, low acoustic emissions and reduced weight.
- Case hardened, tempered and ground finished alloyed steel bevel and helical gears, with corrected profiles for:
  - more silent operation and smoother running of input gears
  - maximum transmissible torque from final reduction stages
- Casehardened and ground finished input shafts; output shafts in extremely rigid hardened and tempered steel.





- Input shaft configurations:

Solid input shaft on same plane as or orthogonal to gear shafts, even simultaneously. Shaft end according to UNI/ISO 775-88 standards.

Provision for motor mounting with coupling bell and flexible joint.

- Output shaft configurations:

- solid, single or double-extension output shaft with ends conforming to UNI/ISO 775-88 standards

- hollow shaft with keyway

- hollow shaft with shrink disc

- Large, leading brand taper roller or self aligning roller bearings capable of withstanding high external loads.

- A wide range of gearbox customisation options available upon request, including:

- auxiliary cooling/heating devices

- forced lubrication systems

- backstop device

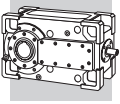
- mounting flanges or sleeves

- seals and gaskets in various types and materials

- sensors

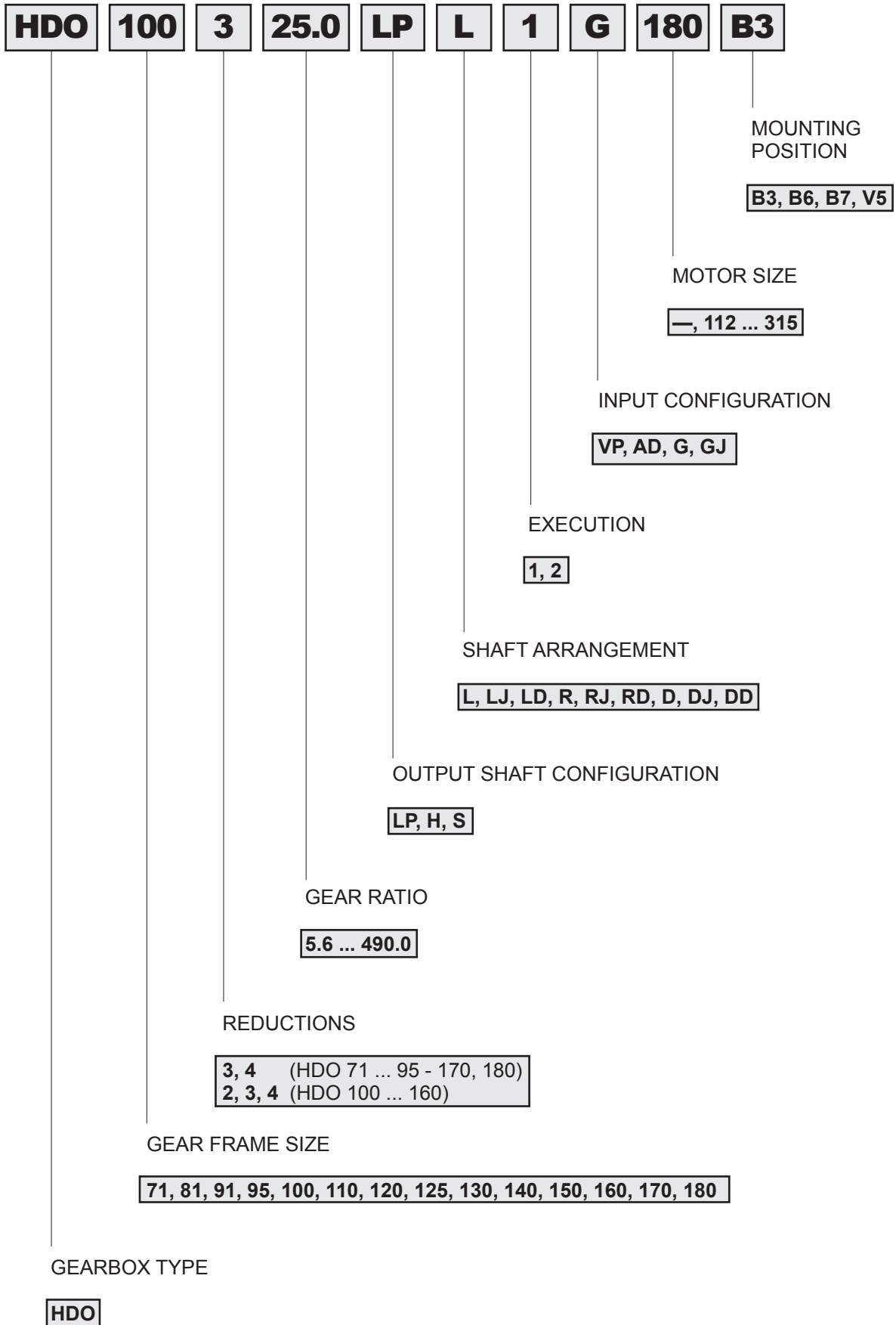
- dry-well device for vertical shaft installations

- fixing elements



26 PRODUCT CONFIGURATIONS

26.1 BASE VARIANTS

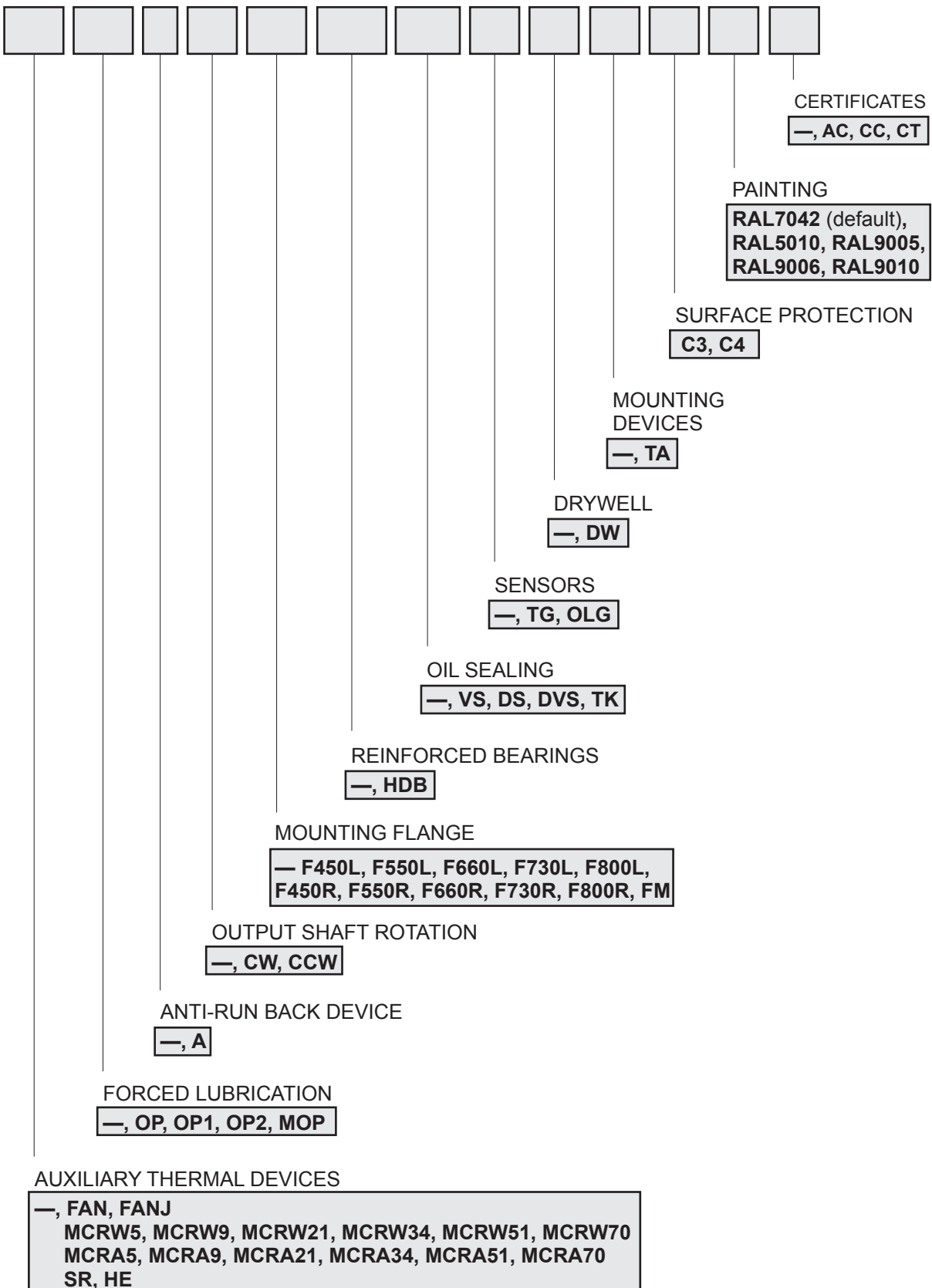


HDO



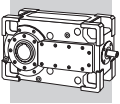


## 26.2 OPTIONAL VARIANTS

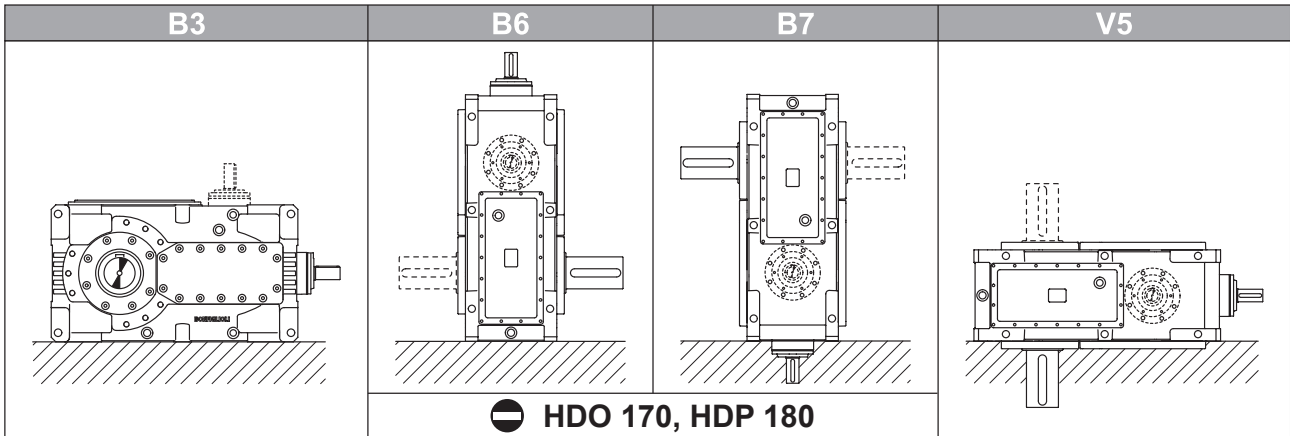


HDO

REMARK: The multiple selection of some of the variants may be subject to technical or dimensional constraints. Consult with the factory to have your selection approved.



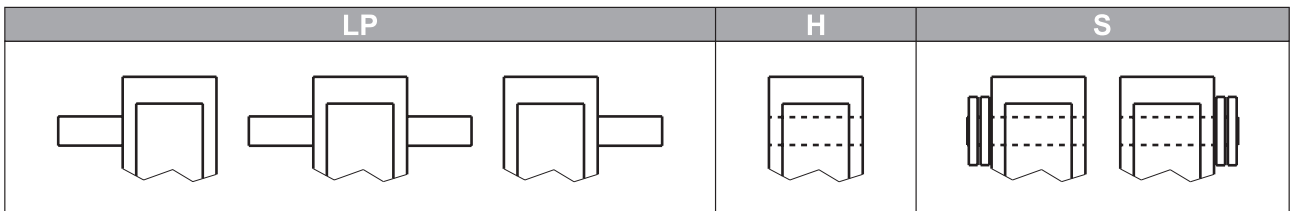
## 26.3 MOUNTING POSITION



If necessary, the sizes HDO 71-81-91-95 in position B3 can be used with the inspection cover on the bottom side. In this case it will be necessary for the installer to reverse the position of some plugs to ensure proper lubrication. For this operation please refer to the Operation and Maintenance Manual. This operation has to be evaluated taking into consideration its compatibility with the individual variants (fast part J configuration) and options (**SR, HE, TG, OLG**) by consulting our Technical Service.

## 26.4 INPUT AND OUTPUT CONFIGURATION

### 26.4.1 OUTPUT SHAFT CONFIGURATION

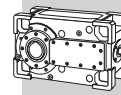


### 26.4.2 INPUT CONFIGURATION

On the input side the gear unit can be arranged in either one of the configurations described here after:

- **Solid input shaft**, single- or double-sided – Specify **VP**
- **Motor mounting through bell housing and flexible coupling**. The option is designated **G** or **GJ** depending on what side of the gear unit the coupling is mounted. The flexible coupling is within the scope for supply.

|    |  |                   |                   |
|----|--|-------------------|-------------------|
| VP |  |                   |                   |
| G  |  |                   |                   |
| GJ |  | <br>HDO 71 ... 95 | <br>HDO 71 ... 95 |



### 26.4.3 SHAFT ARRANGEMENT

|    |    | VP |   |  |  |        |  |        |
|----|----|----|---|--|--|--------|--|--------|
| B3 | LP |    | L |  |  | LJ (*) |  | LD (*) |
|    |    |    | R |  |  | RJ (*) |  | RD (*) |
|    |    |    | D |  |  | DJ (*) |  | DD (*) |
|    | S  |    | L |  |  | LJ (*) |  | LD (*) |
|    |    |    | R |  |  | RJ (*) |  | RD (*) |
|    |    |    |   |  |  |        |  |        |

HDO

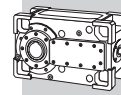
|    |    | G |   | GJ |        | HDO 71 ... 95 |        |  |        |
|----|----|---|---|----|--------|---------------|--------|--|--------|
| B3 | LP |   | L |    | LD (*) |               | LJ (*) |  | LD (*) |
|    |    |   | R |    | RD (*) |               | RJ (*) |  | RD (*) |
|    |    |   | D |    | DD (*) |               | DJ (*) |  | DD (*) |
|    | S  |   | L |    | LD (*) |               | LJ (*) |  | LD (*) |
|    |    |   | R |    | RD (*) |               | RJ (*) |  | RD (*) |
|    |    |   |   |    |        |               |        |  |        |



HDO

|         |    | VP |   |        |        |  |        |
|---------|----|----|---|--------|--------|--|--------|
| B6      | LP |    | L |        | LJ (*) |  | LD (*) |
|         |    |    | R |        | RJ (*) |  | RD (*) |
|         |    |    | D |        | DJ (*) |  | DD (*) |
|         | S  |    | L |        | LJ (*) |  | LD (*) |
|         |    |    | R |        | RJ (*) |  | RD (*) |
|         |    |    | D |        | DJ (*) |  | DD (*) |
| (*) 189 |    | H  | L | LJ (*) | LD (*) |  |        |

|         |    | G | GJ |        |        |        |        |  |        |
|---------|----|---|----|--------|--------|--------|--------|--|--------|
| B6      | LP |   | L  |        | LD (*) |        | LJ (*) |  | LD (*) |
|         |    |   | R  |        | RD (*) |        | RJ (*) |  | RD (*) |
|         |    |   | D  |        | DD (*) |        | DJ (*) |  | DD (*) |
|         | S  |   | L  |        | LD (*) |        | LJ (*) |  | LD (*) |
|         |    |   | R  |        | RD (*) |        | RJ (*) |  | RD (*) |
|         |    |   | D  |        | DD (*) |        | DJ (*) |  | DD (*) |
| (*) 189 |    | H | L  | LD (*) | LJ (*) | LD (*) |        |  |        |



|    |    | VP |   |   |        |        |        |
|----|----|----|---|---|--------|--------|--------|
| B7 | LP | L  | R | D | LJ (*) | RJ (*) | LD (*) |
|    |    | L  | R | D | LJ (*) | RJ (*) | LD (*) |
|    |    | L  | R | D | LJ (*) | RJ (*) | LD (*) |
|    | H  | L  | R | D | LJ (*) | RJ (*) | LD (*) |
|    |    | L  | R | D | LJ (*) | RJ (*) | LD (*) |
|    | S  | L  | R | D | LJ (*) | RJ (*) | LD (*) |
|    |    | L  | R | D | LJ (*) | RJ (*) | LD (*) |

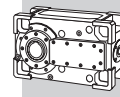
|    |    | G | GJ  HDO 71 ... 95 |        |        |
|----|----|---|-------------------|--------|--------|
| B7 | LP | L | LD (*)            | LJ (*) | LD (*) |
|    |    | R | RD (*)            | RJ (*) | RD (*) |
|    |    | D | DD (*)            | DJ (*) | DD (*) |
|    | H  | L | LD (*)            | LJ (*) | LD (*) |
|    |    | R | RD (*)            | RJ (*) | RD (*) |
|    | S  | L | LD (*)            | LJ (*) | LD (*) |
|    |    | R | RD (*)            | RJ (*) | RD (*) |



HDO

|    |    | VP |        |        |        |        |  |
|----|----|----|--------|--------|--------|--------|--|
| V5 | LP | L  |        | LJ (*) |        | LD (*) |  |
|    |    | R  |        | RJ (*) |        | RD (*) |  |
|    |    | D  |        | DJ (*) |        | DD (*) |  |
|    | H  | L  |        | LJ (*) |        | LD (*) |  |
|    |    | R  |        | RJ (*) |        | RD (*) |  |
|    | S  | L  |        | LJ (*) |        | LD (*) |  |
| R  |    |    | RJ (*) |        | RD (*) |        |  |

|    |    | G | GJ     | HDO 71 ... 95 |        |        |        |        |  |
|----|----|---|--------|---------------|--------|--------|--------|--------|--|
| V5 | LP | L |        | LD (*)        |        | LJ (*) |        | LD (*) |  |
|    |    | R |        | RD (*)        |        | RJ (*) |        | RD (*) |  |
|    |    | D |        | DD (*)        |        | DJ (*) |        | DD (*) |  |
|    | H  | L |        | LD (*)        |        | LJ (*) |        | LD (*) |  |
|    |    | R |        | RD (*)        |        | RJ (*) |        | RD (*) |  |
|    | S  | L |        | LD (*)        |        | LJ (*) |        | LD (*) |  |
| R  |    |   | RD (*) |               | RJ (*) |        | RD (*) |        |  |

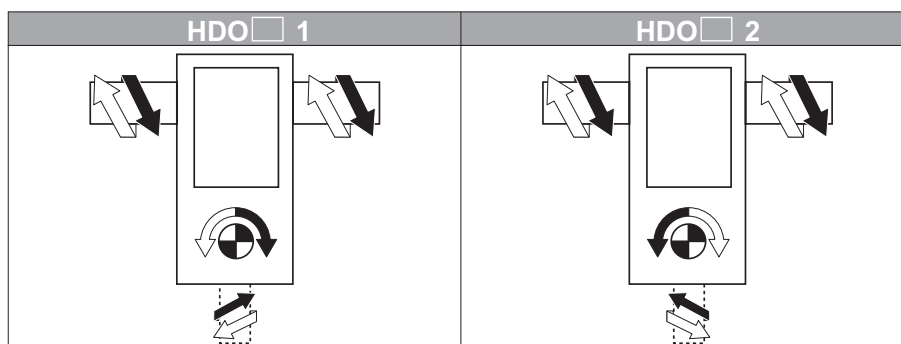


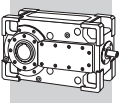
The gear ratios listed below are those that are not available for the configurations marked with (\*) in the charts here before.

| (*)       | Configurations not possible |
|-----------|-----------------------------|
|           | i                           |
| HDO 71 4  | ⊖                           |
| HDO 81 4  | ⊖                           |
| HDO 91 3  | $i = 30.6$                  |
| HDO 91 4  | ⊖                           |
| HDO 95 3  | $34.9 \leq i \leq 40.5$     |
| HDO 95 4  | ⊖                           |
| HDO 100 2 | ⊖                           |
| HDO 100 4 | ⊖                           |
| HDO 110 2 | ⊖                           |
| HDO 110 4 | ⊖                           |
| HDO 120 2 | ⊖                           |
| HDO 120 3 | $i = 24.6$                  |
| HDO 120 4 | ⊖                           |
| HDO 125 2 | ⊖                           |
| HDO 125 3 | $27.7 \leq i \leq 35.8$     |
| HDO 125 4 | ⊖                           |
| HDO 130 2 | ⊖                           |
| HDO 130 4 | ⊖                           |
| HDO 140 2 | ⊖                           |
| HDO 140 4 | ⊖                           |
| HDO 150 2 | ⊖                           |
| HDO 150 3 | $15.6 \leq i \leq 25.4$     |
| HDO 150 4 | ⊖                           |
| HDO 160 2 | ⊖                           |
| HDO 160 3 | $17.7 \leq i \leq 31.3$     |
| HDO 160 4 | ⊖                           |
| HDO 170   | ⊖                           |
| HDO 180   | ⊖                           |

HDO

## 26.5 EXECUTION





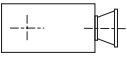
## 26.6 MOTOR AVAILABILITY

The following charts list the motor/gearbox combinations that are geometrically feasible. Variants are only applicable if either an AD (direct motor mounting) or a G/GJ input configuration (coupling through bell housing and flexible coupling) were previously specified within the ordering code.



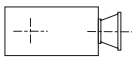

Because of standardisation, the rated power of the electric motor selected might be greater than nominal power  $P_{n1}$  of chosen gearbox. Make sure that the electric motor will never develop the extra power at any stage of the operating cycle. If you have any doubts about the validity of the application data, or uncertainty concerning the actual load pattern, install a torque limiting device or proportionally revise the applicable service factor.

|          | Input configuration |     |     |     |     |
|----------|---------------------|-----|-----|-----|-----|
|          | AD                  |     |     |     |     |
|          | 112                 | 132 | 160 | 180 | 200 |
| HDO 71 3 | —                   | X   | X   | X   | X   |
| HDO 81 3 | —                   | —   | X   | X   | X   |
| HDO 91 3 | —                   | —   | —   | X   | X   |
| HDO 91 4 | —                   | —   | X   | X   | X   |
| HDO 95 3 | —                   | —   | —   | X   | X   |
| HDO 95 4 | —                   | —   | X   | X   | X   |

|  | Input configuration |            |            |            |            |            |           |           |
|---|---------------------|------------|------------|------------|------------|------------|-----------|-----------|
|   | G                   |            |            |            |            |            |           |           |
|   | 112                 | 132        | 160        | 180        | 200        | 225        | 250       | 280       |
| HDO 71 3  | —                   | 21.8_71.9  | 21.8_71.9  | 21.8_71.9  | 21.8_71.9  | 21.8_71.9  | —         | —         |
| HDO 81 3  | —                   | —          | 25.9_71.9  | 25.9_71.9  | 25.9_71.9  | 25.9_71.9  | 25.9_71.9 | 25.9_71.9 |
| HDO 91 3  | —                   | —          | 18.6_66.1  | 18.6_66.1  | 18.6_66.1  | 18.6_66.1  | 18.6_66.1 | 18.6_66.1 |
| HDO 91 4  | 82.0_489.3          | 82.0_489.3 | 82.0_489.3 | 82.0_489.3 | 82.0_489.3 | 82.0_489.3 | —         | —         |
| HDO 95 3  | —                   | —          | 21.2_72.3  | 21.2_72.3  | 21.2_72.3  | 21.2_72.3  | 21.2_72.3 | 21.2_72.3 |
| HDO 95 4  | 81.6_489.7          | 81.6_489.7 | 81.6_489.7 | 81.6_489.7 | 81.6_489.7 | 81.6_489.7 | —         | —         |






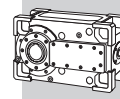
|  | Input configuration  |             |            |             |             |             |            |            |            |
|---|--|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
|   | G  |             |            |             |             |             |            |            |            |
|   | 112  | 132         | 160        | 180         | 200         | 225         | 250        | 280        | 315        |
| HDO 100_2   | —  | —           | —          | —           | —           | —           | 5.8_13.5   | 5.8_13.5   | 5.8_13.5   |
| HDO 100_3   | —  | —           | 20.2_67.5  | 20.2_67.5   | 20.2_67.5   | 20.2_67.5   | 14.0_67.5  | 14.0_67.5  | 14.0_67.5  |
| HDO 100_4   | 160.0_344.2  | 70.8_344.2  | 70.8_344.2 | 70.8_344.2  | 70.8_139.8  | 70.8_139.8  | —          | —          | —          |
| HDO 110_2   | —  | —           | —          | —           | —           | —           | —          | 6.4_15.5   | 6.4_15.5   |
| HDO 110_3   | —  | —           | 22.0_77.5  | 22.0_77.5   | 22.0_77.5   | 22.0_77.5   | 22.0_77.5  | 18.9_77.5  | 18.9_77.5  |
| HDO 110_4   | 137.1_395.0  | 137.1_395.0 | 77.4_395.0 | 77.4_395.0  | 77.4_121.7  | 77.4_121.7  | —          | —          | —          |
| HDO 120_2   | —  | —           | —          | —           | —           | —           | —          | —          | 6.6_15.5   |
| HDO 120_3   | —  | —           | —          | —           | 28.3_78.6   | 28.3_78.6   | 28.3_78.6  | 17.3_78.6  | 17.3_78.6  |
| HDO 120_4   | —  | 79.7_400.6  | 87.0_400.6 | 87.0_400.6  | 87.0_162.2  | 87.0_162.2  | —          | —          | —          |
| HDO 125_2   | —  | —           | —          | —           | —           | —           | —          | —          | 7.4_16.9   |
| HDO 125_3   | —  | —           | —          | —           | 38.8_85.9   | 38.8_85.9   | 38.8_85.9  | 19.2_85.9  | 19.2_85.9  |
| HDO 125_4   | —  | 97.0_438.0  | 97.0_438.0 | 97.0_438.0  | 97.0_178.0  | 97.0_178.0  | —          | —          | —          |
| HDO 130_2   | —  | —           | —          | —           | —           | —           | —          | —          | 5.7_13.6   |
| HDO 130_3   | —  | —           | —          | —           | —           | —           | 15.2_67.1  | 15.2_67.1  | 15.2_67.1  |
| HDO 130_4   | —  | —           | 71.5_335.6 | 71.5_335.6  | 71.5_335.6  | 71.5_335.6  | 71.5_335.6 | 71.5_335.6 | —          |
| HDO 140_2   | —  | —           | —          | —           | —           | —           | —          | —          | 6.6_15.7   |
| HDO 140_3   | —  | —           | —          | —           | —           | —           | 17.7_77.3  | 17.7_77.3  | 17.7_77.3  |
| HDO 140_4   | —  | —           | 82.3_386.6 | 82.3_386.6  | 82.3_386.6  | 82.3_386.6  | 82.3_386.6 | 82.3_386.6 | —          |
| HDO 150_2   | —  | —           | —          | —           | —           | —           | —          | —          | —          |
| HDO 150_3   | —  | —           | —          | —           | —           | —           | —          | 15.6_60.8  | 15.6_60.8  |
| HDO 150_4   | —  | —           | —          | 101.8_238.8 | 101.8_238.8 | 101.8_238.8 | 66.9_238.8 | 66.9_238.8 | 66.9_238.8 |
| HDO 160_2   | —  | —           | —          | —           | —           | —           | —          | —          | —          |
| HDO 160_3   | —  | —           | —          | —           | —           | —           | —          | 17.7_68.6  | 17.7_68.6  |
| HDO 160_4   | —  | —           | —          | 115.2_269.7 | 115.2_269.7 | 115.2_269.7 | 75.9_269.7 | 75.9_269.7 | 75.9_269.7 |
| HDO 170   |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |             |            |             |             |             |            |            |            |
| HDO 180   |  |             |            |             |             |             |            |            |            |



HDO

|  | Input configuration |           |           |           |           |                                 |                                 |
|---|---------------------|-----------|-----------|-----------|-----------|---------------------------------|---------------------------------|
|   | GJ                  |           |           |           |           |                                 |                                 |
|   | 160                 | 180       | 200       | 225       | 250       | 280                             | 315                             |
| HDO 100_2   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 100_3   | 20.2_67.5           | 20.2_67.5 | 20.2_67.5 | 20.2_67.5 | 14.0_67.5 | 14.0_67.5                       | 14.0_67.5                       |
| HDO 100_4   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 110_2   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 110_3   | 22.0_77.5           | 22.0_77.5 | 22.0_77.5 | 22.0_77.5 | 22.0_77.5 | 18.9_77.5                       | 18.9_77.5                       |
| HDO 110_4   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 120_2   | —                   | —         | —         | —         | —         | —                               | 8.9_15.5                        |
| HDO 120_3   | —                   | —         | 28.3_78.6 | 28.3_78.6 | 28.3_78.6 | 17.3_78.6<br>⊖ (24.6)           | 17.3_78.6<br>⊖ (24.6)           |
| HDO 120_4   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 125_2   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 125_3   | —                   | —         | 38.8_85.9 | 38.8_85.9 | 38.8_85.9 | 19.2_85.9<br>⊖ (27.7 33.0 35.8) | 19.2_85.9<br>⊖ (27.7 33.0 35.8) |
| HDO 125_4   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 130_2   | —                   | —         | —         | —         | —         | —                               | 7.7_13.6                        |
| HDO 130_3   | —                   | —         | —         | —         | 15.2_67.1 | 15.2_67.1                       | 15.2_67.1                       |
| HDO 130_4   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 140_2   | —                   | —         | —         | —         | —         | —                               | 9.0_15.7                        |
| HDO 140_3   | —                   | —         | —         | —         | 17.7_77.3 | 17.7_77.3                       | 17.7_77.3                       |
| HDO 140_4   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 150_2   | —                   | —         | —         | —         | —         | —                               | —                               |
| HDO 150_3   | —                   | —         | —         | —         | —         | 28.2_60.8                       | 28.2_60.8                       |
| HDO 150_4   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 160_2   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 160_3   | —                   | —         | —         | —         | —         | 34.9_68.6                       | 34.9_68.6                       |
| HDO 160_4   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 170   | ⊖                   |           |           |           |           |                                 |                                 |
| HDO 180   | ⊖                   |           |           |           |           |                                 |                                 |

i =



## 26.7 OPTIONAL VARIANTS

### 26.7.1 AUXILIARY THERMAL DEVICES

#### 26.7.1.1 FORCED VENTILATION

Improved heat dissipation can be achieved on HDO gearboxes by keying a cooling fan on to the gearbox input shaft.

Specify the **FAN** option to have the fan installed on the shaft in the same plane. The alternative option, **FANJ**, with an orthogonally mounted fan, is only available with three stage gearboxes.

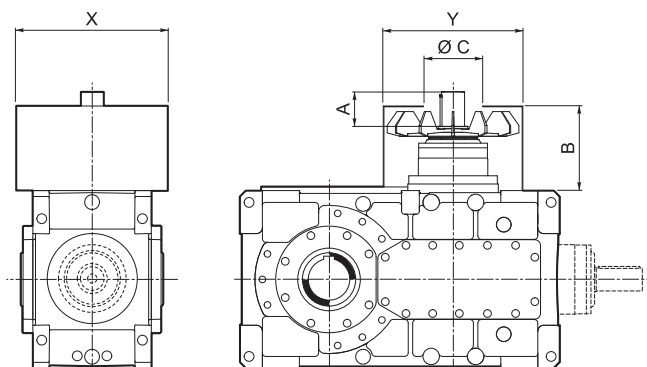
In combination with some configuration or mounting position forced ventilation may not be available along with forced lubrication devices - option OP... or MOP.

The increased cooling effect is shown by the thermal capacity value  $P_{TFAN}$  listed in section 28. This value is only significant with continuous duty applications.

The effectiveness of forced ventilation is drastically reduced in intermittent duty applications and also below drive speeds of  $n_1 = 900 \text{ min}^{-1}$ .

In such cases, other auxiliary cooling devices should be used to increase the thermal capacity of the gearbox.

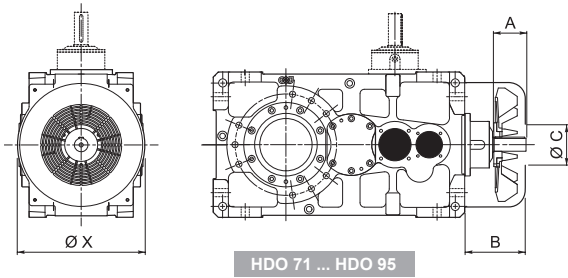
#### FANJ



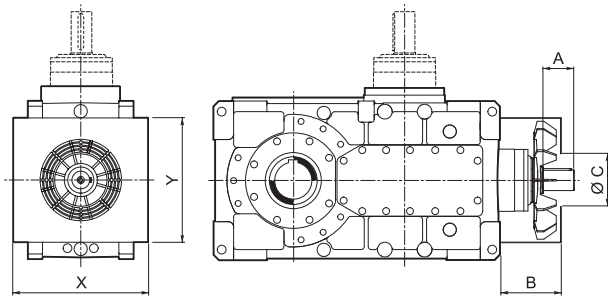
|           | A   | B   | C   | X   | Y   |
|-----------|-----|-----|-----|-----|-----|
| HDO 100 3 | 82  | 207 | 180 | 460 | 440 |
| HDO 110 3 | 82  | 207 | 180 | 460 | 440 |
| HDO 120 3 | 82  | 172 | 180 | 480 | 480 |
| HDO 125 3 | 82  | 172 | 180 | 480 | 480 |
| HDO 130 3 | 105 | 222 | 230 | 600 | 600 |
| HDO 140 3 | 105 | 222 | 230 | 600 | 600 |
| HDO 150 3 | ⊖   |     |     |     |     |
| HDO 160 3 |     |     |     |     |     |
| HDO 170   |     |     |     |     |     |
| HDO 180   |     |     |     |     |     |



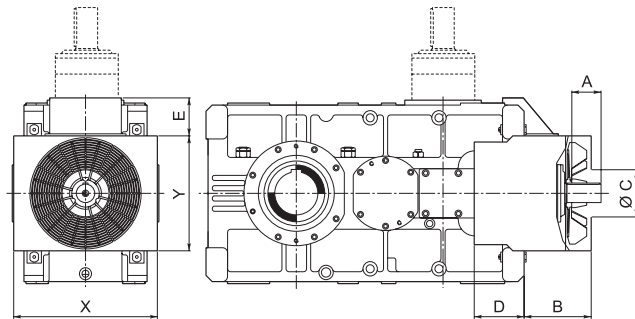
# FAN




HDO 71 ... HDO 95



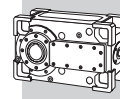
HDO 100 ... HDO 140



HDO 150 - HDO 160

|           | A  | B   | C   | D   | E   | X   | Y   |
|-----------|--|-----|-----|-----|-----|-----|-----|
| HDO 71_3  | 58   | 152 | 140 | —   | —   | 345 | —   |
| HDO 81_3  | 82   | 162 | 140 | —   | —   | 345 | —   |
| HDO 91_3  | 82   | 209 | 140 | —   | —   | 440 | —   |
| HDO 91_4  | 58   | 209 | 140 | —   | —   | 440 | —   |
| HDO 95_3  | 82   | 209 | 140 | —   | —   | 440 | —   |
| HDO 95_4  | 58   | 209 | 140 | —   | —   | 440 | —   |
| HDO 100_2 | 105  | 207 | 180 | —   | —   | 460 | 424 |
| HDO 100_3 | 82   | 207 | 180 | —   | —   | 460 | 424 |
| HDO 100_4 | 58   | 207 | 180 | —   | —   | 460 | 424 |
| HDO 110_2 | 105  | 207 | 180 | —   | —   | 460 | 424 |
| HDO 110_3 | 82   | 207 | 180 | —   | —   | 460 | 424 |
| HDO 110_4 | 58   | 207 | 180 | —   | —   | 460 | 424 |
| HDO 120_2 | 105  | 232 | 180 | —   | —   | 480 | 460 |
| HDO 120_3 | 82   | 172 | 180 | —   | —   | 480 | 460 |
| HDO 120_4 | 58   | 172 | 180 | —   | —   | 480 | 460 |
| HDO 125_2 | 105  | 232 | 180 | —   | —   | 480 | 460 |
| HDO 125_3 | 82   | 172 | 180 | —   | —   | 480 | 460 |
| HDO 125_4 | 58   | 172 | 180 | —   | —   | 480 | 460 |
| HDO 130_2 | 140  | 327 | 230 | —   | —   | 600 | 600 |
| HDO 130_3 | 105  | 222 | 230 | —   | —   | 600 | 600 |
| HDO 130_4 | 82   | 287 | 230 | —   | —   | 600 | 600 |
| HDO 140_2 | 140  | 327 | 230 | —   | —   | 600 | 600 |
| HDO 140_3 | 105  | 222 | 230 | —   | —   | 600 | 600 |
| HDO 140_4 | 82   | 287 | 230 | —   | —   | 600 | 600 |
| HDO 150_2 | 165  | 387 | 230 | 243 | 185 | 700 | 560 |
| HDO 150_3 | 130  | 327 | 230 | 243 | 185 | 700 | 560 |
| HDO 150_4 | 82   | 297 | 230 | 243 | 185 | 700 | 560 |
| HDO 160_2 | 165  | 387 | 230 | 243 | 185 | 700 | 560 |
| HDO 160_3 | 130  | 327 | 230 | 243 | 185 | 700 | 560 |
| HDO 160_4 | 82   | 297 | 230 | 243 | 185 | 700 | 560 |
| HDO 170   |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |     |     |     |     |     |     |
| HDO 180   |  |     |     |     |     |     |     |

HDO



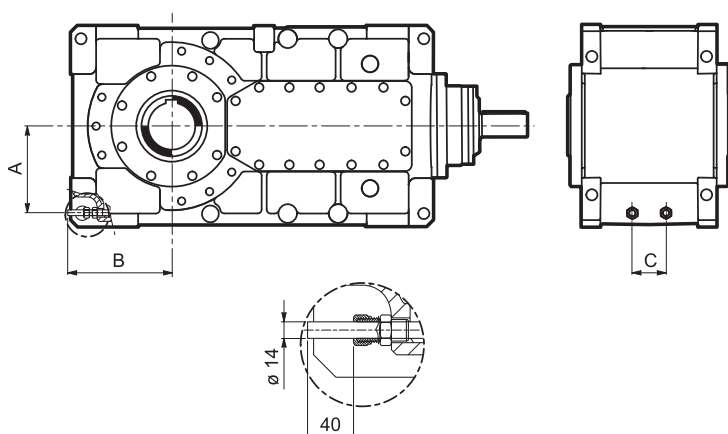
### 26.7.1.2 HEAT DISSIPATION THROUGH COOLING COIL

The cooling coil option **SR** is designed for integration in a cooling circuit to be provided by the installer.

For optimal efficiency the cooling circuit supply must comply with the following specifications:

- max. pressure 8 bar
- min flow rate 5 l/min for HDO 71 ... HDO 95
- min flow rate 10 l/min for HDO 100 ... HDO 140
- max. water temperature 20°C

The increased cooling effect obtained in these conditions is shown by the thermal capacity value  $P_{TSR}$ . See the section 28



|            | A                                | B   | C   |
|------------|----------------------------------|-----|-----|
| HDO 71_SR  | 147                              | 170 | 60  |
| HDO 81_SR  | 173                              | 190 | 60  |
| HDO 91_SR  | 190                              | 210 | 60  |
| HDO 95_SR  | 215                              | 259 | 60  |
| HDO 100_SR | 230                              | 285 | 100 |
| HDO 110_SR | 230                              | 270 | 100 |
| HDO 120_SR | 258                              | 305 | 100 |
| HDO 125_SR | 258                              | 305 | 100 |
| HDO 130_SR | 325                              | 340 | 100 |
| HDO 140_SR | 325                              | 365 | 100 |
| HDO 150    | BONFIGLIOLI<br>TECHNICAL SERVICE |     |     |
| HDO 160    |                                  |     |     |
| HDO 170    |                                  |     |     |
| HDO 180    |                                  |     |     |

### 26.7.1.3 AUXILIARY COOLING WITH AUTONOMOUS COOLING UNIT

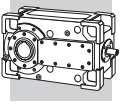
Two types of cooling unit are available, each in a range of sizes providing different cooling capacities. The two types use different cooling media for the oil: MCRW... – water/oil heat exchanger and MCRA... – air/oil heat exchanger.

If an autonomous cooling unit is installed on the advice of the Bonfiglioli Technical Service, no additional forced lubrication devices are required. See section 26.7.2. The following chart shows device availability according to gearbox size. Your selection must take into account the deficit in thermal power that must be made up by contribution  $P_{TMCRW}$  or  $P_{TMCRA}$  as shown in the chart in section 28.

|         | MCRW5<br>MCRA5                | MCRW9<br>MCRA9 | MCRW21<br>MCRA21 | MCRW34<br>MCRA34 | MCRW51<br>MCRA51 | MCRW70<br>MCRA70 |
|---------|-------------------------------|----------------|------------------|------------------|------------------|------------------|
| HDO 100 | X                             | X              |                  |                  |                  |                  |
| HDO 110 | X                             | X              |                  |                  |                  |                  |
| HDO 120 | X                             | X              | X (*)            |                  |                  |                  |
| HDO 125 | X                             | X              | X (**)           |                  |                  |                  |
| HDO 130 | X                             | X              | X                | X (**)           |                  |                  |
| HDO 140 | X                             | X              | X                | X (**)           |                  |                  |
| HDO 150 | X                             | X              | X                | X                | X (**)           |                  |
| HDO 160 | X                             | X              | X                | X                | X (**)           |                  |
| HDO 170 | BONFIGLIOLI TECHNICAL SERVICE |                |                  |                  |                  |                  |
| HDO 180 |                               |                |                  |                  |                  |                  |

(\*) not available for mounting position B3.

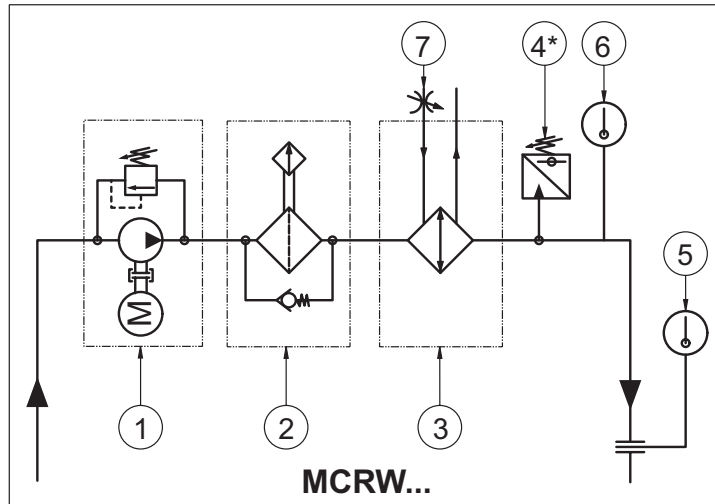
(\*\*) not available for double reduction units in the mounting position B3.



The main components of the cooling units are as follows:

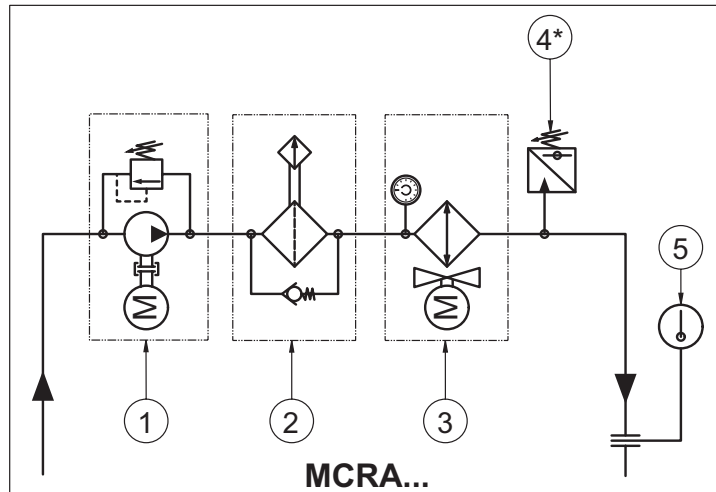
**MCRW...**

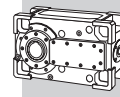
- 1) motorpump complete with by-pass circuit
- 2) filter with clogging visual indicator
- 3) water/oil heat exchanger
- 4) minimum pressure switch (only available in combination with forced lubrication)
- 5) maximum temperature thermostat
- 6) minimum temperature switch
- 7) electro-valve



**MCRA...**

- 1) motorpump complete with by-pass circuit
- 2) filter with clogging visual indicator
- 3) air/oil heat exchanger with thermostat
- 4) minimum pressure switch (only available in combination with forced lubrication)
- 5) maximum temperature thermostat





**General warnings:**

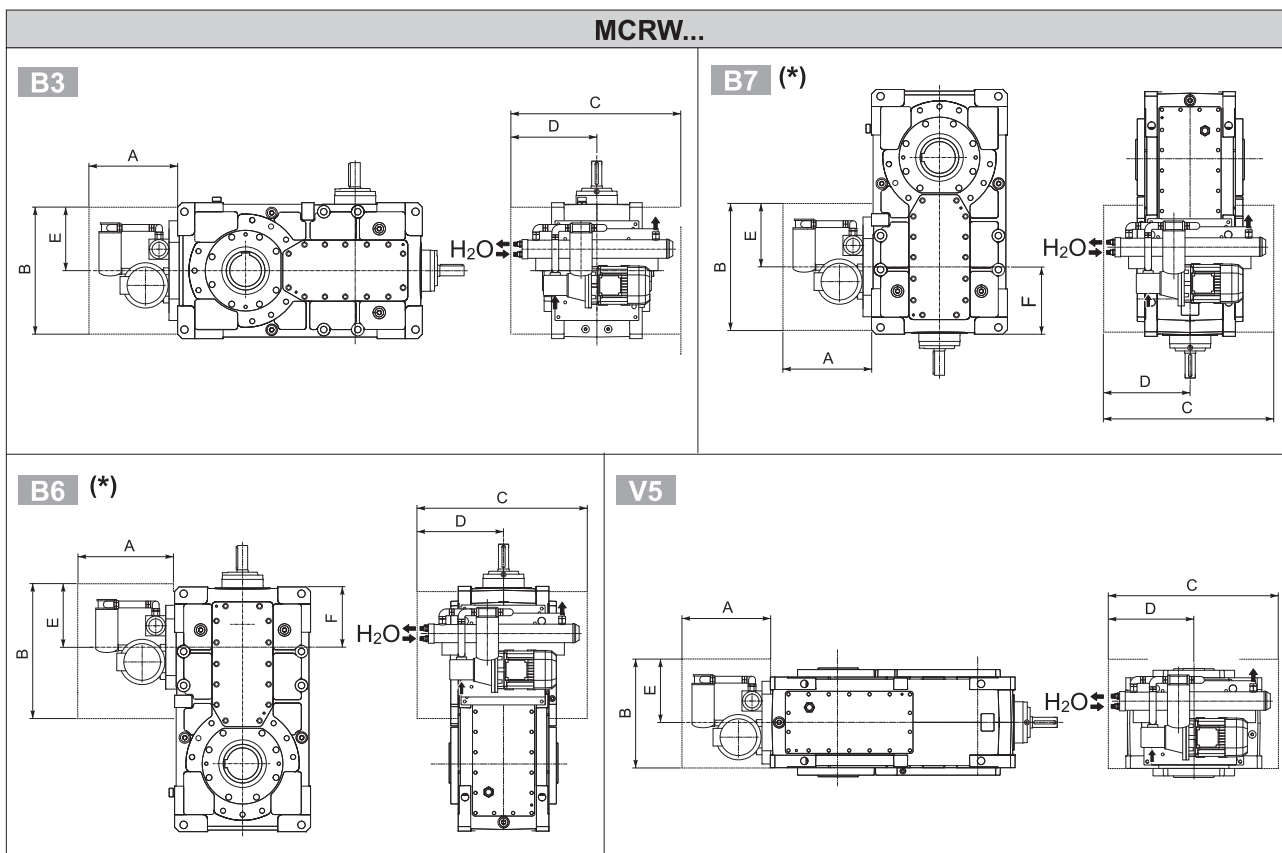
**MCRW...** : provide a water supply system that corresponds to the following specifications:

- max. pressure, 10 bar
- maximum delivery temperature, 20°C
- minimum flow rate  $Q_{H_2O}$  as per the chart:

|                    | MCRW5 | MCRW9 | MCRW21 | MCRW34 | MCRW51 | MCRW70                        |
|--------------------|-------|-------|--------|--------|--------|-------------------------------|
| $Q_{H_2O}$ [l/min] | 10    | 18    | 31     | 56     | 81     | BONFIGLIOLI TECHNICAL SERVICE |

**MCRA...** : leave sufficient space around the heat exchanger to ensure an unrestricted air flow.

The cooling units are installed on the gearboxes as shown in the figure below.



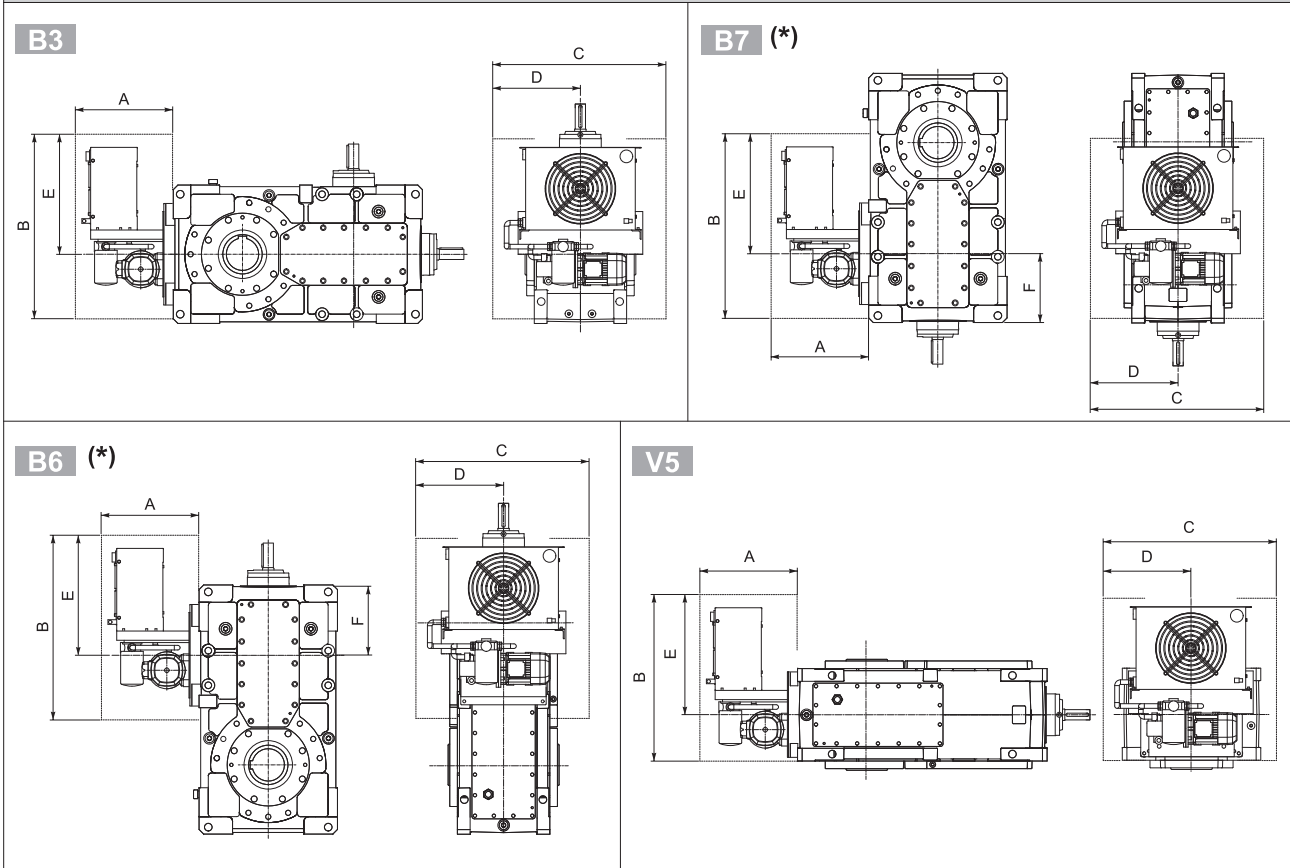
|        | A                             | B   | C    | D   | E   | F                 |       |         |       |                               |       |                   |       |                   |       |
|--------|-------------------------------|-----|------|-----|-----|-------------------|-------|---------|-------|-------------------------------|-------|-------------------|-------|-------------------|-------|
|        |                               |     |      |     |     | HDO 100 - HDO 110 |       | HDO 120 |       | HDO 125                       |       | HDO 130 - HDO 140 |       | HDO 150 - HDO 160 |       |
|        |                               |     |      |     |     | 2x                | 3x/4x | 2x      | 3x/4x | 2x                            | 3x/4x | 2x                | 3x/4x | 2x                | 3x/4x |
| MCRW5  | 360                           | 415 | 730  | 365 | 230 |                   |       |         |       |                               |       |                   |       |                   |       |
| MCRW9  | 360                           | 380 | 870  | 435 | 195 |                   |       |         |       |                               |       |                   |       |                   |       |
| MCRW21 | 400                           | 425 | 780  | 390 | 240 | 325               | 270   | 350     | 300   | BONFIGLIOLI TECHNICAL SERVICE | 420   | 380               | 475   | 395               |       |
| MCRW34 | 430                           | 650 | 1000 | 500 | 465 |                   |       |         |       |                               |       |                   |       |                   |       |
| MCRW51 | 520                           | 650 | 1250 | 625 | 465 |                   |       |         |       |                               |       |                   |       |                   |       |
| MCRW70 | BONFIGLIOLI TECHNICAL SERVICE |     |      |     |     |                   |       |         |       |                               |       |                   |       |                   |       |

(\*) Units featuring the "J" input configuration have the cooling unit fitted on opposite side as shown.

Overall dimensions A, B, C, D and E are indicative only



MCRA...



|        | A                             | B    | C    | D   | E   | F                 |       |         |       |                               |       |                   |       |                   |       |
|--------|-------------------------------|------|------|-----|-----|-------------------|-------|---------|-------|-------------------------------|-------|-------------------|-------|-------------------|-------|
|        |                               |      |      |     |     | HDO 100 - HDO 110 |       | HDO 120 |       | HDO 125                       |       | HDO 130 - HDO 140 |       | HDO 150 - HDO 160 |       |
|        |                               |      |      |     |     | 2x                | 3x/4x | 2x      | 3x/4x | 2x                            | 3x/4x | 2x                | 3x/4x | 2x                | 3x/4x |
| MCRA5  | 400                           | 560  | 500  | 250 | 375 |                   |       |         |       |                               |       |                   |       |                   |       |
| MCRA9  | 435                           | 650  | 640  | 320 | 465 |                   |       |         |       |                               |       |                   |       |                   |       |
| MCRA21 | 440                           | 815  | 700  | 350 | 630 | 325               | 270   | 350     | 300   | BONFIGLIOLI TECHNICAL SERVICE | 420   | 380               | 475   | 395               |       |
| MCRA34 | 500                           | 920  | 840  | 420 | 735 |                   |       |         |       |                               |       |                   |       |                   |       |
| MCRA51 | 560                           | 1075 | 1000 | 500 | 890 |                   |       |         |       |                               |       |                   |       |                   |       |
| MCRA70 | BONFIGLIOLI TECHNICAL SERVICE |      |      |     |     |                   |       |         |       |                               |       |                   |       |                   |       |

(\*) Units featuring the "J" input configuration have the cooling unit fitted on opposite side as shown.

Overall dimensions A, B, C, D and E are indicative only

26.7.1.4 HEATERS

In very low ambient temperatures it may prove necessary to pre-heat the lubricant in the sump before start-up and/or during operation. The **HE** option envisages the installation of an electrical heating element, supplied with a thermostat to detect when the minimum temperature needed for correct operation has been reached. The wiring necessary for the thermostat must be provided by the installer.





## 26.7.2 FORCED LUBRICATION

Pattern for MANDATORY specification of forced lubrication devices.

| HDO 71 ... HDO 95 |          |           |           |    |    |
|-------------------|----------|-----------|-----------|----|----|
|                   |          | B3        | B6        | B7 | V5 |
|                   | L R D    | ⊘         | OP<br>MOP | ⊘  | ⊘  |
|                   | LJ RJ DJ | OP<br>MOP | ⊘         | ⊘  | ⊘  |
|                   | LD RD DD | OP<br>MOP | OP<br>MOP | ⊘  | ⊘  |

| HDO 100 ... HDO 180 |          |           |           |    |              |
|---------------------|----------|-----------|-----------|----|--------------|
|                     |          | B3        | B6        | B7 | V5           |
|                     | L R D    | ⊘         | OP<br>MOP | ⊘  | OP...<br>MOP |
|                     | LJ RJ DJ | OP<br>MOP | ⊘         | ⊘  | OP...<br>MOP |
|                     | LD RD DD | OP<br>MOP | OP<br>MOP | ⊘  | OP...<br>MOP |

Remark: Forced lubrication devices may be replaced, upon approval from Bonfiglioli Technical Service, by independent cooling systems, type MCR...

### 26.7.2.1 PUMP FOR MOUNTING POSITIONS B3 and B6

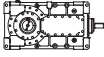
In continuous duty applications and, when required, for B3 or B6 mounting positions (see section [26.7.2](#)), an optional forced lubrication circuit is available with a mechanically driven pump keyed on to the intermediate shaft.

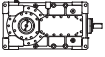
This circuit only guarantees lubrication of the top bearings that are not immersed in oil.

Before specifying the OP option in your order, check the chart to make sure that the device is fully compatible with the drive speed  $n_1$  and reduction ratio. See the following diagram.

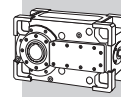


**HDO**

|  | i                         | n <sub>1</sub>         |                        |                        |
|---|---------------------------|------------------------|------------------------|------------------------|
|   |                           | 1000 min <sup>-1</sup> | 1200 min <sup>-1</sup> | 1500 min <sup>-1</sup> |
| HDO 71 3  | 21.8 ≤ i ≤ 48.7           | OP                     | OP                     | OP                     |
|   | 54.2 ≤ i ≤ 71.9           | ⊖                      | ⊖                      | OP                     |
| HDO 71 4  | 77.0 ≤ i ≤ 197.0 i=237.7  | OP                     | OP                     | OP                     |
|   | i=228.2 308.9 ≤ i ≤ 475.4 | ⊖                      | ⊖                      | ⊖                      |
| HDO 81 3  | 25.9 ≤ i ≤ 39.9 i=48.1    | OP                     | OP                     | OP                     |
|   | i=44.9 55.1 ≤ i ≤ 71.9    | ⊖                      | ⊖                      | OP                     |
| HDO 81 4  | 78.3 ≤ i ≤ 181.4 i=227.8  | OP                     | OP                     | OP                     |
|   | i=196.5 254.8 ≤ i ≤ 473.3 | ⊖                      | ⊖                      | ⊖                      |
| HDO 91 3  | 18.6 ≤ i ≤ 30.6           | OP                     | OP                     | OP                     |
|   | 36.9 ≤ i ≤ 66.1           | ⊖                      | ⊖                      | OP                     |
| HDO 91 4  | 82.0 ≤ i ≤ 225.4          | OP                     | OP                     | OP                     |
|   | 256.3 ≤ i ≤ 489.3         | ⊖                      | ⊖                      | ⊖                      |
| HDO 95 3  | 21.2 ≤ i ≤ 40.5           | OP                     | OP                     | OP                     |
|   | 44.0 ≤ i ≤ 72.3           | ⊖                      | ⊖                      | OP                     |
| HDO 95 4  | 81.6 ≤ i ≤ 231.1          | OP                     | OP                     | OP                     |
|   | 256.6 ≤ i ≤ 489.7         | ⊖                      | ⊖                      | ⊖                      |
| HDO 100 2   | 5.8 ≤ i ≤ 8.7             | OP                     | OP                     | OP                     |
|   | i = 10.0; 10.9            | ⊖                      | OP                     | OP                     |
|   | i = 12.4; 13.5            | ⊖                      | ⊖                      | OP                     |
| HDO 100 3   | 14.0 ≤ i ≤ 40.0           | OP                     | OP                     | OP                     |
|   | 43.9 ≤ i ≤ 67.5           | ⊖                      | ⊖                      | OP                     |
| HDO 100 4   | 70.8 ≤ i ≤ 139.8          | OP                     | OP                     | OP                     |
|   | 160.0 ≤ i ≤ 344.2         | ⊖                      | ⊖                      | OP                     |
| HDO 110 2   | 6.4 ≤ i ≤ 10.0            | OP                     | OP                     | OP                     |
|   | i = 10.9; 12.5            | ⊖                      | OP                     | OP                     |
|   | i = 13.5; 15.5            | ⊖                      | ⊖                      | OP                     |
| HDO 110 3   | 18.9 ≤ i ≤ 43.6           | OP                     | OP                     | OP                     |
|   | 48.0 ≤ i ≤ 77.5           | ⊖                      | ⊖                      | OP                     |
| HDO 110 4   | 77.4 ≤ i ≤ 121.7          | OP                     | OP                     | OP                     |
|   | 137.1 ≤ i ≤ 395.0         | ⊖                      | ⊖                      | OP                     |
| HDO 120 2   | 6.6 ≤ i ≤ 10.0            | OP                     | OP                     | OP                     |
|   | i = 11.1; 12.5            | ⊖                      | OP                     | OP                     |
|   | i = 13.7; 15.5            | ⊖                      | ⊖                      | OP                     |
| HDO 120 3   | 17.3 ≤ i ≤ 44.9           | OP                     | OP                     | OP                     |
|   | 49.5 ≤ i ≤ 78.6           | ⊖                      | ⊖                      | OP                     |
| HDO 120 4   | 87.0 ≤ i ≤ 162.2          | OP                     | OP                     | OP                     |
|   | 179.7 ≤ i ≤ 400.6         | ⊖                      | ⊖                      | OP                     |
| HDO 125 2   | 7.4 ≤ i ≤ 9.9             | OP                     | OP                     | OP                     |
|   | i = 11.5; 12.3            | ⊖                      | OP                     | OP                     |
|   | i = 14.2; 15.3; 16.9      | ⊖                      | ⊖                      | OP                     |
| HDO 125 3   | 19.2 ≤ i ≤ 55.5           | OP                     | OP                     | OP                     |
|   | 60.1 ≤ i ≤ 85.9           | OP                     | ⊖                      | ⊖                      |
| HDO 125 4   | 90.1 ≤ i ≤ 178.0          | OP                     | OP                     | OP                     |
|   | 200.3 ≤ i ≤ 438.0         | OP                     | ⊖                      | ⊖                      |

|  | i                 | n <sub>1</sub>         |                        |                        |
|---|-------------------|------------------------|------------------------|------------------------|
|   |                   | 1000 min <sup>-1</sup> | 1200 min <sup>-1</sup> | 1500 min <sup>-1</sup> |
| HDO 130 2   | 5.7 ≤ i ≤ 7.1     | ⊖                      | OP                     | OP                     |
|   | i = 7.7; 8.8      | ⊖                      | ⊖                      | OP                     |
| HDO 130 3   | 9.6 ≤ i ≤ 13.6    | ⊖                      | ⊖                      | ⊖                      |
|   | 15.2 ≤ i ≤ 34.9   | OP                     | OP                     | OP                     |
| HDO 130 4   | 38.3 ≤ i ≤ 67.1   | ⊖                      | ⊖                      | OP                     |
|   | 71.5 ≤ i ≤ 190.3  | OP                     | OP                     | OP                     |
| HDO 140 2   | 219.1 ≤ i ≤ 335.6 | ⊖                      | ⊖                      | OP                     |
|   | 6.6 ≤ i ≤ 8.2     | ⊖                      | OP                     | OP                     |
| HDO 140 3   | i = 9.0; 10.1     | ⊖                      | ⊖                      | OP                     |
|   | 11.3 ≤ i ≤ 15.7   | ⊖                      | ⊖                      | ⊖                      |
| HDO 140 4   | 17.7 ≤ i ≤ 44.4   | OP                     | OP                     | OP                     |
|   | 50.4 ≤ i ≤ 77.3   | ⊖                      | ⊖                      | OP                     |
| HDO 150 2   | 82.3 ≤ i ≤ 180.0  | OP                     | OP                     | OP                     |
|   | 198.3 ≤ i ≤ 386.6 | ⊖                      | ⊖                      | OP                     |
| HDO 150 3   | 5.5 ≤ i ≤ 7.0     | ⊖                      | OP                     | OP                     |
|   | i = 8.1; 8.9      | ⊖                      | ⊖                      | OP                     |
|   | 10.0 ≤ i ≤ 13.7   | ⊖                      | ⊖                      | ⊖                      |
| HDO 150 4   | 15.6 ≤ i ≤ 25.4   | ⊖                      | OP                     | OP                     |
|   | 28.2 ≤ i ≤ 36.0   | ⊖                      | ⊖                      | OP                     |
| HDO 160 2   | 40.2 ≤ i ≤ 60.8   | ⊖                      | ⊖                      | ⊖                      |
|   | 66.9 ≤ i ≤ 92.9   | OP                     | OP                     | OP                     |
|   | 101.8 ≤ i ≤ 141.5 | ⊖                      | OP                     | OP                     |
| HDO 160 3   | 157.9 ≤ i ≤ 238.8 | ⊖                      | ⊖                      | ⊖                      |
|   | i = 7.3; 7.9      | ⊖                      | OP                     | OP                     |
|   | 8.9 ≤ i ≤ 11.3    | ⊖                      | ⊖                      | OP                     |
| HDO 160 4   | 12.2 ≤ i ≤ 15.4   | ⊖                      | ⊖                      | ⊖                      |
|   | 17.7 ≤ i ≤ 31.3   | ⊖                      | OP                     | OP                     |
| HDO 170   | 34.9 ≤ i ≤ 44.3   | ⊖                      | ⊖                      | OP                     |
|   | 49.4 ≤ i ≤ 68.6   | ⊖                      | ⊖                      | ⊖                      |
| HDO 180   | 75.9 ≤ i ≤ 96.3   | OP                     | OP                     | OP                     |
|   | 115.2 ≤ i ≤ 174.0 | ⊖                      | OP                     | OP                     |
|   |                   | ⊖                      | ⊖                      | ⊖                      |

This option is not available with other configurations that use the same shaft end.



HDO ... G ... B6  
HDO ... VP ... B6

**HDO 71 ... 95**

- 3x ... 2
- 4x ... 2

**HDO 71 ... 95**

- 3x ... 1
- 4x ... 1

**HDO 100 ... 140**

- 2x ... 2
- 3x ... 2
- 4x ... 2

**HDO 100 ... 140**

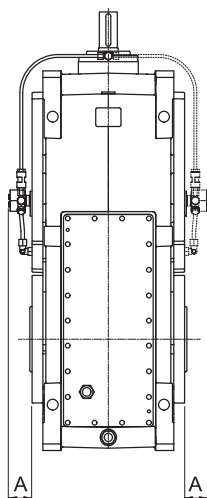
- 2x ... 1
- 3x ... 1
- 4x ... 1

**HDO 150 - 160**

- 2x ... 2
- 3x ... 2
- 4x ... 1

**HDO 150 - 160**

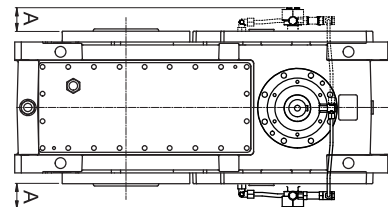
- 2x ... 1
- 3x ... 1
- 4x ... 2



HDO ... VP ... B3

**HDO 71 ... 95**

- 3x ... 2



**HDO 71 ... 95**

- 3x ... 1

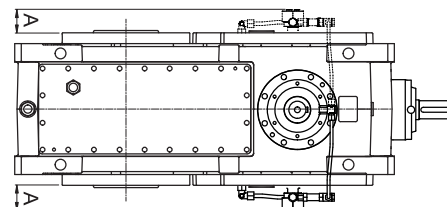
HDO ... GJ ... B3  
HDO ... VP ... B3

**HDO 100 ... 140**

- 2x ... 2
- 3x ... 2
- 4x ... 2

**HDO 150 - 160**

- 2x ... 2
- 3x ... 2
- 4x ... 1



**HDO 100 ... 140**

- 2x ... 1
- 3x ... 1
- 4x ... 1

**HDO 150 - 160**

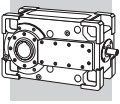
- 2x ... 1
- 3x ... 1
- 4x ... 2

|             | A (min)<br>[mm] |
|-------------|-----------------|
| HDO 71 3_OP | 78              |
| HDO 71 4_OP | 85              |
| HDO 81 3_OP | 78              |
| HDO 81 4_OP | 78              |
| HDO 91 3_OP | 78              |
| HDO 91 4_OP | 75              |
| HDO 95 3_OP | 53              |
| HDO 95 4_OP | 50              |

|              | A (min)<br>[mm] |
|--------------|-----------------|
| HDO 95 3_OP  | 53              |
| HDO 95 4_OP  | 50              |
| HDO 100 2_OP | 100             |
| HDO 100 3_OP | 95              |
| HDO 100 4_OP | 95              |
| HDO 110 2_OP | 130             |
| HDO 110 3_OP | 95              |
| HDO 110 4_OP | 95              |

|              | A (min)<br>[mm] |
|--------------|-----------------|
| HDO 120 2_OP | 125             |
| HDO 120 3_OP | 105             |
| HDO 120 4_OP | 100             |
| HDO 125 2_OP | 125             |
| HDO 125 3_OP | 105             |
| HDO 125 4_OP | 100             |
| HDO 130 2_OP | 120             |
| HDO 130 3_OP | 110             |
| HDO 130 4_OP | 110             |

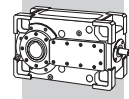
|              | A (min)<br>[mm] |
|--------------|-----------------|
| HDO 140 2_OP | 125             |
| HDO 140 3_OP | 110             |
| HDO 140 4_OP | 110             |
| HDO 150 2_OP | 125             |
| HDO 150 3_OP | 110             |
| HDO 150 4_OP | 110             |
| HDO 160 2_OP | 125             |
| HDO 160 3_OP | 110             |
| HDO 160 4_OP | 110             |



The following chart specifies the availability of the pump on the basis of mounting position, shaft arrangement and input configuration.

| Mounting position | Shaft arrangement           | Input configuration |
|-------------------|-----------------------------|---------------------|
| <b>B3</b>         | LJ - RJ - DJ - LD - RD - DD | VP - GJ *           |
| <b>B6</b>         | L - R - D - LD - RD - DD    | VP - G              |

(\*) HDO 71 ... HDO 95 excluded

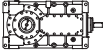


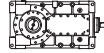

### 26.7.2.2 PUMP FOR MOUNTING POSITION V5

In continuous duty applications and with V5 mounting positions version 1 (version 2 for 4-stage HDO 150 ... HDO 180), an optional forced lubrication circuit is available with a mechanically driven pump keyed on to the intermediate shaft.

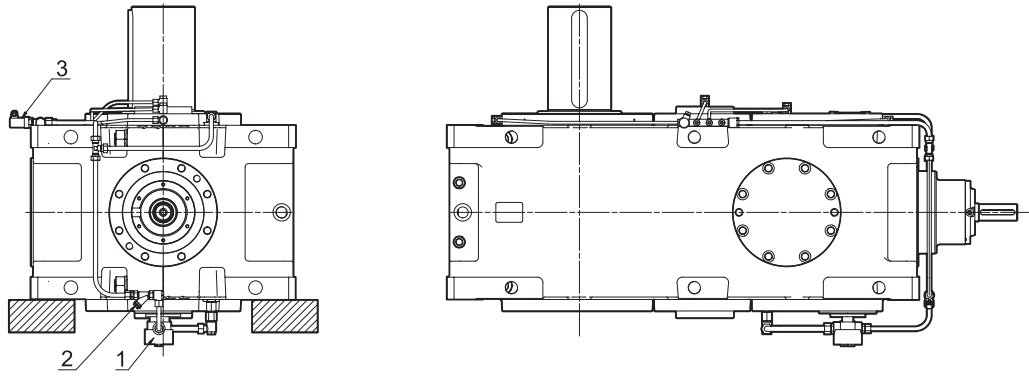
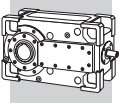
This circuit only guarantees lubrication of the top bearings that are not immersed in oil. If this device is required in conjunction with the Drywell device, consult the Bonfiglioli Technical Service.

When ordering, specify the OP1 or OP2 option in your order after first checking the chart to make sure that the device is fully compatible with drive speed  $n_1$  and the reduction ratio. See the following diagram.

|  | i                         | $n_1$                  |                        |                        |
|---|---------------------------|------------------------|------------------------|------------------------|
|   |                           | 1000 min <sup>-1</sup> | 1200 min <sup>-1</sup> | 1500 min <sup>-1</sup> |
| HDO 100 2   | $5.8 \leq i \leq 7.0$     | OP1                    | OP1                    | OP1                    |
|   | i = 8.0; 8.7              | ⊖                      | OP1                    | OP1                    |
|   | i = 10.0; 10.9            | ⊖                      | ⊖                      | OP1                    |
|   | i = 12.4; 13.5            | ⊖                      | ⊖                      | ⊖                      |
| HDO 100 3   | $14.0 \leq i \leq 17.3$   | OP2                    | OP1                    | OP1                    |
|   | $20.2 \leq i \leq 40.0$   | ⊖                      | OP2                    | OP1                    |
|   | $43.9 \leq i \leq 67.5$   | ⊖                      | ⊖                      | ⊖                      |
| HDO 100 4   | $70.8 \leq i \leq 139.8$  | ⊖                      | OP2                    | OP1                    |
|   | $160.0 \leq i \leq 344.2$ | ⊖                      | ⊖                      | ⊖                      |
| HDO 110 2   | $6.4 \leq i \leq 8.1$     | OP2                    | OP2                    | OP1                    |
|   | i = 8.7; 10.0             | ⊖                      | OP2                    | OP2                    |
|   | i = 10.9; 12.5            | ⊖                      | ⊖                      | OP2                    |
|   | i = 13.5; 15.5            | ⊖                      | ⊖                      | ⊖                      |
| HDO 110 3   | i = 18.9; 20.9            | OP2                    | OP1                    | OP1                    |
|   | $22.0 \leq i \leq 43.6$   | ⊖                      | OP2                    | OP1                    |
|   | $48.0 \leq i \leq 77.5$   | ⊖                      | ⊖                      | ⊖                      |
| HDO 110 4   | $77.4 \leq i \leq 121.7$  | ⊖                      | OP2                    | OP2                    |
|   | $137.1 \leq i \leq 395.0$ | ⊖                      | ⊖                      | ⊖                      |
| HDO 120 2   | $6.6 \leq i \leq 8.1$     | OP2                    | OP2                    | OP1                    |
|   | i = 8.9; 10.0             | ⊖                      | OP2                    | OP2                    |
|   | i = 11.1; 12.5            | ⊖                      | ⊖                      | OP2                    |
|   | i = 13.7; 15.5            | ⊖                      | ⊖                      | ⊖                      |
| HDO 120 3   | $17.3 \leq i \leq 28.3$   | OP2                    | OP2                    | OP1                    |
|   | $32.0 \leq i \leq 44.9$   | ⊖                      | OP2                    | OP2                    |
|   | $49.5 \leq i \leq 78.6$   | ⊖                      | ⊖                      | ⊖                      |
| HDO 120 4   | $87.0 \leq i \leq 162.2$  | ⊖                      | OP2                    | OP2                    |
|   | $179.0 \leq i \leq 400.6$ | ⊖                      | ⊖                      | ⊖                      |
| HDO 125 2   | $7.4 \leq i \leq 8.8$     | OP2                    | OP2                    | OP1                    |
|   | i = 9.9                   | ⊖                      | OP2                    | OP2                    |
|   | i = 11.5; 12.3            | ⊖                      | ⊖                      | OP2                    |
|   | $14.2 \leq i \leq 16.9$   | ⊖                      | ⊖                      | ⊖                      |
| HDO 125 3   | $19.2 \leq i \leq 35.8$   | OP2                    | OP2                    | OP1                    |
|   | $38.8 \leq i \leq 55.4$   | ⊖                      | OP2                    | OP2                    |
|   | $60.1 \leq i \leq 85.9$   | ⊖                      | ⊖                      | ⊖                      |
| HDO 125 4   | $97.0 \leq i \leq 178.0$  | ⊖                      | OP2                    | OP2                    |
|   | $200.3 \leq i \leq 438.0$ | ⊖                      | ⊖                      | ⊖                      |
| HDO 130 2   | $5.7 \leq i \leq 7.1$     | OP2                    | OP1                    | OP1                    |
|   | i = 7.7; 8.8              | ⊖                      | OP2                    | OP1                    |
|   | i = 9.6; 11.0             | ⊖                      | ⊖                      | OP2                    |
|   | i = 12.0; 13.6            | ⊖                      | ⊖                      | ⊖                      |
| HDO 130 3   | $15.2 \leq i \leq 19.9$   | OP2                    | OP2                    | OP1                    |
|   | $22.6 \leq i \leq 34.9$   | ⊖                      | OP2                    | OP2                    |
|   | $38.3 \leq i \leq 67.1$   | ⊖                      | ⊖                      | ⊖                      |
| HDO 130 4   | $71.5 \leq i \leq 190.3$  | ⊖                      | OP2                    | OP1                    |
|   | $219.1 \leq i \leq 335.6$ | ⊖                      | ⊖                      | ⊖                      |

|  | i  | $n_1$                  |                        |                        |
|---|--|------------------------|------------------------|------------------------|
|   |  | 1000 min <sup>-1</sup> | 1200 min <sup>-1</sup> | 1500 min <sup>-1</sup> |
| HDO 140 2   | $6.6 \leq i \leq 8.2$  | OP2                    | OP2                    | OP1                    |
|   | i = 9.0; 10.1  | ⊖                      | OP2                    | OP2                    |
|   | i = 11.3; 12.6   | ⊖                      | ⊖                      | OP2                    |
|   | i = 14.0; 15.7   | ⊖                      | ⊖                      | ⊖                      |
| HDO 140 3   | $17.7 \leq i \leq 23.3$  | OP2                    | OP2                    | OP1                    |
|   | $26.0 \leq i \leq 44.4$  | ⊖                      | OP2                    | OP2                    |
|   | $50.4 \leq i \leq 77.3$  | ⊖                      | ⊖                      | ⊖                      |
| HDO 140 4   | $82.3 \leq i \leq 180.0$   | ⊖                      | OP2                    | OP1                    |
|   | $198.3 \leq i \leq 386.6$  | ⊖                      | ⊖                      | ⊖                      |
| HDO 150 2   | $5.5 \leq i \leq 7.0$  | OP2                    | OP2                    | OP1                    |
|   | i = 8.1; 8.9   | ⊖                      | OP2                    | OP2                    |
|   | $10.0 \leq i \leq 10.9$  | ⊖                      | ⊖                      | OP2                    |
|   | $12.6 \leq i \leq 13.7$  | ⊖                      | ⊖                      | ⊖                      |
| HDO 150 3   | $15.6 \leq i \leq 25.4$  | OP2                    | OP2                    | OP1                    |
|   | $28.2 \leq i \leq 36.0$  | ⊖                      | OP2                    | OP2                    |
|   | $40.2 \leq i \leq 60.8$  | ⊖                      | ⊖                      | ⊖                      |
| HDO 150 4   | $66.9 \leq i \leq 92.9$  | OP2                    | OP2                    | OP1                    |
|   | $101.8 \leq i \leq 141.5$  | ⊖                      | OP2                    | OP2                    |
| HDO 160 2   | $157.9 \leq i \leq 238.8$  | ⊖                      | ⊖                      | ⊖                      |
|   | i = 7.3; 7.9   | OP2                    | OP2                    | OP1                    |
|   | $8.9 \leq i \leq 11.3$   | ⊖                      | ⊖                      | OP2                    |
|   | $12.2 \leq i \leq 15.4$  | ⊖                      | ⊖                      | ⊖                      |
| HDO 160 3   | $17.7 \leq i \leq 31.3$  | OP2                    | OP2                    | OP1                    |
|   | $34.9 \leq i \leq 44.3$  | ⊖                      | OP2                    | OP2                    |
|   | $49.4 \leq i \leq 68.6$  | ⊖                      | ⊖                      | ⊖                      |
| HDO 160 4   | $75.9 \leq i \leq 96.3$  | OP2                    | OP2                    | OP1                    |
|   | $115.2 \leq i \leq 174.0$  | ⊖                      | OP2                    | OP2                    |
|   | $194.1 \leq i \leq 269.7$  | ⊖                      | ⊖                      | ⊖                      |
| HDO 170   |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |                        |                        |                        |
| HDO 180   |  |                        |                        |                        |

This option is not available with other configurations that use the same shaft end.

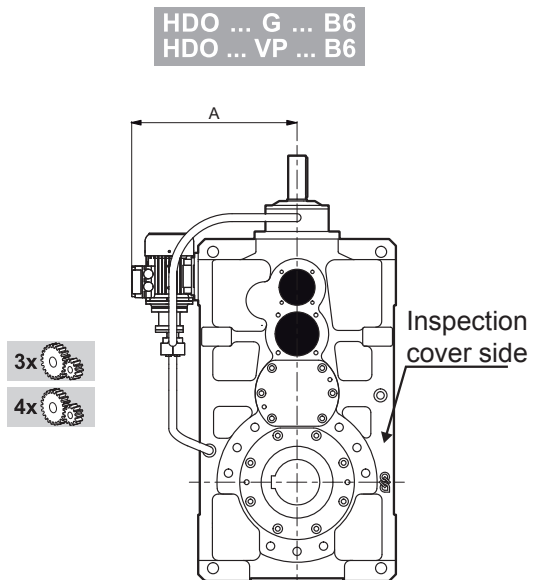


- 1 - Pump
- 2 - Filter
- 3 - Minimum pressure switch

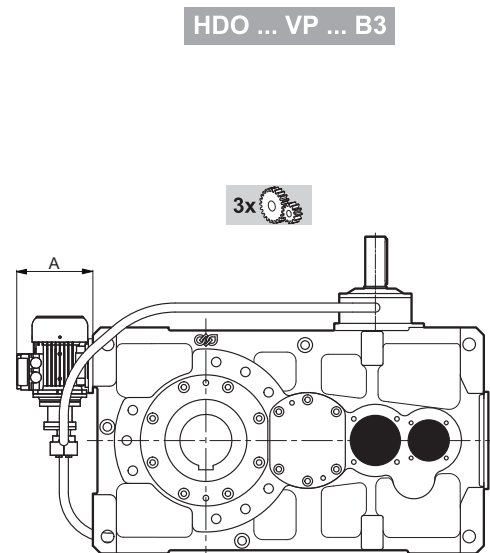
Contact the Bonfiglioli Technical Service for overall dimensions.

### 26.7.2.3 ELECTRIC PUMP FOR MOUNTING POSITIONS B3 and B6

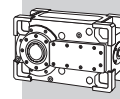
In intermittent duty applications, if speeds are incompatible with the use of the OP pump option, and when required for B3 and B6 mounting positions (see section [26.7.2](#)), the MOP optional forced lubrication circuit is available with an independently powered electric pump. This system ensures a constant flow of oil to the top bearings.



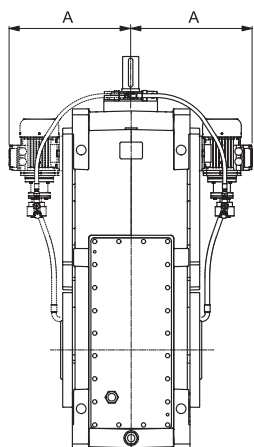
|        | A (min) [mm] |
|--------|--------------|
| HDO 71 | 345          |
| HDO 81 | 370          |
| HDO 91 | 395          |
| HDO 95 | 420          |



|        | A (min) [mm] |
|--------|--------------|
| HDO 71 | 170          |
| HDO 81 | 170          |
| HDO 91 | 170          |
| HDO 95 | 170          |



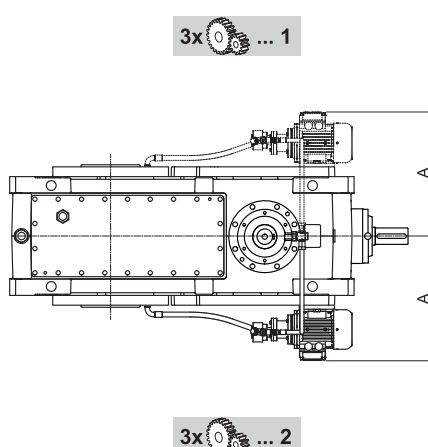
HDO ... G ... B6  
HDO ... VP ... B6



- 2x ... 2
- 3x ... 1
- 4x ... 2

- 2x ... 1
- 3x ... 2
- 4x ... 1

HDO ... GJ ... B3  
HDO ... VP ... B3



- 3x ... 1

- 3x ... 2

|         | A (min) [mm]                    |
|---------|---------------------------------|
| HDO 100 | 410                             |
| HDO 110 | 410                             |
| HDO 120 | 430                             |
| HDO 125 | 430                             |
| HDO 130 | 480                             |
| HDO 140 | 480                             |
| HDO 150 | ☎ BONFIGLIOLI TECHNICAL SERVICE |
| HDO 160 |                                 |
| HDO 170 | ●                               |
| HDO 180 |                                 |

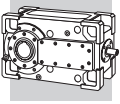
The electric pump arrangements shown above are purely indicative. Pump positions may vary depending on the presence of other options

The chart specifies electric pump availability on the basis of mounting position and shaft arrangement.

| Mounting position | Shaft arrangement           | Input configuration |
|-------------------|-----------------------------|---------------------|
| <b>B3</b>         | LJ - RJ - DJ - LD - RD - DD | VP - GJ *           |
| <b>B6</b>         | L - R - D - LD - RD - DD    | VP - G              |

(\* ) HDO 71 ... HDO 95 excluded

**HDO**

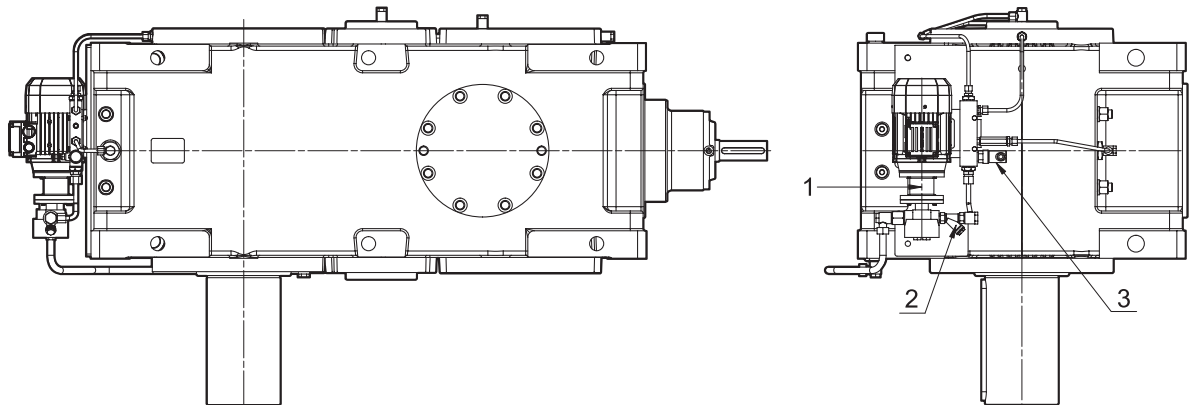


#### 26.7.2.4 ELECTRIC PUMP FOR MOUNTING POSITION V5

In intermittent duty applications or when speeds are incompatible with the use of the OP pump option, and when required for mounting position V5, the MOP optional forced lubrication circuit is available with an independently powered electric pump.

If this device is required in conjunction with the Drywell device, consult the Bonfiglioli Technical Service. This system ensures a constant flow of oil to the top bearings.

HDO



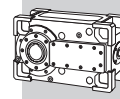
● HDO 71 ... HDO 95

- 1 - Motorpump
- 2 - Filter
- 3 - Minimum pressure switch

The electric pump arrangements shown above are purely indicative. Pump positions may vary depending on the presence of other options at the same time.

Contact the Bonfiglioli Technical Service for overall dimensions.





### 26.7.3 BACKSTOP DEVICE

The backstop device ensures that only one direction of rotation is allowed, and prevents the gearbox to be backdriven by the load connected to the output shaft.

In addition to verifying the shock loads shown in section 11.1, also make sure that the torque transmitted to the backstop  $M_1 = M_2 / (i \times \eta)$  is less than the admissible torque  $M_{1max}$  listed in the chart below. Along with the specification of the backstop device, option **A**, the direction of free rotation for the output shaft (**CW** or **CCW**) must also be specified in the order.

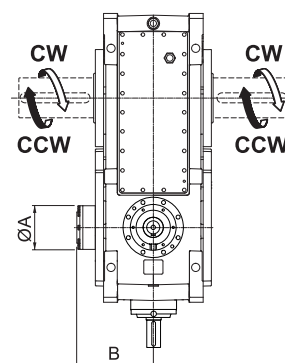
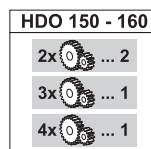
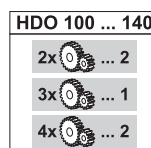
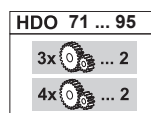
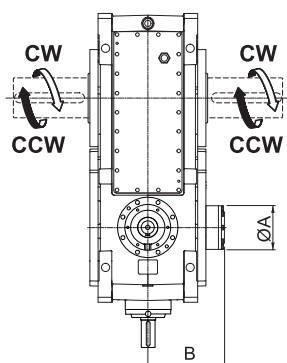
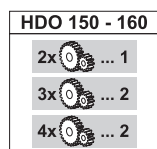
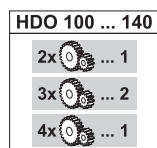
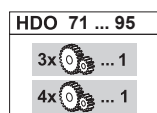
If special operating conditions require it, the user can reverse the direction of rotation of the backstop device by opening the backstop compartment and reversing the direction of the freewheel. If you need to perform this operation, contact Bonfiglioli's Technical Service for the necessary instructions.

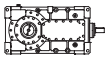
The type of backstop device used, based on centrifugally released shoes, does not require any regular maintenance.

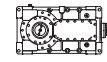
This option is not available with other configurations that use the same shaft end.



**Under continuous operating conditions, it is advisable to maintain a neutral rotation speed  $n_{1min}$  greater than that specified in the chart in order to ensure the effective centrifugal release of all the shoes and avoid unnecessary wear. For further details, contact the Bonfiglioli Technical Service.**

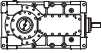


|  | i                                   | A   | B   | $M_{1max}$<br>[Nm] | $n_{1min}$<br>[min <sup>-1</sup> ] |
|---|-------------------------------------|-----|-----|--------------------|------------------------------------|
| <b>HDO 71 3_A</b>   | $21.8 \leq i \leq 48.7$             | 110 | 204 | 260                | 1500                               |
|   | $54.2 \leq i \leq 71.9$             | 110 | 204 | 183                | (*)                                |
| <b>HDO 71 4_A</b>   | $77.0 \leq i \leq 197.0$ $i=237.7$  | 91  | 199 | 108                | 1500                               |
|   | $i=228.2$ $308.9 \leq i \leq 475.4$ | 91  | 199 | 54                 | (*)                                |
| <b>HDO 81 3_A</b>   | $25.9 \leq i \leq 39.9$ $i=48.1$    | 110 | 231 | 273                | 1500                               |
|   | $i=44.9$ $55.1 \leq i \leq 71.9$    | 110 | 231 | 183                | (*)                                |
| <b>HDO 81 4_A</b>   | $78.3 \leq i \leq 181.4$ $i=227.8$  | 95  | 231 | 159                | 1500                               |
|   | $i=196.5$ $254.8 \leq i \leq 473.3$ | 95  | 231 | 80                 | (*)                                |

|  | i                         | A   | B   | $M_{1max}$<br>[Nm] | $n_{1min}$<br>[min <sup>-1</sup> ] |
|---|---------------------------|-----|-----|--------------------|------------------------------------|
| <b>HDO 91 3_A</b>   | $18,6 \leq i \leq 30,6$   | 130 | 259 | 612                | 997                                |
|   | $36,9 \leq i \leq 66,1$   | 130 | 259 | 343                | 1500                               |
| <b>HDO 91 4_A</b>   | $82,0 \leq i \leq 225,4$  | 110 | 250 | 274                | 1500                               |
|   | $256,3 \leq i \leq 489,3$ | 110 | 250 | 137                | (*)                                |
| <b>HDO 95 3_A</b>   | $21,2 \leq i \leq 40,5$   | 130 | 259 | 612                | 997                                |
|   | $44,0 \leq i \leq 72,3$   | 130 | 259 | 343                | 1500                               |
| <b>HDO 95 4_A</b>   | $81,6 \leq i \leq 231,1$  | 110 | 250 | 274                | 1500                               |
|   | $256,6 \leq i \leq 489,7$ | 110 | 250 | 137                | (*)                                |

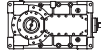

(\*) Contact the Bonfiglioli Technical Service.

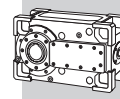


|  | i                 | A   | B   | M <sub>1max</sub><br>[Nm] | n <sub>1min</sub><br>[min <sup>-1</sup> ] |
|---|-------------------|-----|-----|---------------------------|---|
| <b>HDO 100 2_A</b>  | 5.8 ≤ i ≤ 7.0     | 210 | 335 | 2840                      | 720                                       |
|   | i = 8.0; 8.7      |     |     | 2290                      | 900                                       |
|   | i = 10.0; 10.9    |     |     | 1830                      | 1120                                      |
|   | i = 12.4; 13.5    |     |     | 1480                      | 1390                                      |
| <b>HDO 100 3_A</b>  | 14.0 ≤ i ≤ 17.3   | 175 | 285 | 1550                      | 750                                       |
|   | 20.2 ≤ i ≤ 40.0   |     |     | 1190                      | 980                                       |
|   | 43.9 ≤ i ≤ 67.5   |     |     | 770                       | 1400                                      |
| <b>HDO 100 4_A</b>  | 70.8 ≤ i ≤ 139.8  | 125 | 278 | 400                       | 1400                                      |
|   | 160.0 ≤ i ≤ 344.2 |     |     | 250                       | (*)                                       |
| <b>HDO 110 2_A</b>  | 6.4 ≤ i ≤ 8.1     | 210 | 335 | 2840                      | 720                                       |
|   | 8.7 ≤ i ≤ 10.0    |     |     | 2290                      | 900                                       |
|   | 10.9 ≤ i ≤ 12.5   |     |     | 1830                      | 1120                                      |
|   | 13.5 ≤ i ≤ 15.5   |     |     | 1480                      | 1390                                      |
| <b>HDO 110 3_A</b>  | 18.9 ≤ i ≤ 20.9   | 175 | 285 | 1550                      | 750                                       |
|   | 22.0 ≤ i ≤ 43.6   |     |     | 1190                      | 980                                       |
|   | 48.0 ≤ i ≤ 77.5   |     |     | 770                       | 1400                                      |
| <b>HDO 110 4_A</b>  | 77.4 ≤ i ≤ 121.7  | 125 | 278 | 400                       | 1400                                      |
|   | 137.1 ≤ i ≤ 395.0 |     |     | 250                       | (*)                                       |
| <b>HDO 120 2_A</b>  | 6.6 ≤ i ≤ 8.1     | 230 | 336 | 3530                      | 670                                       |
|   | 8.9 ≤ i ≤ 10.0    |     |     | 2850                      | 840                                       |
|   | 11.1 ≤ i ≤ 12.5   |     |     | 2280                      | 1050                                      |
|   | 13.7 ≤ i ≤ 15.5   |     |     | 1840                      | 1300                                      |
| <b>HDO 120 3_A</b>  | 17.3 ≤ i ≤ 24.6   | 175 | 305 | 1550                      | 750                                       |
|   | 28.3 ≤ i ≤ 44.9   |     |     | 1190                      | 980                                       |
|   | 49.5 ≤ i ≤ 78.6   |     |     | 770                       | 1400                                      |
| <b>HDO 120 4_A</b>  | 87.0 ≤ i ≤ 162.2  | 125 | 279 | 400                       | 1400                                      |
|   | 179.7 ≤ i ≤ 400.6 |     |     | 250                       | (*)                                       |
| <b>HDO 125 2_A</b>  | 7.4 ≤ i ≤ 8.8     | 230 | 336 | 3530                      | 670                                       |
|   | i = 9.9           |     |     | 2850                      | 840                                       |
|   | 11.5 ≤ i ≤ 12.3   |     |     | 2280                      | 1050                                      |
|   | 14.2 ≤ i ≤ 16.9   |     |     | 1840                      | 1300                                      |
| <b>HDO 125 3_A</b>  | 19.2 ≤ i ≤ 35.8   | 175 | 305 | 1550                      | 750                                       |
|   | 38.8 ≤ i ≤ 55.4   |     |     | 1190                      | 980                                       |
|   | 60.1 ≤ i ≤ 85.9   |     |     | 770                       | 1400                                      |
| <b>HDO 125 4_A</b>  | 97.0 ≤ i ≤ 178.0  | 125 | 279 | 400                       | 1400                                      |
|   | 200.3 ≤ i ≤ 438.0 |     |     | 250                       | (*)                                       |

(\*) Contact the Bonfiglioli Technical Service.

(\*\*) Option not available in configuration  
...S-L-1... e ...S-R-2...

|  | i  | A   | B   | M <sub>1max</sub><br>[Nm] | n <sub>1min</sub><br>[min <sup>-1</sup> ] |
|---|--|-----|-----|---------------------------|---|
| <b>HDO 130 2_A</b>  | 5.7 ≤ i ≤ 7.1  | 290 | 437 | 6630                      | 730                                       |
|   | i = 7.7; 8.8   |     |     | 5350                      | 910                                       |
|   | i = 9.6; 11.0  |     |     | 4280                      | 1130                                      |
|   | i = 12.0; 13.6   |     |     | 3450                      | 1400                                      |
| <b>HDO 130 3_A</b>  | 15.2 ≤ i ≤ 19.9  | 210 | 402 | 2840                      | 720                                       |
|   | 22.6 ≤ i ≤ 34.9  |     |     | 2290                      | 900                                       |
|   | 38.3 ≤ i ≤ 67.1  |     |     | 1480                      | 1390                                      |
| <b>HDO 130 4_A</b>  | 71.5 ≤ i ≤ 190.3   | 175 | 366 | 1190                      | 980                                       |
|   | 219.1 ≤ i ≤ 335.6  |     |     | 770                       | 1400                                      |
| <b>HDO 140 2_A<br/>(**)</b>   | 6.6 ≤ i ≤ 8.2  | 290 | 437 | 6630                      | 730                                       |
|   | i = 9.0; 10.1  |     |     | 5350                      | 910                                       |
|   | i = 11.3; 12.6   |     |     | 4280                      | 1130                                      |
|   | i = 14.0; 15.7   |     |     | 3450                      | 1400                                      |
| <b>HDO 140 3_A</b>  | 17.7 ≤ i ≤ 23.3  | 210 | 402 | 2840                      | 720                                       |
|   | 26.0 ≤ i ≤ 44.4  |     |     | 2290                      | 900                                       |
|   | 50.4 ≤ i ≤ 77.3  |     |     | 1480                      | 1390                                      |
| <b>HDO 140 4_A</b>  | 82.3 ≤ i ≤ 180.0   | 175 | 366 | 1190                      | 980                                       |
|   | 198.3 ≤ i ≤ 386.6  |     |     | 770                       | 1400                                      |
| <b>HDO 150 2_A</b>  | 5.5 ≤ i ≤ 7.0  | 322 | 447 | 10110                     | 650                                       |
|   | i = 8.1; 8.9   |     |     | 8030                      | 830                                       |
|   | i = 10.0; 10.9   |     |     | 6520                      | 1020                                      |
|   | i = 12.6; 13.7   |     |     | 5180                      | 1280                                      |
| <b>HDO 150 3_A</b>  | 15.6 ≤ i ≤ 25.4  | 230 | 440 | 4040                      | 590                                       |
|   | 28.2 ≤ i ≤ 36.0  |     |     | 2850                      | 840                                       |
|   | 40.2 ≤ i ≤ 60.8  |     |     | 1840                      | 1300                                      |
| <b>HDO 150 4_A</b>  | 66.9 ≤ i ≤ 92.9  | —   | 333 | 15550                     | 750                                       |
|   | 101.8 ≤ i ≤ 141.5  |     |     | 1190                      | 980                                       |
|   | 157.9 ≤ i ≤ 238.8  |     |     | 770                       | 1400                                      |
| <b>HDO 160 2_A</b>  | i = 7.3; 7.9   | 322 | 447 | 10100                     | 650                                       |
|   | 8.9 ≤ i ≤ 11.3   |     |     | 7070                      | 940                                       |
| <b>HDO 160 3_A</b>  | 12.2 ≤ i ≤ 15.4  | 230 | 440 | 5210                      | 1270                                      |
|   | 17.7 ≤ i ≤ 31.3  |     |     | 4040                      | 590                                       |
|   | 34.9 ≤ i ≤ 44.3  |     |     | 2850                      | 840                                       |
| <b>HDO 160 4_A</b>  | 49.4 ≤ i ≤ 68.6  | —   | 333 | 1840                      | 1300                                      |
|   | 75.9 ≤ i ≤ 96.3  |     |     | 15550                     | 750                                       |
|   | 115.2 ≤ i ≤ 174.0  |     |     | 1190                      | 980                                       |
|   | 194.1 ≤ i ≤ 269.7  |     |     | 770                       | 1400                                      |
| <b>HDO 170</b>  |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |     |     |                           |   |
| <b>HDO 180</b>  |  |     |     |                           |   |



#### 26.7.4 REINFORCED BEARINGS

Optional heavy-duty bearings are also available, with increased overhung load capacity. The HDB option can only be applied to HDO 71, 81, 91 units with the LP shaft arrangement (solid shaft).

#### 26.7.5 SEALS AND GASKETS

On request, gearboxes can be equipped with different oil sealing systems. These are:

**TK** – Taconite seals are recommended for environments characterised by the presence of abrasive dust or powders. Taconite seals incorporate a combination of sealing rings, labyrinths and a grease chamber. Greasing must be ensured as part of the scheduled maintenance programme.

**VS** – Fluoro elastomer compound seal rings.

**DS** – Dual set of seal rings at each shaft end.

**DVS** – Dual set of Fluoro elastomer compound seal rings at each shaft end.

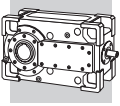
#### 26.7.6 SENSORS

**Bimetal thermostat** – If the **TG** option is specified, a bimetallic thermostat detects when the oil temperature exceeds  $90^{\circ}\text{C} \pm 5^{\circ}\text{C}$ .

The device is supplied with the gear unit, but installation and wiring are the responsibility of the installer.

**Oil level indicator** – If the **OLG** option is specified in the order, the gearbox is supplied with a device permitting the remote checking of the oil level. The device best operates when the gearbox is idle and should be bypassed when the gearbox is operating. Wiring is the responsibility of the installer.

The device may not be available in combination with other accessories and/or particular product configurations. Please contact Bonfiglioli Technical Service for advise.



### 26.7.7 DRYWELL

The “drywell” - option **DW** - is a device providing output shaft sealing for units with output shaft laying vertically in the V5 position.

The “drywell” - option is not available for HDO 71 to 95 gearboxes.

When specified, for HDO 100 to 180 gearboxes, it necessarily requires the installation of a forced lubrication system, selected from those available for the gearbox, as illustrated in the relevant section of this catalogue.

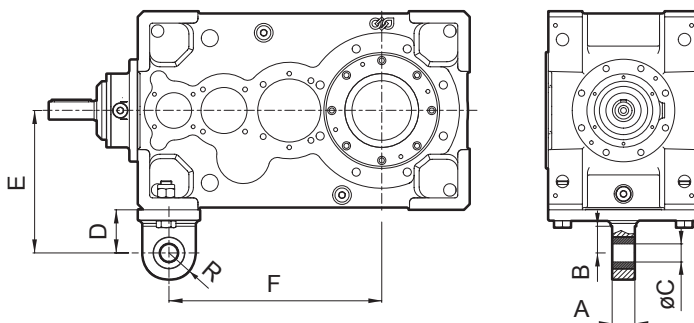
At scheduled intervals, check and refill the grease in the vane underneath the output shaft's bottom bearing.

Availability of the Drywell may be subject to limitations, depending on the contemporary specification of other devices. Please consult with Bonfiglioli Technical Service.

HDO

### 26.7.8 FIXING ELEMENTS

For shaft-mounted installations, **HDO 71 ... HDO 95** gearboxes can be fitted with an electro-welded steel torque arm, complete with anti-vibration bushing.



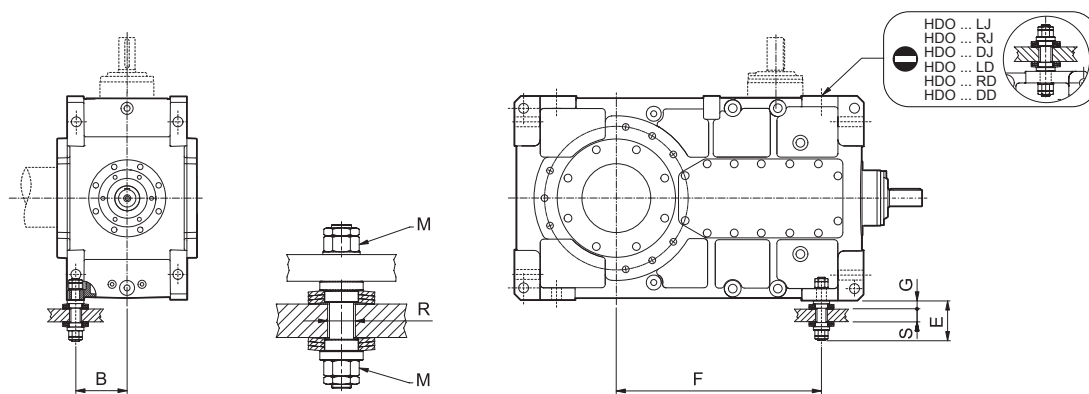
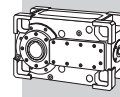
|           | A  | B  | C  | D   | E   | F   | R  |
|-----------|----|----|----|-----|-----|-----|----|
| HDO 71_TA | 40 | 47 | 32 | 76  | 251 | 375 | 47 |
| HDO 81_TA | 60 | 60 | 42 | 97  | 297 | 413 | 60 |
| HDO 91_TA | 60 | 68 | 42 | 113 | 338 | 525 | 68 |
| HDO 95_TA | 60 | 68 | 42 | 113 | 363 | 520 | 68 |

For shaft mounted HDO gearboxes, a specially shaped hardened steel bolt is available to secure the unit to the supporting structure.

Vibration damping cup springs are also supplied in the kit. The customer must adjust the preload of these springs during installation, respecting the value G given in the following chart.

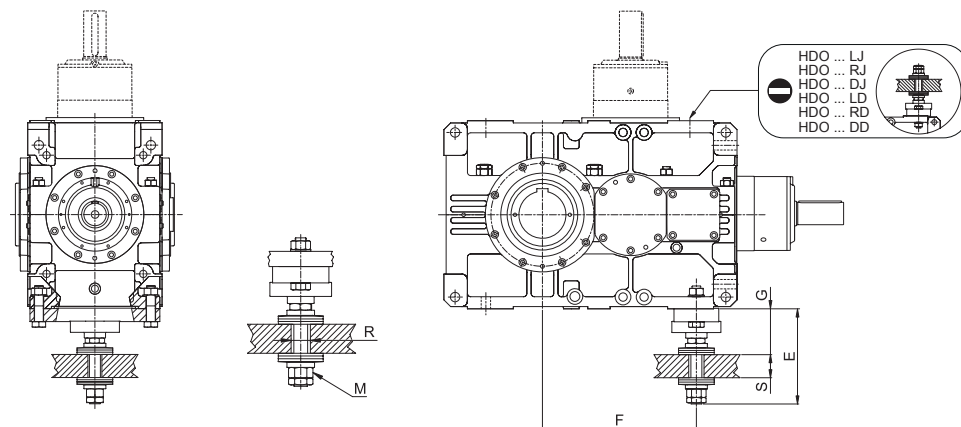
The reaction bolt must be fitted on the side of the gearbox next to the driven machine and in the farthest hole from output shaft centre (see dimension F in the following figure).

Fitting the bolt on same side as the inspection cover is not possible. In this case please contact Bonfiglioli Technical Service for advise.



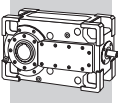
|              | F   | B   | E   | G           | M   | R  | S       | DIN2093 |
|--------------|-----|-----|-----|-------------|-----|----|---------|---------|
|              |     |     |     | Rated value |     |    |         |         |
| HDO 100 2_TA | 420 | 160 | 153 | 33.4        | M27 | 35 | 30 - 40 | A100    |
| HDO 100 3_TA | 540 |     |     |             |     |    |         |         |
| HDO 100 4_TA | 540 |     |     |             |     |    |         |         |
| HDO 110 2_TA | 435 | 160 | 153 | 33.4        | M27 | 35 | 30 - 40 | A100    |
| HDO 110 3_TA | 555 |     |     |             |     |    |         |         |
| HDO 110 4_TA | 555 |     |     |             |     |    |         |         |
| HDO 120 2_TA | 480 | 170 | 166 | 33.4        | M30 | 40 | 40 - 50 | A125    |
| HDO 120 3_TA | 630 |     |     |             |     |    |         |         |
| HDO 120 4_TA | 630 |     |     |             |     |    |         |         |
| HDO 125 2_TA | 530 | 170 | 166 | 33.4        | M30 | 40 | 40 - 50 | A125    |
| HDO 125 3_TA | 680 |     |     |             |     |    |         |         |
| HDO 125 4_TA | 680 |     |     |             |     |    |         |         |
| HDO 130 2_TA | 585 | 216 | 205 | 42.7        | M36 | 45 | 50 - 60 | A125    |
| HDO 130 3_TA | 780 |     |     |             |     |    |         |         |
| HDO 130 4_TA | 780 |     |     |             |     |    |         |         |
| HDO 140 2_TA | 625 | 216 | 205 | 42.7        | M36 | 45 | 50 - 60 | A125    |
| HDO 140 3_TA | 790 |     |     |             |     |    |         |         |
| HDO 140 4_TA | 790 |     |     |             |     |    |         |         |

**HDO**



|              | F     | E   | G           | M     | R  | S       | DIN2093 |
|--------------|-------|-----|-------------|-------|----|---------|---------|
|              |       |     | Rated value |       |    |         |         |
| HDO 150 2_TA | 687.5 | 405 | 204.3       | M48x2 | 52 | 70 - 80 | A160    |
| HDO 150 3_TA | 877.5 |     |             |       |    |         |         |
| HDO 150 4_TA | 877.5 |     |             |       |    |         |         |
| HDO 160 2_TA | 727.5 | 405 | 204.3       | M48x2 | 52 | 70 - 80 | A160    |
| HDO 160 3_TA | 927.5 |     |             |       |    |         |         |
| HDO 160 4_TA | 927.5 |     |             |       |    |         |         |
| HDO 170      |       |     |             |       |    |         |         |
| HDO 180      |       |     |             |       |    |         |         |

BONFIGLIOLI TECHNICAL SERVICE



## 26.7.9 SURFACE PROTECTION

### HDO 71 ... 95

When no specific protection class is requested, the painted (ferrous) surfaces of gearboxes are protected to at least corrosivity class C2 (UNI EN ISO 12944-2). For improved resistance to atmospheric corrosion, gearboxes can be delivered with C3 and C4 surface protection, obtained by painting the complete gearbox.

| <b>SURFACE PROTECTION</b> | Typical environments  | Maximum surface temperature | Corrosivity class according to UNI EN ISO 12944-2 |
|---------------------------|---|-----------------------------|---|
| <b>C3</b>                 | Urban and industrial environments with up to 100% relative humidity (medium air pollution)              | 120°C                       | C3  |
| <b>C4</b>                 | Industrial areas, coastal areas, chemical plant, with up to 100% relative humidity (high air pollution) | 120°C                       | C4  |

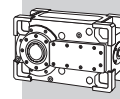
Gearboxes with optional protection to class C3 or C4 are available in a choice of colours. If no specific colour is requested (see the "PAINTING" option) gearboxes are finished in RAL 7042. Gearboxes can also be supplied with surface protection for corrosivity class C5 according to UNI EN ISO 12944-2. Contact our Technical Service for further details.

### HDO 100 ... 180

When no specific protection class is requested, the painted surfaces of gearboxes are protected to at least corrosivity class C3 (UNI EN ISO 12944-2). For improved resistance to atmospheric corrosion, gearboxes can be delivered with C4 surface protection, obtained by painting the complete gearbox.

| <b>SURFACE PROTECTION</b> | Typical environments  | Maximum surface temperature | Corrosivity class according to UNI EN ISO 12944-2 |
|---------------------------|---|-----------------------------|---|
| <b>C4</b>                 | Industrial areas, coastal areas, chemical plant, with up to 100% relative humidity (high air pollution) | 120°C                       | C4  |

Gearboxes with optional protection to class C4 are available in a choice of colours. If no specific colour is requested (see the "PAINTING" option) gearboxes are finished in RAL 7042. Gearboxes can also be supplied with surface protection for corrosivity class C5 according to UNI EN ISO 12944-2. Contact our Technical Service for further details.



## 26.7.10 PAINTING

Gearboxes with optional protection to class C3 or C4 are available in the colours listed in the following table.

| PAINTING        | Colour          | RAL number |
|-----------------|-----------------|------------|
| <b>RAL7042*</b> | Traffic Grey A  | 7042       |
| <b>RAL5010</b>  | Gentian Blue    | 5010       |
| <b>RAL9005</b>  | Jet Black       | 9005       |
| <b>RAL9006</b>  | White Aluminium | 9006       |
| <b>RAL9010</b>  | Pure White      | 9010       |

\* Gearboxes are supplied in this standard colour if no other colour is specified.

NOTE - "PAINTING" options can only be specified in conjunction with "SURFACE PROTECTION" options.

## 26.7.11 CERTIFICATES

### AC - Certificate of compliance

The document certifies the compliance of the product with the purchase order and the construction in conformity with the applicable procedures of the Bonfiglioli Quality System.

### CC - Inspection certificate

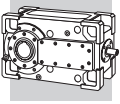
The document entails checking on order compliance, the visual inspection of external conditions and of mating dimensions. Checking on main functional parameters in unloaded conditions is also performed along with oil seal proofing, both in static and in running conditions. Units inspected are sampled within the shipping batch and marked individually.

### CT - Type certificate

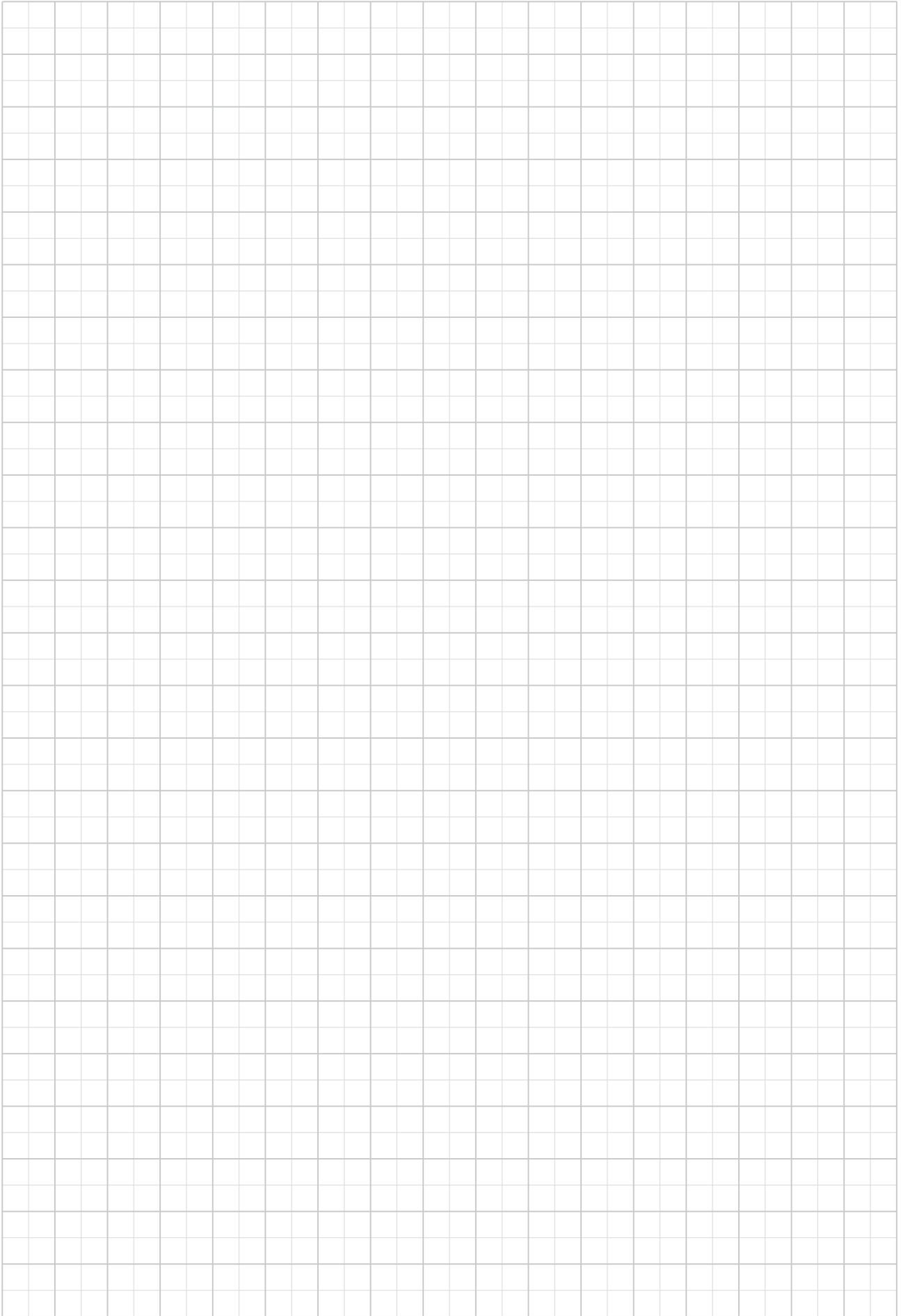
Further to the activities relevant to the Inspection certificate the following checks are also conducted:

- noise
- surface temperature
- tightness of external hardware
- functionality of ancillary devices, if fitted

All checks are conducted with the gear unit running unloaded. Units inspected are sampled within the shipping batch and marked individually.



HDO





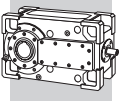


## 27 REFERENCE TORQUE

The torque values given in the table are influenced by the following elements: gear teeth, shafts and couplings. Performance may therefore vary with application conditions (see the “Thermal Capacity and Rating Charts”).

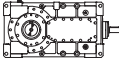
| HDO            |       |                         |        |        |        |         |         |         |         |         |         |         |         |         |         |
|----------------|-------|-------------------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                |       | Mn <sub>2ref</sub> [Nm] |        |        |        |         |         |         |         |         |         |         |         |         |         |
| i <sub>N</sub> |       | HDO 71                  | HDO 81 | HDO 91 | HDO 95 | HDO 100 | HDO 110 | HDO 120 | HDO 125 | HDO 130 | HDO 140 | HDO 150 | HDO 160 | HDO 170 | HDO 180 |
| 2x             | 5.6   | —                       | —      | —      | —      | 20910   | —       | —       | —       | 60700   | —       | 89750   | —       | —       | —       |
|                | 6.3   | —                       | —      | —      | —      | 22620   | 22220   | 31520   | —       | 66260   | 69850   | 105160  | —       | —       | —       |
|                | 7.1   | —                       | —      | —      | —      | 23610   | 23580   | 32970   | 35500   | 65220   | 77290   | 114290  | 118960  | —       | —       |
|                | 8.0   | —                       | —      | —      | —      | 22820   | 25740   | 35120   | 36890   | 65900   | 81460   | 113280  | 129300  | —       | —       |
|                | 9.0   | —                       | —      | —      | —      | 23430   | 23790   | 34440   | 39420   | 65400   | 80240   | 113290  | 121910  | —       | —       |
|                | 10.0  | —                       | —      | —      | —      | 22070   | 25960   | 36600   | 38520   | 62660   | 81680   | 104620  | 131940  | —       | —       |
|                | 11.2  | —                       | —      | —      | —      | 23110   | 23040   | 33350   | 35910   | 65440   | 73090   | 112410  | 137750  | —       | —       |
|                | 12.5  | —                       | —      | —      | —      | 21490   | 25180   | 35500   | 37300   | 59310   | 80740   | 105820  | 116840  | —       | —       |
|                | 14.0  | —                       | —      | —      | —      | 22530   | 22480   | 32500   | 34960   | 64980   | 69190   | 111480  | 126850  | —       | —       |
|                | 16.0  | —                       | —      | —      | —      | —       | 24600   | 34640   | 36350   | —       | 77730   | —       | 132600  | —       | —       |
| 18.0           | —     | —                       | —      | —      | —      | —       | —       | 38880   | —       | —       | —       | —       | —       | —       |         |
| 3x             | 14.0  | —                       | —      | —      | —      | 26470   | —       | —       | —       | —       | —       | —       | —       | —       | —       |
|                | 16.0  | —                       | —      | —      | —      | 24580   | —       | —       | —       | 58850   | —       | 99460   | —       | 179960  | —       |
|                | 18.0  | —                       | —      | 16760  | —      | 26310   | 30740   | 32720   | —       | 65750   | 68660   | 114150  | 111830  | 190190  | 199920  |
|                | 20.0  | —                       | —      | 17750  | 20040  | 24400   | 29890   | 35300   | 36480   | 63770   | 77140   | 110100  | 131830  | 182320  | 202450  |
|                | 22.4  | 6800                    | —      | 16690  | 21290  | 26130   | 29850   | 38530   | 39920   | 65610   | 82910   | 117200  | 141170  | 188900  | 202480  |
|                | 25.0  | 7260                    | 8120   | 18260  | 19320  | 24270   | 30740   | 40340   | 43390   | 63380   | 75510   | 113000  | 136270  | 190190  | 209900  |
|                | 28.0  | 7540                    | 9430   | 16590  | 20680  | 25990   | 29690   | 36250   | 45510   | 65810   | 82850   | 108950  | 146300  | 182320  | 202450  |
|                | 31.5  | 7230                    | 9240   | 18160  | 19200  | 24140   | 31130   | 38110   | 46950   | 63010   | 84810   | 116920  | 139750  | 188900  | 200290  |
|                | 35.5  | 7200                    | 10730  | 17520  | 20940  | 25860   | 29540   | 39350   | 47750   | 65470   | 82360   | 111930  | 132770  | 190190  | 209900  |
|                | 40.0  | 7490                    | 10470  | 16480  | 19110  | 24020   | 31240   | 40590   | 46730   | 62680   | 82170   | 107250  | 146300  | 190190  | 202450  |
|                | 45.0  | 7170                    | 9670   | 18030  | 19070  | 25750   | 29390   | 39130   | 46650   | 65130   | 81940   | 107700  | 138440  | 181730  | 198560  |
|                | 50.0  | 7160                    | 11590  | 16400  | 20680  | 23930   | 31120   | 37620   | 49240   | 62370   | 82500   | 114010  | 131890  | 188900  | 197890  |
|                | 56.0  | 6680                    | 10960  | 17960  | 18980  | 25640   | 29280   | 38990   | 46390   | 64840   | 81520   | 110770  | 129470  | 189370  | 209900  |
|                | 63.0  | 7140                    | 10670  | 17360  | 20940  | 23830   | 30990   | 40250   | 48720   | 62100   | 82170   | 106900  | 144850  | 180390  | 202450  |
|                | 71.0  | 6660                    | 11520  | 16330  | 18910  | 22260   | 29160   | 38800   | 47750   | 62420   | 81170   | —       | 137030  | —       | 196430  |
| 80.0           | —     | —                       | —      | —      | —      | 26350   | 35760   | 49240   | —       | 78870   | —       | —       | —       | —       |         |
| 90.0           | —     | —                       | —      | —      | —      | —       | —       | 46010   | —       | —       | —       | —       | —       | —       |         |
| 4x             | 71.0  | —                       | —      | —      | —      | 25930   | —       | —       | —       | 65760   | —       | 109890  | —       | 180330  | —       |
|                | 80.0  | 7530                    | 11500  | 18190  | 21220  | 24100   | 31130   | —       | —       | 63000   | 84810   | 111250  | 124790  | 190190  | 200360  |
|                | 90.0  | 7220                    | 12570  | 17590  | 20330  | 26910   | 29490   | 39240   | —       | 67870   | 82350   | 117200  | 135850  | 182320  | 202450  |
|                | 100.0 | 7830                    | 11750  | 17710  | 21370  | 24880   | 30740   | 41250   | 48720   | 65030   | 82170   | 112750  | 137650  | 188900  | 199380  |
|                | 112.0 | 7510                    | 11790  | 18340  | 19300  | 27820   | 30610   | 40820   | 47750   | 69570   | 85000   | 111670  | 127540  | 190190  | 209900  |
|                | 125.0 | 7010                    | 12060  | 17260  | 21370  | 24880   | 31130   | 41250   | 49240   | 66770   | 84810   | 117200  | 137260  | 182320  | 202450  |
|                | 140.0 | —                       | 13000  | 16540  | 19980  | 28210   | 31750   | 40920   | 47230   | 69570   | 87060   | 117090  | 142460  | 183700  | 207020  |
|                | 160.0 | 8260                    | 12070  | 19230  | 21370  | 24880   | 31350   | 41250   | 48720   | 66770   | 84810   | 116600  | 146300  | 190190  | 204100  |
|                | 180.0 | 8100                    | 13910  | 19250  | 20680  | 28210   | 31790   | 40920   | 47700   | 69570   | 87060   | 114780  | 147070  | 182320  | 202450  |
|                | 200.0 | 8010                    | 12070  | 20310  | 21370  | 24880   | 31570   | 41250   | 49240   | 66770   | 84810   | 117200  | 143330  | 188900  | 205480  |
|                | 224.0 | 8430                    | 14530  | 19250  | 20940  | 28210   | 31790   | 40920   | 47700   | 69570   | 87060   | 117090  | 141140  | 190190  | 209900  |
|                | 250.0 | 7890                    | 12070  | 19360  | 21370  | 24880   | 31570   | 41250   | 48720   | 66770   | 84810   | 114780  | 146300  | 182320  | 202450  |
|                | 280.0 | —                       | 13000  | 20210  | 22400  | 28210   | 31790   | 40920   | 47230   | 69570   | 87060   | —       | 147070  | —       | —       |
|                | 315.0 | 8260                    | 11980  | 18950  | 19420  | 25080   | 31570   | 41250   | 49240   | 66770   | 80940   | —       | —       | —       | —       |
|                | 355.0 | —                       | 13910  | 19740  | 20680  | 23870   | 31790   | 40920   | 47750   | 63140   | 87060   | —       | —       | —       | —       |
|                | 400.0 | 8150                    | 13190  | 20550  | 23200  | —       | 28490   | 37730   | 49240   | —       | 78870   | —       | —       | —       | —       |
|                | 450.0 | 8990                    | 14740  | 20460  | 20940  | —       | —       | —       | 49240   | —       | —       | —       | —       | —       | —       |
| 500.0          | 8890  | 12990                   | 21610  | 21940  | —      | —       | —       | —       | —       | —       | —       | —       | —       | —       |         |

HDO

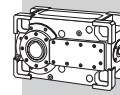


28 THERMAL CAPACITY AND RATING CHARTS

HDO

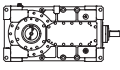
| HDO 71  |       |                               |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                    |                   |                          |                    |                   |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|--------------------|-------------------|--------------------------|--------------------|-------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                    |                   | $t_a = 40^\circ\text{C}$ |                    |                   |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDO 71 3  | 21.8  | 83                            | 5960           | 55             |                               |                    |                   |                          |                    |                   |
| HDO 71 3  | 25.3  | 71                            | 6920           | 55             |                               |                    |                   |                          |                    |                   |
| HDO 71 3  | 27.1  | 66                            | 6660           | 49             |                               |                    |                   |                          |                    |                   |
| HDO 71 3  | 31.4  | 57                            | 7250           | 46             |                               |                    |                   |                          |                    |                   |
| HDO 71 3  | 38.1  | 47                            | 7230           | 38             |                               |                    |                   |                          |                    |                   |
| HDO 71 3  | 41.9  | 43                            | 7510           | 36             |                               |                    |                   |                          |                    |                   |
| HDO 71 3  | 48.7  | 37                            | 7190           | 30             |                               |                    |                   |                          |                    |                   |
| HDO 71 3  | 54.2  | 33                            | 7180           | 27             |                               |                    |                   |                          |                    |                   |
| HDO 71 3  | 56.3  | 32                            | 6700           | 24             |                               |                    |                   |                          |                    |                   |
| HDO 71 3  | 69.2  | 26                            | 7150           | 21             |                               |                    |                   |                          |                    |                   |
| HDO 71 3  | 71.9  | 25                            | 6680           | 19             |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 77.0  | 23                            | 7420           | 20             |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 89.4  | 20                            | 7130           | 16             |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 98.3  | 18                            | 7600           | 16             |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 114.1 | 16                            | 7290           | 13             |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 118.5 | 15                            | 6810           | 12             |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 154.4 | 12                            | 8190           | 11             |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 179.3 | 10                            | 7860           | 9              |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 197.0 | 9                             | 8040           | 8              |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 228.2 | 8                             | 8180           | 7              |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 237.7 | 8                             | 7650           | 7              |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 308.9 | 6                             | 8260           | 5              |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 394.1 | 5                             | 7960           | 4              |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 457.5 | 4                             | 8750           | 4              |                               |                    |                   |                          |                    |                   |
| HDO 71 4  | 475.4 | 4                             | 8620           | 4              |                               |                    |                   |                          |                    |                   |

Thermal Power values available on request.



# HDO 71

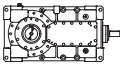
$n_1 = 1500 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 71 3  | 21.8  | 69                                     | 6300                    | 48                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 25.3  | 59                                     | 7260                    | 48                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 27.1  | 55                                     | 7030                    | 43                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 31.4  | 48                                     | 7230                    | 38                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 38.1  | 39                                     | 7200                    | 32                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 41.9  | 36                                     | 7490                    | 30                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 48.7  | 31                                     | 7170                    | 25                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 54.2  | 28                                     | 7160                    | 22                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 56.3  | 27                                     | 6680                    | 20                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 69.2  | 22                                     | 7140                    | 17                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 71.9  | 21                                     | 6660                    | 15                      |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 77.0  | 19                                     | 7530                    | 17                      |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 89.4  | 17                                     | 7220                    | 14                      |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 98.3  | 15                                     | 7830                    | 14                      |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 114.1 | 13                                     | 7510                    | 11                      |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 118.5 | 13                                     | 7010                    | 10                      |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 154.4 | 10                                     | 8260                    | 9                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 179.3 | 8                                      | 8100                    | 8                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 197.0 | 8                                      | 8010                    | 7                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 228.2 | 7                                      | 8430                    | 6                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 237.7 | 6                                      | 7890                    | 6                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 308.9 | 5                                      | 8260                    | 5                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 394.1 | 4                                      | 8150                    | 4                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 457.5 | 3                                      | 8990                    | 3                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 475.4 | 3                                      | 8890                    | 3                       |                        |                           |                          |                        |                           |                          |

Thermal Power values available on request.



**HDO**

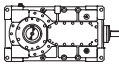
| <b>HDO 71</b>   |              |   |                                  |                                  | <b><math>n_1 = 1200 \text{ min}^{-1}</math></b> |                                      |                                     |  |                                      |                                     |
|---|--------------|---|----------------------------------|----------------------------------|---|--------------------------------------|-------------------------------------|--|--------------------------------------|-------------------------------------|
|  | <b>i</b>     | <b><math>n_2</math></b><br>[min <sup>-1</sup> ] | <b><math>Mn_2</math></b><br>[Nm] | <b><math>Pn_1</math></b><br>[kW] | <b><math>t_a = 20^\circ\text{C}</math></b>      |                                      |                                     | <b><math>t_a = 40^\circ\text{C}</math></b> |                                      |                                     |
|   |              |   |                                  |                                  | <b><math>P_T</math></b><br>[kW]                 | <b><math>P_{TFAN}</math></b><br>[kW] | <b><math>P_{TSR}</math></b><br>[kW] | <b><math>P_T</math></b><br>[kW]            | <b><math>P_{TFAN}</math></b><br>[kW] | <b><math>P_{TSR}</math></b><br>[kW] |
| <b>HDO 71 3</b>   | <b>21.8</b>  | 55  | 6730                             | 41                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 3</b>   | <b>25.3</b>  | 47  | 7230                             | 38                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 3</b>   | <b>27.1</b>  | 44  | 7510                             | 37                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 3</b>   | <b>31.4</b>  | 38  | 7200                             | 31                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 3</b>   | <b>38.1</b>  | 31  | 7180                             | 25                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 3</b>   | <b>41.9</b>  | 29  | 7460                             | 24                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 3</b>   | <b>48.7</b>  | 25  | 7150                             | 20                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 3</b>   | <b>54.2</b>  | 22  | 7140                             | 18                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 3</b>   | <b>56.3</b>  | 21  | 6660                             | 16                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 3</b>   | <b>69.2</b>  | 17  | 7180                             | 14                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 3</b>   | <b>71.9</b>  | 17  | 6700                             | 12                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>77.0</b>  | 16  | 7810                             | 14                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>89.4</b>  | 13  | 7490                             | 11                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>98.3</b>  | 12  | 8080                             | 11                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>114.1</b> | 11  | 7800                             | 9                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>118.5</b> | 10  | 7280                             | 8                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>154.4</b> | 8   | 8260                             | 7                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>179.3</b> | 7   | 8410                             | 6                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>197.0</b> | 6   | 7990                             | 6                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>228.2</b> | 5   | 8430                             | 5                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>237.7</b> | 5   | 8200                             | 5                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>308.9</b> | 4   | 8260                             | 4                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>394.1</b> | 3   | 8380                             | 3                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>457.5</b> | 3   | 9160                             | 3                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 71 4</b>   | <b>475.4</b> | 3   | 9250                             | 3                                |   |                                      |                                     |  |                                      |                                     |

Thermal Power values available on request.



# HDO 71

$n_1 = 1000 \text{ min}^{-1}$

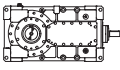
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 71 3  | 21.8  | 46                                     | 6870                    | 35                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 25.3  | 40                                     | 7200                    | 32                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 27.1  | 37                                     | 7490                    | 31                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 31.4  | 32                                     | 7180                    | 25                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 38.1  | 26                                     | 7160                    | 21                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 41.9  | 24                                     | 7440                    | 20                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 48.7  | 21                                     | 7130                    | 16                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 54.2  | 18                                     | 7120                    | 15                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 56.3  | 18                                     | 6650                    | 13                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 69.2  | 14                                     | 7400                    | 12                      |                        |                           |                          |                        |                           |                          |
| HDO 71 3  | 71.9  | 14                                     | 6910                    | 11                      |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 77.0  | 13                                     | 8050                    | 12                      |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 89.4  | 11                                     | 7720                    | 10                      |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 98.3  | 10                                     | 8050                    | 9                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 114.1 | 9                                      | 8040                    | 8                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 118.5 | 8                                      | 7510                    | 7                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 154.4 | 6                                      | 8260                    | 6                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 179.3 | 6                                      | 8430                    | 5                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 197.0 | 5                                      | 7970                    | 5                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 228.2 | 4                                      | 8600                    | 4                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 237.7 | 4                                      | 8460                    | 4                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 308.9 | 3                                      | 8260                    | 3                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 394.1 | 3                                      | 8380                    | 2                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 457.5 | 2                                      | 9160                    | 2                       |                        |                           |                          |                        |                           |                          |
| HDO 71 4  | 475.4 | 2                                      | 9480                    | 2                       |                        |                           |                          |                        |                           |                          |

Thermal Power values available on request.



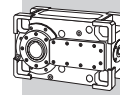
# HDO 81

$n_1 = 1800 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 81 3  | 25.9  | 70                                     | 7820                    | 61                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 30.0  | 60                                     | 9080                    | 61                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 31.8  | 57                                     | 9240                    | 58                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 36.9  | 49                                     | 10730                   | 58                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 39.9  | 45                                     | 10470                   | 53                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 44.9  | 40                                     | 9620                    | 43                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 48.1  | 37                                     | 11630                   | 48                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 55.1  | 33                                     | 10960                   | 40                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 59.6  | 30                                     | 10670                   | 36                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 71.9  | 25                                     | 11550                   | 32                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 78.3  | 23                                     | 11530                   | 30                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 94.5  | 19                                     | 12300                   | 27                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 98.2  | 18                                     | 11500                   | 24                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 105.6 | 17                                     | 11790                   | 23                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 127.4 | 14                                     | 11900                   | 19                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 132.6 | 14                                     | 13000                   | 20                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 159.9 | 11                                     | 12060                   | 15                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 181.4 | 10                                     | 13570                   | 15                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 196.5 | 9                                      | 12070                   | 13                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 227.8 | 8                                      | 14100                   | 13                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 254.8 | 7                                      | 12070                   | 10                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 265.1 | 7                                      | 13000                   | 10                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 312.6 | 6                                      | 11980                   | 8                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 362.9 | 5                                      | 13910                   | 8                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 392.4 | 5                                      | 13190                   | 7                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 455.5 | 4                                      | 14740                   | 7                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 473.3 | 4                                      | 12610                   | 5                       |                        |                           |                          |                        |                           |                          |

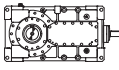
HDO

Thermal Power values available on request.



# HDO 81

$n_1 = 1500 \text{ min}^{-1}$

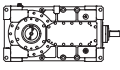
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 81 3  | 25.9  | 58                                     | 8120                    | 52                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 30.0  | 50                                     | 9430                    | 52                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 31.8  | 47                                     | 9240                    | 49                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 36.9  | 41                                     | 10730                   | 49                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 39.9  | 38                                     | 10470                   | 44                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 44.9  | 33                                     | 9670                    | 36                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 48.1  | 31                                     | 11590                   | 40                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 55.1  | 27                                     | 10960                   | 33                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 59.6  | 25                                     | 10670                   | 30                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 71.9  | 21                                     | 11520                   | 27                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 78.3  | 19                                     | 11500                   | 25                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 94.5  | 16                                     | 12570                   | 23                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 98.2  | 15                                     | 11750                   | 20                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 105.6 | 14                                     | 11790                   | 19                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 127.4 | 12                                     | 12060                   | 16                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 132.6 | 11                                     | 13000                   | 17                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 159.9 | 9                                      | 12070                   | 13                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 181.4 | 8                                      | 13910                   | 13                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 196.5 | 8                                      | 12070                   | 10                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 227.8 | 7                                      | 14530                   | 11                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 254.8 | 6                                      | 12070                   | 8                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 265.1 | 6                                      | 13000                   | 8                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 312.6 | 5                                      | 11980                   | 7                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 362.9 | 4                                      | 13910                   | 7                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 392.4 | 4                                      | 13190                   | 6                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 455.5 | 3                                      | 14740                   | 6                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 473.3 | 3                                      | 12990                   | 5                       |                        |                           |                          |                        |                           |                          |

HDO

Thermal Power values available on request.



HDO

| HDO 81  |       |  |                         |                         | n <sub>1</sub> = 1200 min <sup>-1</sup> |                           |                          |                        |                           |                          |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 81 3  | 25.9  | 46                                     | 8120                    | 42                      |   |                           |                          |                        |                           |                          |
| HDO 81 3  | 30.0  | 40                                     | 9430                    | 42                      |   |                           |                          |                        |                           |                          |
| HDO 81 3  | 31.8  | 38                                     | 9240                    | 39                      |   |                           |                          |                        |                           |                          |
| HDO 81 3  | 36.9  | 33                                     | 10730                   | 39                      |   |                           |                          |                        |                           |                          |
| HDO 81 3  | 39.9  | 30                                     | 10470                   | 35                      |   |                           |                          |                        |                           |                          |
| HDO 81 3  | 44.9  | 27                                     | 9670                    | 29                      |   |                           |                          |                        |                           |                          |
| HDO 81 3  | 48.1  | 25                                     | 11550                   | 32                      |   |                           |                          |                        |                           |                          |
| HDO 81 3  | 55.1  | 22                                     | 10960                   | 27                      |   |                           |                          |                        |                           |                          |
| HDO 81 3  | 59.6  | 20                                     | 10670                   | 24                      |   |                           |                          |                        |                           |                          |
| HDO 81 3  | 71.9  | 17                                     | 11580                   | 21                      |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 78.3  | 15                                     | 11740                   | 20                      |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 94.5  | 13                                     | 13040                   | 19                      |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 98.2  | 12                                     | 12060                   | 17                      |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 105.6 | 11                                     | 11790                   | 15                      |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 127.4 | 9                                      | 12070                   | 13                      |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 132.6 | 9                                      | 13000                   | 13                      |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 159.9 | 8                                      | 12070                   | 10                      |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 181.4 | 7                                      | 13910                   | 10                      |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 196.5 | 6                                      | 12070                   | 8                       |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 227.8 | 5                                      | 14740                   | 9                       |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 254.8 | 5                                      | 12180                   | 7                       |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 265.1 | 5                                      | 13000                   | 7                       |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 312.6 | 4                                      | 11980                   | 5                       |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 362.9 | 3                                      | 13910                   | 5                       |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 392.4 | 3                                      | 13190                   | 5                       |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 455.5 | 3                                      | 14740                   | 4                       |   |                           |                          |                        |                           |                          |
| HDO 81 4  | 473.3 | 3                                      | 13470                   | 4                       |   |                           |                          |                        |                           |                          |

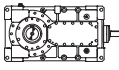
Thermal Power values available on request.





# HDO 81

$n_1 = 1000 \text{ min}^{-1}$

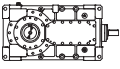
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 81 3  | 25.9  | 39                                     | 8120                    | 35                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 30.0  | 33                                     | 9430                    | 35                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 31.8  | 31                                     | 9240                    | 32                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 36.9  | 27                                     | 10730                   | 32                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 39.9  | 25                                     | 10470                   | 29                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 44.9  | 22                                     | 9670                    | 24                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 48.1  | 21                                     | 11520                   | 27                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 55.1  | 18                                     | 10960                   | 22                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 59.6  | 17                                     | 10670                   | 20                      |                        |                           |                          |                        |                           |                          |
| HDO 81 3  | 71.9  | 14                                     | 11930                   | 18                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 78.3  | 13                                     | 12060                   | 17                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 94.5  | 11                                     | 13430                   | 16                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 98.2  | 10                                     | 12070                   | 14                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 105.6 | 9                                      | 11790                   | 13                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 127.4 | 8                                      | 12070                   | 11                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 132.6 | 8                                      | 13000                   | 11                      |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 159.9 | 6                                      | 12070                   | 9                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 181.4 | 6                                      | 13910                   | 9                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 196.5 | 5                                      | 12070                   | 7                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 227.8 | 4                                      | 14740                   | 7                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 254.8 | 4                                      | 12550                   | 6                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 265.1 | 4                                      | 13000                   | 6                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 312.6 | 3                                      | 11980                   | 4                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 362.9 | 3                                      | 13910                   | 4                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 392.4 | 3                                      | 13190                   | 4                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 455.5 | 2                                      | 14740                   | 4                       |                        |                           |                          |                        |                           |                          |
| HDO 81 4  | 473.3 | 2                                      | 13870                   | 3                       |                        |                           |                          |                        |                           |                          |

HDO

Thermal Power values available on request.



HDO

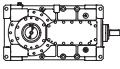
| HDO 91  |       |                                |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                    |                   |                          |                    |                   |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|--------------------|-------------------|--------------------------|--------------------|-------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                    |                   | $t_a = 40^\circ\text{C}$ |                    |                   |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TSR}$<br>[kW] |
| HDO 91 3  | 18.6  | 97                             | 15070          | 162            |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 20.7  | 87                             | 16780          | 162            |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 22.5  | 80                             | 16770          | 149            |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 24.1  | 75                             | 16660          | 139            |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 29.1  | 62                             | 16660          | 114            |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 30.6  | 59                             | 17820          | 117            |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 36.9  | 49                             | 17580          | 95             |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 40.2  | 45                             | 16540          | 82             |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 42.9  | 42                             | 18100          | 84             |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 52.0  | 35                             | 16450          | 63             |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 54.5  | 33                             | 18020          | 66             |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 60.7  | 30                             | 17410          | 57             |                               |                    |                   |                          |                    |                   |
| HDO 91 3  | 66.1  | 27                             | 16380          | 50             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 82.0  | 22                             | 15940          | 40             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 91.3  | 20                             | 17300          | 39             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 95.3  | 19                             | 17290          | 37             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 118.1 | 15                             | 17810          | 31             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 128.5 | 14                             | 16760          | 27             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 137.1 | 13                             | 16620          | 25             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 159.3 | 11                             | 19310          | 25             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 177.4 | 10                             | 19020          | 22             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 202.5 | 9                              | 20370          | 21             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 225.4 | 8                              | 19250          | 17             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 256.3 | 7                              | 18780          | 15             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 268.8 | 7                              | 20270          | 15             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 317.8 | 6                              | 19020          | 12             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 353.8 | 5                              | 19260          | 11             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 403.8 | 4                              | 20150          | 10             |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 449.6 | 4                              | 19910          | 9              |                               |                    |                   |                          |                    |                   |
| HDO 91 4  | 489.3 | 4                              | 20950          | 9              |                               |                    |                   |                          |                    |                   |

Thermal Power values available on request.



# HDO 91

$n_1 = 1500 \text{ min}^{-1}$

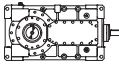
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 91 3  | 18.6  | 81                                     | 15920                   | 143                     |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 20.7  | 72                                     | 17720                   | 143                     |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 22.5  | 67                                     | 16690                   | 124                     |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 24.1  | 62                                     | 17600                   | 122                     |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 29.1  | 51                                     | 16590                   | 95                      |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 30.6  | 49                                     | 18160                   | 99                      |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 36.9  | 41                                     | 17520                   | 79                      |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 40.2  | 37                                     | 16480                   | 68                      |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 42.9  | 35                                     | 18030                   | 70                      |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 52.0  | 29                                     | 16400                   | 53                      |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 54.5  | 28                                     | 17960                   | 55                      |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 60.7  | 25                                     | 17360                   | 48                      |                        |                           |                          |                        |                           |                          |
| HDO 91 3  | 66.1  | 23                                     | 16330                   | 41                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 82.0  | 18                                     | 16840                   | 35                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 91.3  | 16                                     | 17590                   | 33                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 95.3  | 16                                     | 17710                   | 32                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 118.1 | 13                                     | 18340                   | 26                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 128.5 | 12                                     | 17260                   | 23                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 137.1 | 11                                     | 16540                   | 21                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 159.3 | 9                                      | 19230                   | 21                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 177.4 | 8                                      | 19250                   | 18                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 202.5 | 7                                      | 20310                   | 17                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 225.4 | 7                                      | 19250                   | 15                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 256.3 | 6                                      | 19360                   | 13                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 268.8 | 6                                      | 20210                   | 13                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 317.8 | 5                                      | 18950                   | 10                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 353.8 | 4                                      | 19740                   | 10                      |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 403.8 | 4                                      | 20550                   | 9                       |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 449.6 | 3                                      | 20460                   | 8                       |                        |                           |                          |                        |                           |                          |
| HDO 91 4  | 489.3 | 3                                      | 21610                   | 8                       |                        |                           |                          |                        |                           |                          |

Thermal Power values available on request.

HDO



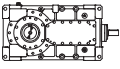
HDO

| HDO 91  |       |  |                         |                         | n <sub>1</sub> = 1200 min <sup>-1</sup> |                           |                          |                        |                           |                          |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 91 3  | 18.6  | 65                                     | 16760                   | 120                     |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 20.7  | 58                                     | 17650                   | 114                     |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 22.5  | 53                                     | 16600                   | 98                      |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 24.1  | 50                                     | 18170                   | 101                     |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 29.1  | 41                                     | 16510                   | 76                      |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 30.6  | 39                                     | 18080                   | 79                      |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 36.9  | 33                                     | 17440                   | 63                      |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 40.2  | 30                                     | 16410                   | 55                      |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 42.9  | 28                                     | 17960                   | 56                      |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 52.0  | 23                                     | 16340                   | 42                      |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 54.5  | 22                                     | 17890                   | 44                      |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 60.7  | 20                                     | 17300                   | 38                      |   |                           |                          |                        |                           |                          |
| HDO 91 3  | 66.1  | 18                                     | 16280                   | 33                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 82.0  | 15                                     | 18000                   | 30                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 91.3  | 13                                     | 18230                   | 27                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 95.3  | 13                                     | 18360                   | 26                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 118.1 | 10                                     | 19010                   | 22                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 128.5 | 9                                      | 17910                   | 19                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 137.1 | 9                                      | 16460                   | 16                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 159.3 | 8                                      | 19130                   | 16                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 177.4 | 7                                      | 19250                   | 15                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 202.5 | 6                                      | 20230                   | 14                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 225.4 | 5                                      | 19260                   | 12                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 256.3 | 5                                      | 20110                   | 11                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 268.8 | 4                                      | 20150                   | 10                      |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 317.8 | 4                                      | 18870                   | 8                       |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 353.8 | 3                                      | 20410                   | 8                       |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 403.8 | 3                                      | 21440                   | 7                       |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 449.6 | 3                                      | 21160                   | 6                       |   |                           |                          |                        |                           |                          |
| HDO 91 4  | 489.3 | 2                                      | 22350                   | 6                       |   |                           |                          |                        |                           |                          |

Thermal Power values available on request.



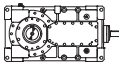
**HDO**

| <b>HDO 91</b>   |          |  |                               |                               | <b>n<sub>1</sub> = 1000 min<sup>-1</sup></b> |                                 |                                |                              |                                 |                                |
|---|----------|--|-------------------------------|-------------------------------|--|---------------------------------|--------------------------------|------------------------------|---------------------------------|--------------------------------|
|  | <b>i</b> | <b>n<sub>2</sub></b><br>[min <sup>-1</sup> ] | <b>Mn<sub>2</sub></b><br>[Nm] | <b>Pn<sub>1</sub></b><br>[kW] | <b>t<sub>a</sub> = 20°C</b>                  |                                 |                                | <b>t<sub>a</sub> = 40°C</b>  |                                 |                                |
|   |          |  |                               |                               | <b>P<sub>T</sub></b><br>[kW]                 | <b>P<sub>TFAN</sub></b><br>[kW] | <b>P<sub>TSR</sub></b><br>[kW] | <b>P<sub>T</sub></b><br>[kW] | <b>P<sub>TFAN</sub></b><br>[kW] | <b>P<sub>TSR</sub></b><br>[kW] |
| HDO 91 3  | 18.6     | 65   | 16760                         | 120                           |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 20.7     | 58   | 17650                         | 114                           |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 22.5     | 53   | 16600                         | 98                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 24.1     | 50   | 18170                         | 101                           |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 29.1     | 41   | 16510                         | 76                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 30.6     | 39   | 18080                         | 79                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 36.9     | 33   | 17440                         | 63                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 40.2     | 30   | 16410                         | 55                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 42.9     | 28   | 17960                         | 56                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 52.0     | 23   | 16340                         | 42                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 54.5     | 22   | 17890                         | 44                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 60.7     | 20   | 17300                         | 38                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 3  | 66.1     | 18   | 16280                         | 33                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 82.0     | 15   | 18000                         | 30                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 91.3     | 13   | 18230                         | 27                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 95.3     | 13   | 18360                         | 26                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 118.1    | 10   | 19010                         | 22                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 128.5    | 9  | 17910                         | 19                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 137.1    | 9  | 16460                         | 16                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 159.3    | 8  | 19130                         | 16                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 177.4    | 7  | 19250                         | 15                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 202.5    | 6  | 20230                         | 14                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 225.4    | 5  | 19260                         | 12                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 256.3    | 5  | 20110                         | 11                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 268.8    | 4  | 20150                         | 10                            |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 317.8    | 4  | 18870                         | 8                             |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 353.8    | 3  | 20410                         | 8                             |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 403.8    | 3  | 21440                         | 7                             |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 449.6    | 3  | 21160                         | 6                             |  |                                 |                                |                              |                                 |                                |
| HDO 91 4  | 489.3    | 2  | 22350                         | 6                             |  |                                 |                                |                              |                                 |                                |

Thermal Power values available on request.

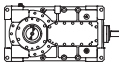


HDO

| HDO 95  |       |  |                         |                         | n <sub>1</sub> = 1800 min <sup>-1</sup> |                           |                          |                        |                           |                          |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 95 3  | 21.2  | 85                                     | 17710                   | 167                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 22.5  | 80                                     | 18290                   | 163                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 24.7  | 73                                     | 18900                   | 154                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 27.5  | 66                                     | 19580                   | 143                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 31.9  | 56                                     | 19290                   | 121                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 34.9  | 52                                     | 20940                   | 120                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 40.5  | 44                                     | 19180                   | 95                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 44.0  | 41                                     | 19150                   | 87                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 49.0  | 37                                     | 20680                   | 85                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 56.9  | 32                                     | 19050                   | 67                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 62.2  | 29                                     | 20940                   | 67                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 72.3  | 25                                     | 18960                   | 53                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 81.6  | 22                                     | 20650                   | 52                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 93.6  | 19                                     | 18190                   | 40                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 103.7 | 17                                     | 21200                   | 42                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 113.5 | 16                                     | 18830                   | 34                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 128.7 | 14                                     | 21370                   | 34                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 140.7 | 13                                     | 19400                   | 28                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 163.5 | 11                                     | 21370                   | 27                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 181.9 | 10                                     | 20680                   | 23                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 211.3 | 9                                      | 20730                   | 20                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 231.1 | 8                                      | 20940                   | 19                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 256.6 | 7                                      | 21370                   | 17                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 280.6 | 6                                      | 21730                   | 16                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 325.7 | 6                                      | 19490                   | 12                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 362.7 | 5                                      | 20680                   | 12                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 421.4 | 4                                      | 23200                   | 11                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 460.9 | 4                                      | 20940                   | 9                       |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 489.7 | 4                                      | 21940                   | 9                       |   |                           |                          |                        |                           |                          |

Thermal Power values available on request.

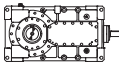


| HDO 95  |       |  |                         |                         | n <sub>1</sub> = 1500 min <sup>-1</sup> |                           |                          |                        |                           |                          |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 95 3  | 21.2  | 71                                     | 18710                   | 147                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 22.5  | 67                                     | 19320                   | 143                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 24.7  | 61                                     | 19320                   | 131                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 27.5  | 55                                     | 20680                   | 126                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 31.9  | 47                                     | 19200                   | 100                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 34.9  | 43                                     | 20940                   | 100                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 40.5  | 37                                     | 19110                   | 79                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 44.0  | 34                                     | 19070                   | 72                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 49.0  | 31                                     | 20680                   | 70                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 56.9  | 26                                     | 18980                   | 56                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 62.2  | 24                                     | 20940                   | 56                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 72.3  | 21                                     | 18910                   | 44                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 81.6  | 18                                     | 21220                   | 44                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 93.6  | 16                                     | 19220                   | 35                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 103.7 | 14                                     | 21370                   | 35                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 113.5 | 13                                     | 19300                   | 29                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 128.7 | 12                                     | 21370                   | 28                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 140.7 | 11                                     | 19980                   | 24                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 163.5 | 9                                      | 21370                   | 22                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 181.9 | 8                                      | 20680                   | 19                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 211.3 | 7                                      | 21370                   | 17                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 231.1 | 6                                      | 20940                   | 15                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 256.6 | 6                                      | 21370                   | 14                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 280.6 | 5                                      | 22400                   | 14                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 325.7 | 5                                      | 19420                   | 10                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 362.7 | 4                                      | 20680                   | 10                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 421.4 | 4                                      | 23200                   | 9                       |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 460.9 | 3                                      | 20940                   | 8                       |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 489.7 | 3                                      | 21940                   | 8                       |   |                           |                          |                        |                           |                          |

Thermal Power values available on request.



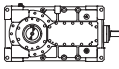
**HDO**

| <b>HDO 95</b>   |              |  |                                  |                                  | <b><math>n_1 = 1200 \text{ min}^{-1}</math></b> |                                      |                                     |  |                                      |                                     |
|---|--------------|--|----------------------------------|----------------------------------|---|--------------------------------------|-------------------------------------|--|--------------------------------------|-------------------------------------|
|  | <b>i</b>     | <b><math>n_2</math></b><br>[ $\text{min}^{-1}$ ] | <b><math>Mn_2</math></b><br>[Nm] | <b><math>Pn_1</math></b><br>[kW] | <b><math>t_a = 20^\circ\text{C}</math></b>      |                                      |                                     | <b><math>t_a = 40^\circ\text{C}</math></b> |                                      |                                     |
|   |              |  |                                  |                                  | <b><math>P_T</math></b><br>[kW]                 | <b><math>P_{TFAN}</math></b><br>[kW] | <b><math>P_{TSR}</math></b><br>[kW] | <b><math>P_T</math></b><br>[kW]            | <b><math>P_{TFAN}</math></b><br>[kW] | <b><math>P_{TSR}</math></b><br>[kW] |
| <b>HDO 95 3</b>   | <b>21.2</b>  | 57   | 20000                            | 126                              |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>22.5</b>  | 53   | 20660                            | 122                              |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>24.7</b>  | 49   | 19220                            | 104                              |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>27.5</b>  | 44   | 20680                            | 101                              |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>31.9</b>  | 38   | 19110                            | 80                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>34.9</b>  | 34   | 20940                            | 80                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>40.5</b>  | 30   | 19020                            | 63                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>44.0</b>  | 27   | 19000                            | 58                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>49.0</b>  | 25   | 20680                            | 56                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>56.9</b>  | 21   | 18910                            | 44                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>62.2</b>  | 19   | 20940                            | 45                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 3</b>   | <b>72.3</b>  | 17   | 18840                            | 35                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>81.6</b>  | 15   | 21370                            | 36                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>93.6</b>  | 13   | 20330                            | 30                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>103.7</b> | 12   | 21370                            | 28                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>113.5</b> | 11   | 20010                            | 24                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>128.7</b> | 9  | 21370                            | 23                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>140.7</b> | 9  | 20730                            | 20                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>163.5</b> | 7  | 21370                            | 18                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>181.9</b> | 7  | 20680                            | 15                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>211.3</b> | 6  | 22180                            | 14                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>231.1</b> | 5  | 20940                            | 12                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>256.6</b> | 5  | 21610                            | 11                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>280.6</b> | 4  | 23200                            | 11                               |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>325.7</b> | 4  | 19340                            | 8                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>362.7</b> | 3  | 20680                            | 8                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>421.4</b> | 3  | 23200                            | 8                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>460.9</b> | 3  | 20940                            | 6                                |   |                                      |                                     |  |                                      |                                     |
| <b>HDO 95 4</b>   | <b>489.7</b> | 2  | 21940                            | 6                                |   |                                      |                                     |  |                                      |                                     |

Thermal Power values available on request.

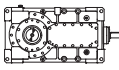




| HDO 95  |       |  |                         |                         | n <sub>1</sub> = 1000 min <sup>-1</sup> |                           |                          |                        |                           |                          |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                          | t <sub>a</sub> = 40°C  |                           |                          |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TSR</sub><br>[kW] |
| HDO 95 3  | 21.2  | 47                                     | 20040                   | 105                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 22.5  | 44                                     | 21290                   | 105                     |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 24.7  | 41                                     | 19140                   | 86                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 27.5  | 36                                     | 20680                   | 84                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 31.9  | 31                                     | 19040                   | 66                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 34.9  | 29                                     | 20940                   | 67                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 40.5  | 25                                     | 18960                   | 52                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 44.0  | 23                                     | 18940                   | 48                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 49.0  | 20                                     | 20680                   | 47                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 56.9  | 18                                     | 18860                   | 37                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 62.2  | 16                                     | 20940                   | 37                      |   |                           |                          |                        |                           |                          |
| HDO 95 3  | 72.3  | 14                                     | 19160                   | 29                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 81.6  | 12                                     | 21370                   | 30                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 93.6  | 11                                     | 20330                   | 25                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 103.7 | 10                                     | 21370                   | 23                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 113.5 | 9                                      | 20620                   | 21                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 128.7 | 8                                      | 21370                   | 19                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 140.7 | 7                                      | 21360                   | 17                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 163.5 | 6                                      | 21370                   | 15                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 181.9 | 5                                      | 20680                   | 13                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 211.3 | 5                                      | 22870                   | 12                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 231.1 | 4                                      | 20940                   | 10                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 256.6 | 4                                      | 21700                   | 10                      |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 280.6 | 4                                      | 23200                   | 9                       |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 325.7 | 3                                      | 19290                   | 7                       |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 362.7 | 3                                      | 20680                   | 6                       |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 421.4 | 2                                      | 23200                   | 6                       |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 460.9 | 2                                      | 20940                   | 5                       |   |                           |                          |                        |                           |                          |
| HDO 95 4  | 489.7 | 2                                      | 21940                   | 5                       |   |                           |                          |                        |                           |                          |

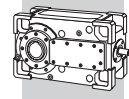
Thermal Power values available on request.



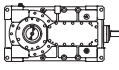
| HDO 100   |       |  |                         |                         | n <sub>1</sub> = 1800 min <sup>-1</sup> |                           |                             |                              |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|------------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                             |                              |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRAS</sub><br>[kW] | P <sub>TMCRAS9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 100 2   | 5.8   | 310                                    | 14190                   | 479                     | *                                       | 249                       | 282                         | 360                          | 195                      | 223                         | 317                         |
| HDO 100 2   | 6.5   | 279                                    | 16170                   | 491                     | *                                       | 253                       | 286                         | 364                          | 199                      | 227                         | 321                         |
| HDO 100 2   | 7.0   | 256                                    | 16790                   | 468                     | *                                       | 255                       | 288                         | 366                          | 201                      | 229                         | 323                         |
| HDO 100 2   | 8.0   | 225                                    | 16440                   | 403                     | *                                       | 261                       | 294                         | 372                          | 207                      | 235                         | 329                         |
| HDO 100 2   | 8.7   | 207                                    | 17000                   | 383                     | *                                       | 263                       | 296                         | 374                          | 209                      | 237                         | 331                         |
| HDO 100 2   | 10.0  | 180                                    | 16640                   | 327                     | *                                       | 272                       | 305                         | 383                          | 218                      | 246                         | 340                         |
| HDO 100 2   | 10.9  | 165                                    | 17250                   | 311                     | 132                                     | 274                       | 307                         | 385                          | 220                      | 248                         | 342                         |
| HDO 100 2   | 12.4  | 145                                    | 17020                   | 269                     | 138                                     | 280                       | 313                         | —                            | 226                      | 254                         | 348                         |
| HDO 100 2   | 13.5  | 133                                    | 17680                   | 257                     | 139                                     | 281                       | 314                         | —                            | 227                      | 255                         | 349                         |
| HDO 100 3   | 14.0  | 128                                    | 19080                   | 273                     | *                                       | 187                       | 216                         | 273                          | 152                      | 173                         | 241                         |
| HDO 100 3   | 15.6  | 116                                    | 20950                   | 270                     | *                                       | 188                       | 217                         | 274                          | 153                      | 174                         | 242                         |
| HDO 100 3   | 17.3  | 104                                    | 20070                   | 232                     | 94                                      | 192                       | 221                         | 278                          | 157                      | 178                         | 246                         |
| HDO 100 3   | 20.2  | 89                                     | 22110                   | 219                     | 101                                     | 199                       | 228                         | —                            | 164                      | 185                         | 253                         |
| HDO 100 3   | 22.5  | 80                                     | 21720                   | 193                     | 104                                     | 202                       | 231                         | —                            | 167                      | 188                         | 256                         |
| HDO 100 3   | 25.0  | 72                                     | 24090                   | 193                     | 104                                     | 202                       | 231                         | —                            | 167                      | 188                         | 256                         |
| HDO 100 3   | 28.3  | 64                                     | 22710                   | 161                     | 107                                     | 205                       | 234                         | —                            | 170                      | 191                         | —                           |
| HDO 100 3   | 31.5  | 57                                     | 23480                   | 149                     | 107                                     | 205                       | 234                         | —                            | 170                      | 191                         | —                           |
| HDO 100 3   | 36.0  | 50                                     | 23760                   | 132                     | 109                                     | 207                       | 236                         | —                            | 172                      | 193                         | —                           |
| HDO 100 3   | 40.0  | 45                                     | 23480                   | 118                     | 110                                     | 208                       | 237                         | —                            | 173                      | 194                         | —                           |
| HDO 100 3   | 43.9  | 41                                     | 24090                   | 110                     | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 3   | 48.8  | 37                                     | 23480                   | 96                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 3   | 55.8  | 32                                     | 25730                   | 92                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 3   | 62.0  | 29.0                                   | 23480                   | 76                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 3   | 67.5  | 26.7                                   | 22050                   | 65                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 70.8  | 25.4                                   | 25620                   | 74                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 78.7  | 22.9                                   | 23480                   | 61                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 90.0  | 20.0                                   | 26160                   | 59                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 100.0 | 18.0                                   | 23480                   | 48                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 111.4 | 16.2                                   | 26450                   | 49                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 123.8 | 14.5                                   | 23480                   | 39                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 139.8 | 12.9                                   | 26450                   | 39                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 160.0 | 11.3                                   | 23480                   | 30                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 178.2 | 10.1                                   | 26450                   | 30                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 198.0 | 9.1                                    | 23480                   | 24                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 223.7 | 8.0                                    | 26450                   | 24                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 248.6 | 7.2                                    | 24880                   | 20                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 284.4 | 6.3                                    | 28210                   | 20                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 316.0 | 5.7                                    | 24880                   | 16.1                    | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 100 4   | 344.2 | 5.2                                    | 23870                   | 14.2                    | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDO**

| HDO 100   |       |  |                         |                         | n <sub>1</sub> = 1800 min <sup>-1</sup> |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C                   |                           |                             |                             |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 100 2   | 5.8   | 310                                    | 14190                   | 479                     | *                                       | *                         | *                           | 204                         | *                        | *                           | 273                         |
| HDO 100 2   | 6.5   | 279                                    | 16170                   | 491                     | *                                       | *                         | *                           | 207                         | *                        | *                           | 276                         |
| HDO 100 2   | 7.0   | 256                                    | 16790                   | 468                     | *                                       | *                         | *                           | 210                         | *                        | *                           | 279                         |
| HDO 100 2   | 8.0   | 225                                    | 16440                   | 403                     | *                                       | 178                       | 171                         | 215                         | 162                      | 190                         | 284                         |
| HDO 100 2   | 8.7   | 207                                    | 17000                   | 383                     | *                                       | 180                       | 173                         | 217                         | 164                      | 192                         | 286                         |
| HDO 100 2   | 10.0  | 180                                    | 16640                   | 327                     | *                                       | 190                       | 183                         | 227                         | 174                      | 202                         | 296                         |
| HDO 100 2   | 10.9  | 165                                    | 17250                   | 311                     | *                                       | 191                       | 184                         | 228                         | 175                      | 203                         | 297                         |
| HDO 100 2   | 12.4  | 145                                    | 17020                   | 269                     | *                                       | 198                       | 191                         | 235                         | 182                      | 210                         | 304                         |
| HDO 100 2   | 13.5  | 133                                    | 17680                   | 257                     | *                                       | 199                       | 192                         | 236                         | 183                      | 211                         | 305                         |
| HDO 100 3   | 14.0  | 128                                    | 19080                   | 273                     | *                                       | 127                       | 126                         | 157                         | 118                      | 139                         | 207                         |
| HDO 100 3   | 15.6  | 116                                    | 20950                   | 270                     | *                                       | 128                       | 127                         | 158                         | 119                      | 140                         | 208                         |
| HDO 100 3   | 17.3  | 104                                    | 20070                   | 232                     | *                                       | 132                       | 131                         | 162                         | 123                      | 144                         | 212                         |
| HDO 100 3   | 20.2  | 89                                     | 22110                   | 219                     | *                                       | 139                       | 138                         | 169                         | 130                      | 151                         | 219                         |
| HDO 100 3   | 22.5  | 80                                     | 21720                   | 193                     | *                                       | 142                       | 141                         | 172                         | 133                      | 154                         | 222                         |
| HDO 100 3   | 25.0  | 72                                     | 24090                   | 193                     | *                                       | 142                       | 141                         | 172                         | 133                      | 154                         | 222                         |
| HDO 100 3   | 28.3  | 64                                     | 22710                   | 161                     | 73                                      | 145                       | 144                         | 175                         | 136                      | 157                         | 225                         |
| HDO 100 3   | 31.5  | 57                                     | 23480                   | 149                     | 73                                      | 145                       | 144                         | 175                         | 136                      | 157                         | —                           |
| HDO 100 3   | 36.0  | 50                                     | 23760                   | 132                     | 75                                      | 147                       | 146                         | —                           | 138                      | 159                         | —                           |
| HDO 100 3   | 40.0  | 45                                     | 23480                   | 118                     | 76                                      | 148                       | 147                         | —                           | 139                      | 160                         | —                           |
| HDO 100 3   | 43.9  | 41                                     | 24090                   | 110                     | 81                                      | 153                       | 152                         | —                           | 144                      | 165                         | —                           |
| HDO 100 3   | 48.8  | 37                                     | 23480                   | 96                      | 81                                      | 153                       | 152                         | —                           | 144                      | 165                         | —                           |
| HDO 100 3   | 55.8  | 32                                     | 25730                   | 92                      | 82                                      | 154                       | 153                         | —                           | 145                      | 166                         | —                           |
| HDO 100 3   | 62.0  | 29.0                                   | 23480                   | 76                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 67.5  | 26.7                                   | 22050                   | 65                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 70.8  | 25.4                                   | 25620                   | 74                      | 60                                      | 114                       | 115                         | —                           | 108                      | 126                         | —                           |
| HDO 100 4   | 78.7  | 22.9                                   | 23480                   | 61                      | 60                                      | 114                       | 115                         | —                           | 108                      | 126                         | —                           |
| HDO 100 4   | 90.0  | 20.0                                   | 26160                   | 59                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 100.0 | 18.0                                   | 23480                   | 48                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 111.4 | 16.2                                   | 26450                   | 49                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 123.8 | 14.5                                   | 23480                   | 39                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 139.8 | 12.9                                   | 26450                   | 39                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 160.0 | 11.3                                   | 23480                   | 30                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 178.2 | 10.1                                   | 26450                   | 30                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 198.0 | 9.1                                    | 23480                   | 24                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 223.7 | 8.0                                    | 26450                   | 24                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 248.6 | 7.2                                    | 24880                   | 20                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 284.4 | 6.3                                    | 28210                   | 20                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 316.0 | 5.7                                    | 24880                   | 16.1                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 344.2 | 5.2                                    | 23870                   | 14.2                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |

\* 

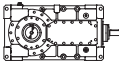
— Thermal verification not necessary



# HDO 100

$n_1 = 1500 \text{ min}^{-1}$

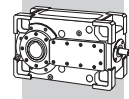
$t_a = 20^\circ\text{C}$

|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                    |                      |                      |                   |                      |                      |
|---|-------|--------------------------------|----------------|----------------|--------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|
|   |       |                                |                |                | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDO 100 2   | 5.8   | 258                            | 14990          | 422            | *                        | 244                | 295                  | 373                  | 208               | 236                  | 330                  |
| HDO 100 2   | 6.5   | 232                            | 17080          | 432            | *                        | 247                | 298                  | 376                  | 211               | 239                  | 333                  |
| HDO 100 2   | 7.0   | 213                            | 17740          | 412            | *                        | 249                | 300                  | 378                  | 213               | 241                  | 335                  |
| HDO 100 2   | 8.0   | 188                            | 17370          | 355            | *                        | 253                | 304                  | 382                  | 217               | 245                  | 339                  |
| HDO 100 2   | 8.7   | 172                            | 17950          | 337            | *                        | 255                | 306                  | 384                  | 219               | 247                  | 341                  |
| HDO 100 2   | 10.0  | 150                            | 17580          | 288            | 138                      | 262                | 313                  | —                    | 226               | 254                  | 348                  |
| HDO 100 2   | 10.9  | 138                            | 18220          | 274            | 139                      | 263                | 314                  | —                    | 227               | 255                  | 349                  |
| HDO 100 2   | 12.4  | 121                            | 17980          | 237            | 144                      | 268                | 319                  | —                    | 232               | 260                  | —                    |
| HDO 100 2   | 13.5  | 111                            | 18670          | 226            | 145                      | 269                | 320                  | —                    | 233               | 261                  | —                    |
| HDO 100 3   | 14.0  | 107                            | 20240          | 241            | 98                       | 183                | 225                  | 282                  | 161               | 182                  | 250                  |
| HDO 100 3   | 15.6  | 96                             | 22210          | 238            | 98                       | 183                | 225                  | 282                  | 161               | 182                  | 250                  |
| HDO 100 3   | 17.3  | 87                             | 21300          | 205            | 102                      | 187                | 229                  | —                    | 165               | 186                  | 254                  |
| HDO 100 3   | 20.2  | 74                             | 23650          | 195            | 107                      | 192                | 234                  | —                    | 170               | 191                  | 259                  |
| HDO 100 3   | 22.5  | 67                             | 23040          | 171            | 109                      | 194                | 236                  | —                    | 172               | 193                  | —                    |
| HDO 100 3   | 25.0  | 60                             | 24270          | 162            | 109                      | 194                | 236                  | —                    | 172               | 193                  | —                    |
| HDO 100 3   | 28.3  | 53                             | 24080          | 142            | 111                      | 196                | 238                  | —                    | 174               | 195                  | —                    |
| HDO 100 3   | 31.5  | 48                             | 24140          | 128            | 112                      | 197                | 239                  | —                    | 175               | 196                  | —                    |
| HDO 100 3   | 36.0  | 42                             | 25230          | 117            | 113                      | 198                | 240                  | —                    | 176               | 197                  | —                    |
| HDO 100 3   | 40.0  | 38                             | 24020          | 100            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 3   | 43.9  | 34                             | 25580          | 97             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 3   | 48.8  | 31                             | 23930          | 82             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 3   | 55.8  | 26.9                           | 25640          | 77             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 3   | 62.0  | 24.2                           | 23830          | 64             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 3   | 67.5  | 22.2                           | 22260          | 55             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 70.8  | 21.2                           | 25930          | 62             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 78.7  | 19.1                           | 24100          | 52             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 90.0  | 16.7                           | 26910          | 51             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 100.0 | 15.0                           | 24880          | 42             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 111.4 | 13.5                           | 27820          | 43             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 123.8 | 12.1                           | 24880          | 34             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 139.8 | 10.7                           | 28210          | 34             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 160.0 | 9.4                            | 24880          | 26             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 178.2 | 8.4                            | 28210          | 27             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 198.0 | 7.6                            | 24880          | 21             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 223.7 | 6.7                            | 28210          | 21             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 248.6 | 6.0                            | 24880          | 17.0           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 284.4 | 5.3                            | 28210          | 16.9           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 316.0 | 4.7                            | 25080          | 13.5           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 100 4   | 344.2 | 4.4                            | 23870          | 11.8           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |

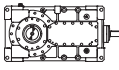
HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary

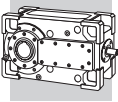


**HDO**

| HDO 100   |       |  |                         |                         | n <sub>1</sub> = 1500 min <sup>-1</sup> |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C                   |                           |                             |                             |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 100 2   | 5.8   | 258                                    | 14990                   | 422                     | *                                       | *                         | 173                         | 217                         | *                        | 192                         | 286                         |
| HDO 100 2   | 6.5   | 232                                    | 17080                   | 432                     | *                                       | *                         | 176                         | 220                         | *                        | 195                         | 289                         |
| HDO 100 2   | 7.0   | 213                                    | 17740                   | 412                     | *                                       | 172                       | 178                         | 222                         | 169                      | 197                         | 291                         |
| HDO 100 2   | 8.0   | 188                                    | 17370                   | 355                     | *                                       | 176                       | 182                         | 226                         | 173                      | 201                         | 295                         |
| HDO 100 2   | 8.7   | 172                                    | 17950                   | 337                     | *                                       | 177                       | 183                         | 227                         | 174                      | 202                         | 296                         |
| HDO 100 2   | 10.0  | 150                                    | 17580                   | 288                     | *                                       | 185                       | 191                         | 235                         | 182                      | 210                         | 304                         |
| HDO 100 2   | 10.9  | 138                                    | 18220                   | 274                     | *                                       | 186                       | 192                         | 236                         | 183                      | 211                         | 305                         |
| HDO 100 2   | 12.4  | 121                                    | 17980                   | 237                     | 100                                     | 191                       | 197                         | 241                         | 188                      | 216                         | 310                         |
| HDO 100 2   | 13.5  | 111                                    | 18670                   | 226                     | 101                                     | 192                       | 198                         | 242                         | 189                      | 217                         | 311                         |
| HDO 100 3   | 14.0  | 107                                    | 20240                   | 241                     | *                                       | 126                       | 135                         | 166                         | 127                      | 148                         | 216                         |
| HDO 100 3   | 15.6  | 96                                     | 22210                   | 238                     | *                                       | 126                       | 135                         | 166                         | 127                      | 148                         | 216                         |
| HDO 100 3   | 17.3  | 87                                     | 21300                   | 205                     | *                                       | 130                       | 139                         | 170                         | 131                      | 152                         | 220                         |
| HDO 100 3   | 20.2  | 74                                     | 23650                   | 195                     | *                                       | 135                       | 144                         | 175                         | 136                      | 157                         | 225                         |
| HDO 100 3   | 22.5  | 67                                     | 23040                   | 171                     | 75                                      | 137                       | 146                         | 177                         | 138                      | 159                         | 227                         |
| HDO 100 3   | 25.0  | 60                                     | 24270                   | 162                     | 75                                      | 137                       | 146                         | 177                         | 138                      | 159                         | 227                         |
| HDO 100 3   | 28.3  | 53                                     | 24080                   | 142                     | 77                                      | 139                       | 148                         | —                           | 140                      | 161                         | —                           |
| HDO 100 3   | 31.5  | 48                                     | 24140                   | 128                     | 78                                      | 140                       | 149                         | —                           | 141                      | 162                         | —                           |
| HDO 100 3   | 36.0  | 42                                     | 25230                   | 117                     | 79                                      | 141                       | 150                         | —                           | 142                      | 163                         | —                           |
| HDO 100 3   | 40.0  | 38                                     | 24020                   | 100                     | 79                                      | 141                       | 150                         | —                           | 142                      | 163                         | —                           |
| HDO 100 3   | 43.9  | 34                                     | 25580                   | 97                      | 83                                      | 145                       | 154                         | —                           | 146                      | 167                         | —                           |
| HDO 100 3   | 48.8  | 31                                     | 23930                   | 82                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 55.8  | 26.9                                   | 25640                   | 77                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 62.0  | 24.2                                   | 23830                   | 64                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 67.5  | 22.2                                   | 22260                   | 55                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 70.8  | 21.2                                   | 25930                   | 62                      | 62                                      | 109                       | 117                         | —                           | 110                      | 128                         | —                           |
| HDO 100 4   | 78.7  | 19.1                                   | 24100                   | 52                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 90.0  | 16.7                                   | 26910                   | 51                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 100.0 | 15.0                                   | 24880                   | 42                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 111.4 | 13.5                                   | 27820                   | 43                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 123.8 | 12.1                                   | 24880                   | 34                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 139.8 | 10.7                                   | 28210                   | 34                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 160.0 | 9.4                                    | 24880                   | 26                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 178.2 | 8.4                                    | 28210                   | 27                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 198.0 | 7.6                                    | 24880                   | 21                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 223.7 | 6.7                                    | 28210                   | 21                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 248.6 | 6.0                                    | 24880                   | 17.0                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 284.4 | 5.3                                    | 28210                   | 16.9                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 316.0 | 4.7                                    | 25080                   | 13.5                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 344.2 | 4.4                                    | 23870                   | 11.8                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |

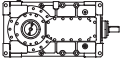
\*  BONFIGLIOLI  
TECHNICAL SERVICE

— Thermal verification not necessary



**HDO 100**

$n_1 = 1200 \text{ min}^{-1}$

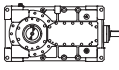
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 100 2   | 5.8   | 206                                    | 16030                   | 361                     | *                      | 241                       | 305                         | 383                         | 218                      | 246                         | 340                         |
| HDO 100 2   | 6.5   | 186                                    | 18260                   | 370                     | *                      | 243                       | 307                         | 385                         | 220                      | 248                         | 342                         |
| HDO 100 2   | 7.0   | 170                                    | 18970                   | 353                     | *                      | 245                       | 309                         | 387                         | 222                      | 250                         | 344                         |
| HDO 100 2   | 8.0   | 150                                    | 18570                   | 304                     | 137                    | 248                       | 312                         | —                           | 225                      | 253                         | 347                         |
| HDO 100 2   | 8.7   | 138                                    | 19200                   | 288                     | 138                    | 249                       | 313                         | —                           | 226                      | 254                         | 348                         |
| HDO 100 2   | 10.0  | 120                                    | 18800                   | 246                     | 144                    | 255                       | 319                         | —                           | 232                      | 260                         | —                           |
| HDO 100 2   | 10.9  | 110                                    | 19490                   | 234                     | 145                    | 256                       | 320                         | —                           | 233                      | 261                         | —                           |
| HDO 100 2   | 12.4  | 97                                     | 19220                   | 203                     | 148                    | 259                       | 323                         | —                           | 236                      | 264                         | —                           |
| HDO 100 2   | 13.5  | 89                                     | 19970                   | 193                     | 149                    | 260                       | 324                         | —                           | 237                      | 265                         | —                           |
| HDO 100 3   | 14.0  | 86                                     | 21640                   | 206                     | 104                    | 180                       | 231                         | —                           | 167                      | 188                         | 256                         |
| HDO 100 3   | 15.6  | 77                                     | 23750                   | 204                     | 105                    | 181                       | 232                         | —                           | 168                      | 189                         | 257                         |
| HDO 100 3   | 17.3  | 69                                     | 22770                   | 176                     | 107                    | 183                       | 234                         | —                           | 170                      | 191                         | —                           |
| HDO 100 3   | 20.2  | 59                                     | 23650                   | 156                     | 111                    | 187                       | 238                         | —                           | 174                      | 195                         | —                           |
| HDO 100 3   | 22.5  | 53                                     | 24640                   | 146                     | 113                    | 189                       | 240                         | —                           | 176                      | 197                         | —                           |
| HDO 100 3   | 25.0  | 48                                     | 24140                   | 129                     | 113                    | 189                       | 240                         | —                           | 176                      | 197                         | —                           |
| HDO 100 3   | 28.3  | 42                                     | 25740                   | 121                     | 115                    | 191                       | 242                         | —                           | 178                      | 199                         | —                           |
| HDO 100 3   | 31.5  | 38                                     | 24030                   | 102                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 36.0  | 33                                     | 25740                   | 95                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 40.0  | 30                                     | 23920                   | 80                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 43.9  | 27.3                                   | 25650                   | 78                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 48.8  | 24.6                                   | 23830                   | 65                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 55.8  | 21.5                                   | 25870                   | 62                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 62.0  | 19.4                                   | 24040                   | 52                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 67.5  | 17.8                                   | 22460                   | 44                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 70.8  | 16.9                                   | 26840                   | 52                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 78.7  | 15.3                                   | 24880                   | 43                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 90.0  | 13.3                                   | 27860                   | 42                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 100.0 | 12.0                                   | 24880                   | 34                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 111.4 | 10.8                                   | 28210                   | 35                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 123.8 | 9.7                                    | 24880                   | 27                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 139.8 | 8.6                                    | 28210                   | 27                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 160.0 | 7.5                                    | 24880                   | 21                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 178.2 | 6.7                                    | 28210                   | 22                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 198.0 | 6.1                                    | 24880                   | 17.1                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 223.7 | 5.4                                    | 28210                   | 17.2                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 248.6 | 4.8                                    | 25020                   | 13.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 284.4 | 4.2                                    | 28210                   | 13.5                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 316.0 | 3.8                                    | 25410                   | 11.0                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 344.2 | 3.5                                    | 23870                   | 9.4                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



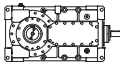
**HDO**

| HDO 100   |       |  |                         |                         | n <sub>1</sub> = 1200 min <sup>-1</sup> |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C                   |                           |                             |                             |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 100 2   | 5.8   | 206                                    | 16030                   | 361                     | *                                       | 168                       | 183                         | 227                         | 174                      | 202                         | 296                         |
| HDO 100 2   | 6.5   | 186                                    | 18260                   | 370                     | *                                       | 170                       | 185                         | 229                         | 176                      | 204                         | 298                         |
| HDO 100 2   | 7.0   | 170                                    | 18970                   | 353                     | *                                       | 171                       | 186                         | 230                         | 177                      | 205                         | 299                         |
| HDO 100 2   | 8.0   | 150                                    | 18570                   | 304                     | *                                       | 175                       | 190                         | 234                         | 181                      | 209                         | 303                         |
| HDO 100 2   | 8.7   | 138                                    | 19200                   | 288                     | *                                       | 176                       | 191                         | 235                         | 182                      | 210                         | 304                         |
| HDO 100 2   | 10.0  | 120                                    | 18800                   | 246                     | 99                                      | 181                       | 196                         | 240                         | 187                      | 215                         | 309                         |
| HDO 100 2   | 10.9  | 110                                    | 19490                   | 234                     | 100                                     | 182                       | 197                         | 241                         | 188                      | 216                         | 310                         |
| HDO 100 2   | 12.4  | 97                                     | 19220                   | 203                     | 104                                     | 186                       | 201                         | 245                         | 192                      | 220                         | —                           |
| HDO 100 2   | 13.5  | 89                                     | 19970                   | 193                     | 105                                     | 187                       | 202                         | —                           | 193                      | 221                         | —                           |
| HDO 100 3   | 14.0  | 86                                     | 21640                   | 206                     | *                                       | 126                       | 141                         | 172                         | 133                      | 154                         | 222                         |
| HDO 100 3   | 15.6  | 77                                     | 23750                   | 204                     | *                                       | 127                       | 142                         | 173                         | 134                      | 155                         | 223                         |
| HDO 100 3   | 17.3  | 69                                     | 22770                   | 176                     | 73                                      | 129                       | 144                         | 175                         | 136                      | 157                         | 225                         |
| HDO 100 3   | 20.2  | 59                                     | 23650                   | 156                     | 77                                      | 133                       | 148                         | 179                         | 140                      | 161                         | —                           |
| HDO 100 3   | 22.5  | 53                                     | 24640                   | 146                     | 79                                      | 135                       | 150                         | —                           | 142                      | 163                         | —                           |
| HDO 100 3   | 25.0  | 48                                     | 24140                   | 129                     | 79                                      | 135                       | 150                         | —                           | 142                      | 163                         | —                           |
| HDO 100 3   | 28.3  | 42                                     | 25740                   | 121                     | 81                                      | 137                       | 152                         | —                           | 144                      | 165                         | —                           |
| HDO 100 3   | 31.5  | 38                                     | 24030                   | 102                     | 81                                      | 137                       | 152                         | —                           | 144                      | 165                         | —                           |
| HDO 100 3   | 36.0  | 33                                     | 25740                   | 95                      | 82                                      | 138                       | 153                         | —                           | 145                      | 166                         | —                           |
| HDO 100 3   | 40.0  | 30                                     | 23920                   | 80                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 43.9  | 27.3                                   | 25650                   | 78                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 48.8  | 24.6                                   | 23830                   | 65                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 55.8  | 21.5                                   | 25870                   | 62                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 62.0  | 19.4                                   | 24040                   | 52                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 67.5  | 17.8                                   | 22460                   | 44                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 70.8  | 16.9                                   | 26840                   | 52                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 78.7  | 15.3                                   | 24880                   | 43                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 90.0  | 13.3                                   | 27860                   | 42                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 100.0 | 12.0                                   | 24880                   | 34                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 111.4 | 10.8                                   | 28210                   | 35                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 123.8 | 9.7                                    | 24880                   | 27                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 139.8 | 8.6                                    | 28210                   | 27                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 160.0 | 7.5                                    | 24880                   | 21                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 178.2 | 6.7                                    | 28210                   | 22                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 198.0 | 6.1                                    | 24880                   | 17.1                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 223.7 | 5.4                                    | 28210                   | 17.2                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 248.6 | 4.8                                    | 25020                   | 13.7                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 284.4 | 4.2                                    | 28210                   | 13.5                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 316.0 | 3.8                                    | 25410                   | 11.0                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 344.2 | 3.5                                    | 23870                   | 9.4                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



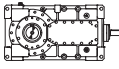
| HDO 100   |       |                                |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                    |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                    |                      |                      |                   |                      |                      |  |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDO 100 2   | 5.8   | 172                            | 16930          | 317            | 136                           | 223                | 311                  | 389                  | 224               | 252                  | 346                  |  |
| HDO 100 2   | 6.5   | 155                            | 19290          | 325            | 138                           | 225                | 313                  | 391                  | 226               | 254                  | 348                  |  |
| HDO 100 2   | 7.0   | 142                            | 20030          | 310            | 139                           | 226                | 314                  | —                    | 227               | 255                  | 349                  |  |
| HDO 100 2   | 8.0   | 125                            | 19610          | 267            | 142                           | 229                | 317                  | —                    | 230               | 258                  | 352                  |  |
| HDO 100 2   | 8.7   | 115                            | 20280          | 254            | 143                           | 230                | 318                  | —                    | 231               | 259                  | —                    |  |
| HDO 100 2   | 10.0  | 100                            | 19850          | 216            | 148                           | 235                | 323                  | —                    | 236               | 264                  | —                    |  |
| HDO 100 2   | 10.9  | 92                             | 20580          | 206            | 148                           | 235                | 323                  | —                    | 236               | 264                  | —                    |  |
| HDO 100 2   | 12.4  | 81                             | 20300          | 178            | 151                           | 238                | 326                  | —                    | 239               | 267                  | —                    |  |
| HDO 100 2   | 13.5  | 74                             | 21090          | 170            | 152                           | 239                | 327                  | —                    | 240               | 268                  | —                    |  |
| HDO 100 3   | 14.0  | 71                             | 22860          | 182            | 108                           | 167                | 235                  | —                    | 171               | 192                  | —                    |  |
| HDO 100 3   | 15.6  | 64                             | 24310          | 174            | 109                           | 168                | 236                  | —                    | 172               | 193                  | —                    |  |
| HDO 100 3   | 17.3  | 58                             | 24060          | 155            | 111                           | 170                | 238                  | —                    | 174               | 195                  | —                    |  |
| HDO 100 3   | 20.2  | 49                             | 24160          | 133            | 114                           | 173                | 241                  | —                    | 177               | 198                  | —                    |  |
| HDO 100 3   | 22.5  | 44                             | 25890          | 128            | 115                           | 174                | 242                  | —                    | 178               | 199                  | —                    |  |
| HDO 100 3   | 25.0  | 40                             | 24050          | 107            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 3   | 28.3  | 35                             | 25770          | 101            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 3   | 31.5  | 32                             | 23940          | 85             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 3   | 36.0  | 27.8                           | 25660          | 79             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 3   | 40.0  | 25.0                           | 23840          | 66             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 3   | 43.9  | 22.8                           | 25640          | 65             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 3   | 48.8  | 20.5                           | 23830          | 54             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 3   | 55.8  | 17.9                           | 26600          | 53             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 3   | 62.0  | 16.1                           | 24740          | 44             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 3   | 67.5  | 14.8                           | 23120          | 38             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 70.8  | 14.1                           | 27610          | 44             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 78.7  | 12.7                           | 24880          | 36             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 90.0  | 11.1                           | 28210          | 36             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 100.0 | 10.0                           | 24880          | 28             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 111.4 | 9.0                            | 28210          | 29             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 123.8 | 8.1                            | 24880          | 23             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 139.8 | 7.2                            | 28210          | 23             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 160.0 | 6.3                            | 24880          | 17.7           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 178.2 | 5.6                            | 28210          | 18.0           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 198.0 | 5.0                            | 24880          | 14.3           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 223.7 | 4.5                            | 28210          | 14.3           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 248.6 | 4.0                            | 25410          | 11.6           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 284.4 | 3.5                            | 28210          | 11.3           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 316.0 | 3.2                            | 25410          | 9.1            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 100 4   | 344.2 | 2.9                            | 23870          | 7.9            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |





# HDO 100

$n_1 = 1000 \text{ min}^{-1}$

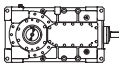
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 100 2   | 5.8   | 172                                    | 16930                   | 317                     | *                      | 156                       | 189                         | 233                         | 180                      | 208                         | 302                         |
| HDO 100 2   | 6.5   | 155                                    | 19290                   | 325                     | *                      | 158                       | 191                         | 235                         | 182                      | 210                         | 304                         |
| HDO 100 2   | 7.0   | 142                                    | 20030                   | 310                     | *                      | 159                       | 192                         | 236                         | 183                      | 211                         | 305                         |
| HDO 100 2   | 8.0   | 125                                    | 19610                   | 267                     | *                      | 162                       | 195                         | 239                         | 186                      | 214                         | 308                         |
| HDO 100 2   | 8.7   | 115                                    | 20280                   | 254                     | *                      | 163                       | 196                         | 240                         | 187                      | 215                         | 309                         |
| HDO 100 2   | 10.0  | 100                                    | 19850                   | 216                     | 103                    | 167                       | 200                         | 244                         | 191                      | 219                         | —                           |
| HDO 100 2   | 10.9  | 92                                     | 20580                   | 206                     | 104                    | 168                       | 201                         | 245                         | 192                      | 220                         | —                           |
| HDO 100 2   | 12.4  | 81                                     | 20300                   | 178                     | 107                    | 171                       | 204                         | —                           | 195                      | 223                         | —                           |
| HDO 100 2   | 13.5  | 74                                     | 21090                   | 170                     | 108                    | 172                       | 205                         | —                           | 196                      | 224                         | —                           |
| HDO 100 3   | 14.0  | 71                                     | 22860                   | 182                     | 74                     | 118                       | 145                         | 176                         | 137                      | 158                         | 226                         |
| HDO 100 3   | 15.6  | 64                                     | 24310                   | 174                     | 75                     | 119                       | 146                         | 177                         | 138                      | 159                         | 227                         |
| HDO 100 3   | 17.3  | 58                                     | 24060                   | 155                     | 77                     | 121                       | 148                         | 179                         | 140                      | 161                         | —                           |
| HDO 100 3   | 20.2  | 49                                     | 24160                   | 133                     | 80                     | 124                       | 151                         | —                           | 143                      | 164                         | —                           |
| HDO 100 3   | 22.5  | 44                                     | 25890                   | 128                     | 81                     | 125                       | 152                         | —                           | 144                      | 165                         | —                           |
| HDO 100 3   | 25.0  | 40                                     | 24050                   | 107                     | 81                     | 125                       | 152                         | —                           | 144                      | 165                         | —                           |
| HDO 100 3   | 28.3  | 35                                     | 25770                   | 101                     | 83                     | 127                       | 154                         | —                           | 146                      | 167                         | —                           |
| HDO 100 3   | 31.5  | 32                                     | 23940                   | 85                      | 83                     | 127                       | 154                         | —                           | 146                      | 167                         | —                           |
| HDO 100 3   | 36.0  | 27.8                                   | 25660                   | 79                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 40.0  | 25.0                                   | 23840                   | 66                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 43.9  | 22.8                                   | 25640                   | 65                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 48.8  | 20.5                                   | 23830                   | 54                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 55.8  | 17.9                                   | 26600                   | 53                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 62.0  | 16.1                                   | 24740                   | 44                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 3   | 67.5  | 14.8                                   | 23120                   | 38                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 70.8  | 14.1                                   | 27610                   | 44                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 78.7  | 12.7                                   | 24880                   | 36                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 90.0  | 11.1                                   | 28210                   | 36                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 100.0 | 10.0                                   | 24880                   | 28                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 111.4 | 9.0                                    | 28210                   | 29                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 123.8 | 8.1                                    | 24880                   | 23                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 139.8 | 7.2                                    | 28210                   | 23                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 160.0 | 6.3                                    | 24880                   | 17.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 178.2 | 5.6                                    | 28210                   | 18.0                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 198.0 | 5.0                                    | 24880                   | 14.3                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 223.7 | 4.5                                    | 28210                   | 14.3                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 248.6 | 4.0                                    | 25410                   | 11.6                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 284.4 | 3.5                                    | 28210                   | 11.3                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 316.0 | 3.2                                    | 25410                   | 9.1                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 100 4   | 344.2 | 2.9                                    | 23870                   | 7.9                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

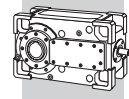
— Thermal verification not necessary



| HDO 110   |       |  |                         |                         | n <sub>1</sub> = 1800 min <sup>-1</sup> |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                             |                             |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 110 2   | 6.4   | 283                                    | 19920                   | 615                     | *                                       | *                         | 254                         | 332                         | *                        | *                           | 289                         |
| HDO 110 2   | 7.0   | 256                                    | 20970                   | 585                     | *                                       | *                         | 258                         | 336                         | *                        | *                           | 293                         |
| HDO 110 2   | 8.1   | 223                                    | 22600                   | 549                     | *                                       | 230                       | 263                         | 341                         | *                        | *                           | 298                         |
| HDO 110 2   | 8.7   | 207                                    | 22470                   | 506                     | *                                       | 234                       | 267                         | 345                         | *                        | 208                         | 302                         |
| HDO 110 2   | 10.0  | 180                                    | 24220                   | 475                     | *                                       | 238                       | 271                         | 349                         | *                        | 212                         | 306                         |
| HDO 110 2   | 10.9  | 165                                    | 23040                   | 415                     | *                                       | 250                       | 283                         | 361                         | 196                      | 224                         | 318                         |
| HDO 110 2   | 12.5  | 144                                    | 25180                   | 395                     | *                                       | 253                       | 286                         | 364                         | 199                      | 227                         | 321                         |
| HDO 110 2   | 13.5  | 133                                    | 21820                   | 317                     | *                                       | 262                       | 295                         | 373                         | 208                      | 236                         | 330                         |
| HDO 110 2   | 15.5  | 116                                    | 23570                   | 298                     | 122                                     | 264                       | 297                         | 375                         | 210                      | 238                         | 332                         |
| HDO 110 3   | 18.9  | 95                                     | 23370                   | 247                     | *                                       | 191                       | 220                         | 277                         | 156                      | 177                         | 245                         |
| HDO 110 3   | 20.9  | 86                                     | 24470                   | 234                     | 94                                      | 192                       | 221                         | 278                         | 157                      | 178                         | 246                         |
| HDO 110 3   | 22.0  | 82                                     | 24090                   | 219                     | 100                                     | 198                       | 227                         | —                           | 163                      | 184                         | 252                         |
| HDO 110 3   | 24.6  | 73                                     | 24360                   | 198                     | 103                                     | 201                       | 230                         | —                           | 166                      | 187                         | 255                         |
| HDO 110 3   | 27.2  | 66                                     | 26510                   | 195                     | 103                                     | 201                       | 230                         | —                           | 166                      | 187                         | 255                         |
| HDO 110 3   | 30.9  | 58                                     | 26450                   | 171                     | 106                                     | 204                       | 233                         | —                           | 169                      | 190                         | —                           |
| HDO 110 3   | 34.3  | 53                                     | 28210                   | 165                     | 107                                     | 205                       | 234                         | —                           | 170                      | 191                         | —                           |
| HDO 110 3   | 39.3  | 46                                     | 27660                   | 141                     | 109                                     | 207                       | 236                         | —                           | 172                      | 193                         | —                           |
| HDO 110 3   | 43.6  | 41                                     | 29500                   | 136                     | 109                                     | 207                       | 236                         | —                           | 172                      | 193                         | —                           |
| HDO 110 3   | 48.0  | 38                                     | 30190                   | 126                     | 114                                     | 212                       | 241                         | —                           | 177                      | 198                         | —                           |
| HDO 110 3   | 53.1  | 34                                     | 29040                   | 109                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 61.0  | 29.5                                   | 29090                   | 96                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 67.5  | 26.7                                   | 29040                   | 86                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 77.5  | 23.2                                   | 26010                   | 67                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 77.4  | 23.3                                   | 29530                   | 78                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 85.7  | 21.0                                   | 29040                   | 69                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 96.7  | 18.6                                   | 28930                   | 61                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 108.9 | 16.5                                   | 29040                   | 54                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 121.7 | 14.8                                   | 30300                   | 51                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 137.1 | 13.1                                   | 28650                   | 43                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 154.7 | 11.6                                   | 30850                   | 41                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 174.3 | 10.3                                   | 29040                   | 34                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 194.7 | 9.2                                    | 31570                   | 33                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 215.7 | 8.3                                    | 29040                   | 28                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 244.4 | 7.4                                    | 31570                   | 26                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 274.2 | 6.6                                    | 29040                   | 22                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 310.7 | 5.8                                    | 29090                   | 19.1                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 344.2 | 5.2                                    | 31790                   | 18.9                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 395.0 | 4.6                                    | 28490                   | 14.7                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |

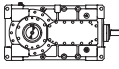
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 110

$n_1 = 1800 \text{ min}^{-1}$

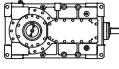
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 110 2   | 6.4   | 283                                    | 19920                   | 615                     | *                      | *                         | *                           | *                           | *                        | *                           | *                           |
| HDO 110 2   | 7.0   | 256                                    | 20970                   | 585                     | *                      | *                         | *                           | *                           | *                        | *                           | 249                         |
| HDO 110 2   | 8.1   | 223                                    | 22600                   | 549                     | *                      | *                         | *                           | *                           | *                        | *                           | 254                         |
| HDO 110 2   | 8.7   | 207                                    | 22470                   | 506                     | *                      | *                         | *                           | *                           | *                        | *                           | 257                         |
| HDO 110 2   | 10.0  | 180                                    | 24220                   | 475                     | *                      | *                         | *                           | 192                         | *                        | *                           | 261                         |
| HDO 110 2   | 10.9  | 165                                    | 23040                   | 415                     | *                      | 168                       | *                           | 205                         | *                        | 180                         | 274                         |
| HDO 110 2   | 12.5  | 144                                    | 25180                   | 395                     | *                      | 171                       | 164                         | 208                         | *                        | 183                         | 277                         |
| HDO 110 2   | 13.5  | 133                                    | 21820                   | 317                     | *                      | 180                       | 173                         | 217                         | 164                      | 192                         | 286                         |
| HDO 110 2   | 15.5  | 116                                    | 23570                   | 298                     | *                      | 182                       | 175                         | 219                         | 166                      | 194                         | 288                         |
| HDO 110 3   | 18.9  | 95                                     | 23370                   | 247                     | *                      | 131                       | 130                         | 161                         | 122                      | 143                         | 211                         |
| HDO 110 3   | 20.9  | 86                                     | 24470                   | 234                     | *                      | 132                       | 131                         | 162                         | 123                      | 144                         | 212                         |
| HDO 110 3   | 22.0  | 82                                     | 24090                   | 219                     | *                      | 138                       | 137                         | 168                         | 129                      | 150                         | 218                         |
| HDO 110 3   | 24.6  | 73                                     | 24360                   | 198                     | *                      | 141                       | 140                         | 171                         | 132                      | 153                         | 221                         |
| HDO 110 3   | 27.2  | 66                                     | 26510                   | 195                     | *                      | 141                       | 140                         | 171                         | 132                      | 153                         | 221                         |
| HDO 110 3   | 30.9  | 58                                     | 26450                   | 171                     | 72                     | 144                       | 143                         | 174                         | 135                      | 156                         | 224                         |
| HDO 110 3   | 34.3  | 53                                     | 28210                   | 165                     | 73                     | 145                       | 144                         | 175                         | 136                      | 157                         | 225                         |
| HDO 110 3   | 39.3  | 46                                     | 27660                   | 141                     | 75                     | 147                       | 146                         | —                           | 138                      | 159                         | —                           |
| HDO 110 3   | 43.6  | 41                                     | 29500                   | 136                     | 75                     | 147                       | 146                         | —                           | 138                      | 159                         | —                           |
| HDO 110 3   | 48.0  | 38                                     | 30190                   | 126                     | 80                     | 152                       | 151                         | —                           | 143                      | 164                         | —                           |
| HDO 110 3   | 53.1  | 34                                     | 29040                   | 109                     | 80                     | 152                       | 151                         | —                           | 143                      | 164                         | —                           |
| HDO 110 3   | 61.0  | 29.5                                   | 29090                   | 96                      | 82                     | 154                       | 153                         | —                           | 145                      | 166                         | —                           |
| HDO 110 3   | 67.5  | 26.7                                   | 29040                   | 86                      | 82                     | 154                       | 153                         | —                           | 145                      | 166                         | —                           |
| HDO 110 3   | 77.5  | 23.2                                   | 26010                   | 67                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 77.4  | 23.3                                   | 29530                   | 78                      | 60                     | 114                       | 115                         | —                           | 108                      | 126                         | —                           |
| HDO 110 4   | 85.7  | 21.0                                   | 29040                   | 69                      | 60                     | 114                       | 115                         | —                           | 108                      | 126                         | —                           |
| HDO 110 4   | 96.7  | 18.6                                   | 28930                   | 61                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 108.9 | 16.5                                   | 29040                   | 54                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 121.7 | 14.8                                   | 30300                   | 51                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 137.1 | 13.1                                   | 28650                   | 43                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 154.7 | 11.6                                   | 30850                   | 41                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 174.3 | 10.3                                   | 29040                   | 34                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 194.7 | 9.2                                    | 31570                   | 33                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 215.7 | 8.3                                    | 29040                   | 28                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 244.4 | 7.4                                    | 31570                   | 26                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 274.2 | 6.6                                    | 29040                   | 22                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 310.7 | 5.8                                    | 29090                   | 19.1                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 344.2 | 5.2                                    | 31790                   | 18.9                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 395.0 | 4.6                                    | 28490                   | 14.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

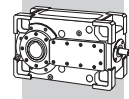
— Thermal verification not necessary



| HDO 110   |       |  |                         |                         | n <sub>1</sub> = 1500 min <sup>-1</sup> |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                             |                             |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR45</sub><br>[kW] | P <sub>TMCR49</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 110 2   | 6.4   | 236                                    | 21050                   | 542                     | *                                       | 222                       | 273                         | 351                         | *                        | *                           | 308                         |
| HDO 110 2   | 7.0   | 213                                    | 22150                   | 515                     | *                                       | 226                       | 277                         | 355                         | *                        | 218                         | 312                         |
| HDO 110 2   | 8.1   | 186                                    | 23880                   | 484                     | *                                       | 230                       | 281                         | 359                         | 194                      | 222                         | 316                         |
| HDO 110 2   | 8.7   | 172                                    | 23730                   | 445                     | *                                       | 232                       | 283                         | 361                         | 196                      | 224                         | 318                         |
| HDO 110 2   | 10.0  | 150                                    | 25580                   | 418                     | *                                       | 235                       | 286                         | 364                         | 199                      | 227                         | 321                         |
| HDO 110 2   | 10.9  | 138                                    | 23040                   | 346                     | *                                       | 245                       | 296                         | 374                         | 209                      | 237                         | 331                         |
| HDO 110 2   | 12.5  | 120                                    | 25180                   | 329                     | *                                       | 247                       | 298                         | 376                         | 211                      | 239                         | 333                         |
| HDO 110 2   | 13.5  | 111                                    | 22480                   | 272                     | 130                                     | 254                       | 305                         | —                           | 218                      | 246                         | 340                         |
| HDO 110 2   | 15.5  | 97                                     | 24600                   | 260                     | 132                                     | 256                       | 307                         | —                           | 220                      | 248                         | 342                         |
| HDO 110 3   | 18.9  | 79                                     | 24850                   | 219                     | 101                                     | 186                       | 228                         | —                           | 164                      | 185                         | 253                         |
| HDO 110 3   | 20.9  | 72                                     | 25980                   | 207                     | 101                                     | 186                       | 228                         | —                           | 164                      | 185                         | 253                         |
| HDO 110 3   | 22.0  | 68                                     | 25740                   | 195                     | 106                                     | 191                       | 233                         | —                           | 169                      | 190                         | 258                         |
| HDO 110 3   | 24.6  | 61                                     | 26070                   | 177                     | 108                                     | 193                       | 235                         | —                           | 171                      | 192                         | —                           |
| HDO 110 3   | 27.2  | 55                                     | 28100                   | 172                     | 109                                     | 194                       | 236                         | —                           | 172                      | 193                         | —                           |
| HDO 110 3   | 30.9  | 48                                     | 28060                   | 151                     | 111                                     | 196                       | 238                         | —                           | 174                      | 195                         | —                           |
| HDO 110 3   | 34.3  | 44                                     | 29540                   | 144                     | 111                                     | 196                       | 238                         | —                           | 174                      | 195                         | —                           |
| HDO 110 3   | 39.3  | 38                                     | 29350                   | 125                     | 113                                     | 198                       | 240                         | —                           | 176                      | 197                         | —                           |
| HDO 110 3   | 43.6  | 34                                     | 29390                   | 113                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 48.0  | 31                                     | 31120                   | 108                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 53.1  | 28.2                                   | 29280                   | 92                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 61.0  | 24.6                                   | 30990                   | 85                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 67.5  | 22.2                                   | 29160                   | 72                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 77.5  | 19.4                                   | 26350                   | 57                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 77.4  | 19.4                                   | 31130                   | 69                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 85.7  | 17.5                                   | 29490                   | 59                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 96.7  | 15.5                                   | 30690                   | 54                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 108.9 | 13.8                                   | 30610                   | 48                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 121.7 | 12.3                                   | 31130                   | 44                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 137.1 | 10.9                                   | 30410                   | 38                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 154.7 | 9.7                                    | 31350                   | 35                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 174.3 | 8.6                                    | 31790                   | 31                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 194.7 | 7.7                                    | 31570                   | 28                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 215.7 | 7.0                                    | 31790                   | 25                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 244.4 | 6.1                                    | 31570                   | 22                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 274.2 | 5.5                                    | 31790                   | 19.7                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 310.7 | 4.8                                    | 31570                   | 17.3                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 344.2 | 4.4                                    | 31790                   | 15.7                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 395.0 | 3.8                                    | 28490                   | 12.3                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |

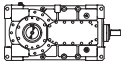
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 110

$n_1 = 1500 \text{ min}^{-1}$

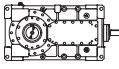
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 110 2   | 6.4   | 236                                    | 21050                   | 542                     | *                      | *                         | *                           | *                           | *                        | *                           | 264                         |
| HDO 110 2   | 7.0   | 213                                    | 22150                   | 515                     | *                      | *                         | *                           | *                           | *                        | *                           | 267                         |
| HDO 110 2   | 8.1   | 186                                    | 23880                   | 484                     | *                      | *                         | *                           | 202                         | *                        | *                           | 271                         |
| HDO 110 2   | 8.7   | 172                                    | 23730                   | 445                     | *                      | *                         | *                           | 205                         | *                        | 180                         | 274                         |
| HDO 110 2   | 10.0  | 150                                    | 25580                   | 418                     | *                      | *                         | *                           | 208                         | *                        | 183                         | 277                         |
| HDO 110 2   | 10.9  | 138                                    | 23040                   | 346                     | *                      | 168                       | 174                         | 218                         | 165                      | 193                         | 287                         |
| HDO 110 2   | 12.5  | 120                                    | 25180                   | 329                     | *                      | 170                       | 176                         | 220                         | 167                      | 195                         | 289                         |
| HDO 110 2   | 13.5  | 111                                    | 22480                   | 272                     | *                      | 177                       | 183                         | 227                         | 174                      | 202                         | 296                         |
| HDO 110 2   | 15.5  | 97                                     | 24600                   | 260                     | *                      | 179                       | 185                         | 229                         | 176                      | 204                         | 298                         |
| HDO 110 3   | 18.9  | 79                                     | 24850                   | 219                     | *                      | 129                       | 138                         | 169                         | 130                      | 151                         | 219                         |
| HDO 110 3   | 20.9  | 72                                     | 25980                   | 207                     | *                      | 129                       | 138                         | 169                         | 130                      | 151                         | 219                         |
| HDO 110 3   | 22.0  | 68                                     | 25740                   | 195                     | *                      | 134                       | 143                         | 174                         | 135                      | 156                         | 224                         |
| HDO 110 3   | 24.6  | 61                                     | 26070                   | 177                     | 74                     | 136                       | 145                         | 176                         | 137                      | 158                         | 226                         |
| HDO 110 3   | 27.2  | 55                                     | 28100                   | 172                     | 75                     | 137                       | 146                         | 177                         | 138                      | 159                         | 227                         |
| HDO 110 3   | 30.9  | 48                                     | 28060                   | 151                     | 77                     | 139                       | 148                         | 179                         | 140                      | 161                         | —                           |
| HDO 110 3   | 34.3  | 44                                     | 29540                   | 144                     | 77                     | 139                       | 148                         | —                           | 140                      | 161                         | —                           |
| HDO 110 3   | 39.3  | 38                                     | 29350                   | 125                     | 79                     | 141                       | 150                         | —                           | 142                      | 163                         | —                           |
| HDO 110 3   | 43.6  | 34                                     | 29390                   | 113                     | 79                     | 141                       | 150                         | —                           | 142                      | 163                         | —                           |
| HDO 110 3   | 48.0  | 31                                     | 31120                   | 108                     | 83                     | 145                       | 154                         | —                           | 146                      | 167                         | —                           |
| HDO 110 3   | 53.1  | 28.2                                   | 29280                   | 92                      | 83                     | 145                       | 154                         | —                           | 146                      | 167                         | —                           |
| HDO 110 3   | 61.0  | 24.6                                   | 30990                   | 85                      | 84                     | 146                       | 155                         | —                           | 147                      | 168                         | —                           |
| HDO 110 3   | 67.5  | 22.2                                   | 29160                   | 72                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 77.5  | 19.4                                   | 26350                   | 57                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 77.4  | 19.4                                   | 31130                   | 69                      | 62                     | 109                       | 117                         | —                           | 110                      | 128                         | —                           |
| HDO 110 4   | 85.7  | 17.5                                   | 29490                   | 59                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 96.7  | 15.5                                   | 30690                   | 54                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 108.9 | 13.8                                   | 30610                   | 48                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 121.7 | 12.3                                   | 31130                   | 44                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 137.1 | 10.9                                   | 30410                   | 38                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 154.7 | 9.7                                    | 31350                   | 35                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 174.3 | 8.6                                    | 31790                   | 31                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 194.7 | 7.7                                    | 31570                   | 28                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 215.7 | 7.0                                    | 31790                   | 25                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 244.4 | 6.1                                    | 31570                   | 22                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 274.2 | 5.5                                    | 31790                   | 19.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 310.7 | 4.8                                    | 31570                   | 17.3                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 344.2 | 4.4                                    | 31790                   | 15.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 395.0 | 3.8                                    | 28490                   | 12.3                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



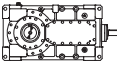
| HDO 110   |       |                               |                |                | $n_1 = 1200 \text{ min}^{-1}$ |                    |                      |                      |                   |                      |                      |  |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                    |                      |                      |                   |                      |                      |  |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDO 110 2   | 6.4   | 189                           | 22220          | 458            | *                             | 224                | 288                  | 366                  | 201               | 229                  | 323                  |  |
| HDO 110 2   | 7.0   | 170                           | 23580          | 438            | *                             | 226                | 290                  | 368                  | 203               | 231                  | 325                  |  |
| HDO 110 2   | 8.1   | 149                           | 25530          | 414            | *                             | 229                | 293                  | 371                  | 206               | 234                  | 328                  |  |
| HDO 110 2   | 8.7   | 138                           | 23790          | 357            | *                             | 232                | 296                  | 374                  | 209               | 237                  | 331                  |  |
| HDO 110 2   | 10.0  | 120                           | 25960          | 340            | *                             | 234                | 298                  | 376                  | 211               | 239                  | 333                  |  |
| HDO 110 2   | 10.9  | 110                           | 23040          | 277            | 130                           | 241                | 305                  | —                    | 218               | 246                  | 340                  |  |
| HDO 110 2   | 12.5  | 96                            | 25180          | 264            | 132                           | 243                | 307                  | —                    | 220               | 248                  | 342                  |  |
| HDO 110 2   | 13.5  | 89                            | 22480          | 218            | 138                           | 249                | 313                  | —                    | 226               | 254                  | —                    |  |
| HDO 110 2   | 15.5  | 77                            | 24600          | 208            | 139                           | 250                | 314                  | —                    | 227               | 255                  | —                    |  |
| HDO 110 3   | 18.9  | 63                            | 26570          | 188            | 106                           | 182                | 233                  | —                    | 169               | 190                  | —                    |  |
| HDO 110 3   | 20.9  | 57                            | 27780          | 177            | 107                           | 183                | 234                  | —                    | 170               | 191                  | —                    |  |
| HDO 110 3   | 22.0  | 54                            | 27660          | 168            | 110                           | 186                | 237                  | —                    | 173               | 194                  | —                    |  |
| HDO 110 3   | 24.6  | 49                            | 27990          | 152            | 112                           | 188                | 239                  | —                    | 175               | 196                  | —                    |  |
| HDO 110 3   | 27.2  | 44                            | 29540          | 145            | 112                           | 188                | 239                  | —                    | 175               | 196                  | —                    |  |
| HDO 110 3   | 30.9  | 39                            | 30000          | 129            | 114                           | 190                | 241                  | —                    | 177               | 198                  | —                    |  |
| HDO 110 3   | 34.3  | 35                            | 29400          | 115            | 114                           | 190                | 241                  | —                    | 177               | 198                  | —                    |  |
| HDO 110 3   | 39.3  | 31                            | 31100          | 106            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 43.6  | 27.5                          | 29270          | 90             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 48.0  | 25.0                          | 30990          | 86             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 53.1  | 22.6                          | 29160          | 73             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 61.0  | 19.7                          | 31260          | 68             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 67.5  | 17.8                          | 29420          | 58             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 77.5  | 15.5                          | 26590          | 46             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 77.4  | 15.5                          | 31130          | 55             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 85.7  | 14.0                          | 30530          | 49             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 96.7  | 12.4                          | 30740          | 43             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 108.9 | 11.0                          | 31710          | 40             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 121.7 | 9.9                           | 31130          | 35             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 137.1 | 8.8                           | 31790          | 32             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 154.7 | 7.8                           | 31350          | 28             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 174.3 | 6.9                           | 31790          | 25             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 194.7 | 6.2                           | 31570          | 22             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 215.7 | 5.6                           | 31790          | 20             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 244.4 | 4.9                           | 31570          | 17.6           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 274.2 | 4.4                           | 31790          | 15.8           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 310.7 | 3.9                           | 31570          | 13.8           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 344.2 | 3.5                           | 31790          | 12.6           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 395.0 | 3.0                           | 28490          | 9.8            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



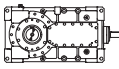
**HDO**

| HDO 110   |       |  |                         |                         | n <sub>1</sub> = 1200 min <sup>-1</sup> |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C                   |                           |                             |                             |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 110 2   | 6.4   | 189                                    | 22220                   | 458                     | *                                       | *                         | *                           | 210                         | *                        | 185                         | 279                         |
| HDO 110 2   | 7.0   | 170                                    | 23580                   | 438                     | *                                       | *                         | *                           | 212                         | *                        | 187                         | 281                         |
| HDO 110 2   | 8.1   | 149                                    | 25530                   | 414                     | *                                       | *                         | 171                         | 215                         | *                        | 190                         | 284                         |
| HDO 110 2   | 8.7   | 138                                    | 23790                   | 357                     | *                                       | 158                       | 173                         | 217                         | 164                      | 192                         | 286                         |
| HDO 110 2   | 10.0  | 120                                    | 25960                   | 340                     | *                                       | 161                       | 176                         | 220                         | 167                      | 195                         | 289                         |
| HDO 110 2   | 10.9  | 110                                    | 23040                   | 277                     | *                                       | 168                       | 183                         | 227                         | 174                      | 202                         | 296                         |
| HDO 110 2   | 12.5  | 96                                     | 25180                   | 264                     | *                                       | 170                       | 185                         | 229                         | 176                      | 204                         | 298                         |
| HDO 110 2   | 13.5  | 89                                     | 22480                   | 218                     | 93                                      | 175                       | 190                         | 234                         | 181                      | 209                         | 303                         |
| HDO 110 2   | 15.5  | 77                                     | 24600                   | 208                     | 95                                      | 177                       | 192                         | 236                         | 183                      | 211                         | —                           |
| HDO 110 3   | 18.9  | 63                                     | 26570                   | 188                     | *                                       | 128                       | 143                         | 174                         | 135                      | 156                         | 224                         |
| HDO 110 3   | 20.9  | 57                                     | 27780                   | 177                     | 73                                      | 129                       | 144                         | 175                         | 136                      | 157                         | 225                         |
| HDO 110 3   | 22.0  | 54                                     | 27660                   | 168                     | 76                                      | 132                       | 147                         | 178                         | 139                      | 160                         | 228                         |
| HDO 110 3   | 24.6  | 49                                     | 27990                   | 152                     | 78                                      | 134                       | 149                         | 180                         | 141                      | 162                         | —                           |
| HDO 110 3   | 27.2  | 44                                     | 29540                   | 145                     | 78                                      | 134                       | 149                         | —                           | 141                      | 162                         | —                           |
| HDO 110 3   | 30.9  | 39                                     | 30000                   | 129                     | 80                                      | 136                       | 151                         | —                           | 143                      | 164                         | —                           |
| HDO 110 3   | 34.3  | 35                                     | 29400                   | 115                     | 80                                      | 136                       | 151                         | —                           | 143                      | 164                         | —                           |
| HDO 110 3   | 39.3  | 31                                     | 31100                   | 106                     | 82                                      | 138                       | 153                         | —                           | 145                      | 166                         | —                           |
| HDO 110 3   | 43.6  | 27.5                                   | 29270                   | 90                      | 82                                      | 138                       | 153                         | —                           | 145                      | 166                         | —                           |
| HDO 110 3   | 48.0  | 25.0                                   | 30990                   | 86                      | 85                                      | 141                       | 156                         | —                           | 148                      | 169                         | —                           |
| HDO 110 3   | 53.1  | 22.6                                   | 29160                   | 73                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 61.0  | 19.7                                   | 31260                   | 68                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 67.5  | 17.8                                   | 29420                   | 58                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 77.5  | 15.5                                   | 26590                   | 46                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 77.4  | 15.5                                   | 31130                   | 55                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 85.7  | 14.0                                   | 30530                   | 49                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 96.7  | 12.4                                   | 30740                   | 43                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 108.9 | 11.0                                   | 31710                   | 40                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 121.7 | 9.9                                    | 31130                   | 35                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 137.1 | 8.8                                    | 31790                   | 32                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 154.7 | 7.8                                    | 31350                   | 28                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 174.3 | 6.9                                    | 31790                   | 25                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 194.7 | 6.2                                    | 31570                   | 22                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 215.7 | 5.6                                    | 31790                   | 20                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 244.4 | 4.9                                    | 31570                   | 17.6                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 274.2 | 4.4                                    | 31790                   | 15.8                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 310.7 | 3.9                                    | 31570                   | 13.8                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 344.2 | 3.5                                    | 31790                   | 12.6                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 395.0 | 3.0                                    | 28490                   | 9.8                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDO 110   |       |                                |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                    |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                    |                      |                      |                   |                      |                      |  |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDO 110 2   | 6.4   | 157                            | 22220          | 381            | *                             | 210                | 298                  | 376                  | 211               | 239                  | 333                  |  |
| HDO 110 2   | 7.0   | 142                            | 23580          | 365            | *                             | 212                | 300                  | 378                  | 213               | 241                  | 335                  |  |
| HDO 110 2   | 8.1   | 124                            | 25740          | 347            | *                             | 214                | 302                  | 380                  | 215               | 243                  | 337                  |  |
| HDO 110 2   | 8.7   | 115                            | 23790          | 298            | 129                           | 216                | 304                  | —                    | 217               | 245                  | 339                  |  |
| HDO 110 2   | 10.0  | 100                            | 25960          | 283            | 131                           | 218                | 306                  | —                    | 219               | 247                  | 341                  |  |
| HDO 110 2   | 10.9  | 92                             | 23040          | 231            | 137                           | 224                | 312                  | —                    | 225               | 253                  | —                    |  |
| HDO 110 2   | 12.5  | 80                             | 25180          | 220            | 138                           | 225                | 313                  | —                    | 226               | 254                  | —                    |  |
| HDO 110 2   | 13.5  | 74                             | 22480          | 181            | 143                           | 230                | 318                  | —                    | 231               | 259                  | —                    |  |
| HDO 110 2   | 15.5  | 65                             | 24600          | 173            | 144                           | 231                | 319                  | —                    | 232               | 260                  | —                    |  |
| HDO 110 3   | 18.9  | 53                             | 28060          | 165            | 110                           | 169                | 237                  | —                    | 173               | 194                  | —                    |  |
| HDO 110 3   | 20.9  | 48                             | 29340          | 156            | 110                           | 169                | 237                  | —                    | 173               | 194                  | —                    |  |
| HDO 110 3   | 22.0  | 45                             | 29370          | 148            | 113                           | 172                | 240                  | —                    | 176               | 197                  | —                    |  |
| HDO 110 3   | 24.6  | 41                             | 29750          | 135            | 115                           | 174                | 242                  | —                    | 178               | 199                  | —                    |  |
| HDO 110 3   | 27.2  | 37                             | 29430          | 120            | 115                           | 174                | 242                  | —                    | 178               | 199                  | —                    |  |
| HDO 110 3   | 30.9  | 32                             | 31130          | 112            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 34.3  | 29.2                           | 29300          | 95             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 39.3  | 25.4                           | 31000          | 88             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 43.6  | 23.0                           | 29170          | 74             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 48.0  | 20.9                           | 30980          | 72             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 53.1  | 18.8                           | 29160          | 61             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 61.0  | 16.4                           | 31460          | 57             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 67.5  | 14.8                           | 30260          | 50             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 3   | 77.5  | 12.9                           | 27370          | 39             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 77.4  | 12.9                           | 31130          | 46             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 85.7  | 11.7                           | 31420          | 42             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 96.7  | 10.3                           | 30740          | 36             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 108.9 | 9.2                            | 31790          | 33             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 121.7 | 8.2                            | 31130          | 29             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 137.1 | 7.3                            | 31790          | 26             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 154.7 | 6.5                            | 31350          | 23             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 174.3 | 5.7                            | 31790          | 21             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 194.7 | 5.1                            | 31570          | 18.4           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 215.7 | 4.6                            | 31790          | 16.7           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 244.4 | 4.1                            | 31570          | 14.7           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 274.2 | 3.6                            | 31790          | 13.2           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 310.7 | 3.2                            | 31570          | 11.5           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 344.2 | 2.9                            | 31790          | 10.5           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 110 4   | 395.0 | 2.5                            | 28490          | 8.2            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |

\*  BONFIGLIOLI TECHNICAL SERVICE

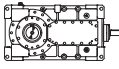
— Thermal verification not necessary





# HDO 110

$n_1 = 1000 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 110 2   | 6.4   | 157                                    | 22220                   | 381                     | *                      | *                         | 175                         | 219                         | 166                      | 194                         | 288                         |
| HDO 110 2   | 7.0   | 142                                    | 23580                   | 365                     | *                      | *                         | 178                         | 222                         | 169                      | 197                         | 291                         |
| HDO 110 2   | 8.1   | 124                                    | 25740                   | 347                     | *                      | 147                       | 180                         | 224                         | 171                      | 199                         | 293                         |
| HDO 110 2   | 8.7   | 115                                    | 23790                   | 298                     | *                      | 149                       | 182                         | 226                         | 173                      | 201                         | 295                         |
| HDO 110 2   | 10.0  | 100                                    | 25960                   | 283                     | *                      | 151                       | 184                         | 228                         | 175                      | 203                         | 297                         |
| HDO 110 2   | 10.9  | 92                                     | 23040                   | 231                     | 93                     | 157                       | 190                         | 234                         | 181                      | 209                         | 303                         |
| HDO 110 2   | 12.5  | 80                                     | 25180                   | 220                     | 94                     | 158                       | 191                         | 235                         | 182                      | 210                         | 304                         |
| HDO 110 2   | 13.5  | 74                                     | 22480                   | 181                     | 98                     | 162                       | 195                         | —                           | 186                      | 214                         | —                           |
| HDO 110 2   | 15.5  | 65                                     | 24600                   | 173                     | 99                     | 163                       | 196                         | —                           | 187                      | 215                         | —                           |
| HDO 110 3   | 18.9  | 53                                     | 28060                   | 165                     | 76                     | 120                       | 147                         | 178                         | 139                      | 160                         | 228                         |
| HDO 110 3   | 20.9  | 48                                     | 29340                   | 156                     | 76                     | 120                       | 147                         | 178                         | 139                      | 160                         | —                           |
| HDO 110 3   | 22.0  | 45                                     | 29370                   | 148                     | 79                     | 123                       | 150                         | —                           | 142                      | 163                         | —                           |
| HDO 110 3   | 24.6  | 41                                     | 29750                   | 135                     | 81                     | 125                       | 152                         | —                           | 144                      | 165                         | —                           |
| HDO 110 3   | 27.2  | 37                                     | 29430                   | 120                     | 81                     | 125                       | 152                         | —                           | 144                      | 165                         | —                           |
| HDO 110 3   | 30.9  | 32                                     | 31130                   | 112                     | 82                     | 126                       | 153                         | —                           | 145                      | 166                         | —                           |
| HDO 110 3   | 34.3  | 29.2                                   | 29300                   | 95                      | 83                     | 127                       | 154                         | —                           | 146                      | 167                         | —                           |
| HDO 110 3   | 39.3  | 25.4                                   | 31000                   | 88                      | 84                     | 128                       | 155                         | —                           | 147                      | 168                         | —                           |
| HDO 110 3   | 43.6  | 23.0                                   | 29170                   | 74                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 48.0  | 20.9                                   | 30980                   | 72                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 53.1  | 18.8                                   | 29160                   | 61                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 61.0  | 16.4                                   | 31460                   | 57                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 67.5  | 14.8                                   | 30260                   | 50                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 3   | 77.5  | 12.9                                   | 27370                   | 39                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 77.4  | 12.9                                   | 31130                   | 46                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 85.7  | 11.7                                   | 31420                   | 42                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 96.7  | 10.3                                   | 30740                   | 36                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 108.9 | 9.2                                    | 31790                   | 33                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 121.7 | 8.2                                    | 31130                   | 29                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 137.1 | 7.3                                    | 31790                   | 26                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 154.7 | 6.5                                    | 31350                   | 23                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 174.3 | 5.7                                    | 31790                   | 21                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 194.7 | 5.1                                    | 31570                   | 18.4                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 215.7 | 4.6                                    | 31790                   | 16.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 244.4 | 4.1                                    | 31570                   | 14.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 274.2 | 3.6                                    | 31790                   | 13.2                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 310.7 | 3.2                                    | 31570                   | 11.5                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 344.2 | 2.9                                    | 31790                   | 10.5                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 110 4   | 395.0 | 2.5                                    | 28490                   | 8.2                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |

HDO

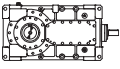
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 120

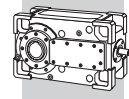
$n_1 = 1800 \text{ min}^{-1}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                    |                      |                      |                   |                      |                      |
|---|-------|-------------------------------|----------------|----------------|--------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDO 120 2   | 6.6   | 274                           | 26000          | 777            | *                        | *                  | *                    | 347                  | *                 | *                    | *                    |
| HDO 120 2   | 7.2   | 252                           | 28310          | 777            | *                        | *                  | *                    | 352                  | *                 | *                    | *                    |
| HDO 120 2   | 8.1   | 223                           | 31120          | 756            | *                        | *                  | *                    | 358                  | *                 | *                    | 315                  |
| HDO 120 2   | 8.9   | 203                           | 32170          | 713            | *                        | *                  | *                    | 343                  | *                 | *                    | 300                  |
| HDO 120 2   | 10.0  | 180                           | 33950          | 666            | *                        | *                  | 269                  | 347                  | *                 | *                    | 304                  |
| HDO 120 2   | 11.1  | 163                           | 33350          | 591            | *                        | 287                | 293                  | 371                  | *                 | *                    | 328                  |
| HDO 120 2   | 12.5  | 144                           | 35500          | 557            | *                        | 290                | 296                  | 374                  | *                 | 237                  | 331                  |
| HDO 120 2   | 13.7  | 131                           | 32500          | 465            | *                        | 304                | 310                  | 388                  | 223               | 251                  | 345                  |
| HDO 120 2   | 15.5  | 116                           | 34640          | 439            | *                        | 307                | 313                  | 391                  | 226               | 254                  | 348                  |
| HDO 120 3   | 17.3  | 104                           | 29590          | 343            | *                        | 225                | 236                  | 293                  | 172               | 193                  | 261                  |
| HDO 120 3   | 19.5  | 92                            | 32780          | 337            | *                        | 226                | 237                  | 294                  | 173               | 194                  | 262                  |
| HDO 120 3   | 21.8  | 83                            | 31460          | 289            | 117                      | 233                | 244                  | 301                  | 180               | 201                  | 269                  |
| HDO 120 3   | 24.6  | 73                            | 32560          | 265            | 121                      | 237                | 248                  | 305                  | 184               | 205                  | 273                  |
| HDO 120 3   | 28.3  | 64                            | 31840          | 225            | 128                      | 244                | 255                  | —                    | 191               | 212                  | 280                  |
| HDO 120 3   | 32.0  | 56                            | 35200          | 221            | 131                      | 247                | 258                  | —                    | 194               | 215                  | 283                  |
| HDO 120 3   | 34.8  | 52                            | 35750          | 206            | 132                      | 248                | 259                  | —                    | 195               | 216                  | —                    |
| HDO 120 3   | 41.2  | 44                            | 37510          | 182            | 135                      | 251                | 262                  | —                    | 198               | 219                  | —                    |
| HDO 120 3   | 44.9  | 40                            | 38110          | 170            | 135                      | 251                | 262                  | —                    | 198               | 219                  | —                    |
| HDO 120 3   | 49.5  | 36                            | 34480          | 139            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 3   | 53.9  | 33                            | 37560          | 139            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 3   | 63.9  | 28.2                          | 38880          | 122            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 3   | 69.6  | 25.9                          | 38500          | 111            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 3   | 78.6  | 22.9                          | 34920          | 89             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 87.0  | 20.7                          | 33220          | 78             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 103.1 | 17.5                          | 35970          | 71             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 112.3 | 16.0                          | 38500          | 70             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 125.7 | 14.3                          | 36240          | 59             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 136.9 | 13.2                          | 38500          | 57             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 162.2 | 11.1                          | 38880          | 49             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 179.7 | 10.0                          | 37560          | 43             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 201.1 | 9.0                           | 38880          | 40             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 219.0 | 8.2                           | 38500          | 36             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 252.4 | 7.1                           | 38880          | 31             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 282.7 | 6.4                           | 38500          | 28             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 325.9 | 5.5                           | 38880          | 24             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 354.9 | 5.1                           | 40920          | 24             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 120 4   | 400.6 | 4.5                           | 37730          | 19.2           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |

HDO

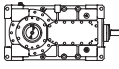
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 120

$n_1 = 1800 \text{ min}^{-1}$

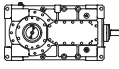
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 120 2   | 6.6   | 274                                    | 26000                   | 777                     | *                      | *                         | *                           | *                           | *                        | *                           | *                           |
| HDO 120 2   | 7.2   | 252                                    | 28310                   | 777                     | *                      | *                         | *                           | *                           | *                        | *                           | *                           |
| HDO 120 2   | 8.1   | 223                                    | 31120                   | 756                     | *                      | *                         | *                           | *                           | *                        | *                           | *                           |
| HDO 120 2   | 8.9   | 203                                    | 32170                   | 713                     | *                      | *                         | *                           | *                           | *                        | *                           | *                           |
| HDO 120 2   | 10.0  | 180                                    | 33950                   | 666                     | *                      | *                         | *                           | *                           | *                        | *                           | *                           |
| HDO 120 2   | 11.1  | 163                                    | 33350                   | 591                     | *                      | *                         | *                           | *                           | *                        | *                           | 273                         |
| HDO 120 2   | 12.5  | 144                                    | 35500                   | 557                     | *                      | *                         | *                           | *                           | *                        | *                           | 276                         |
| HDO 120 2   | 13.7  | 131                                    | 32500                   | 465                     | *                      | 205                       | *                           | 222                         | *                        | 197                         | 291                         |
| HDO 120 2   | 15.5  | 116                                    | 34640                   | 439                     | *                      | 207                       | 180                         | 224                         | *                        | 199                         | 293                         |
| HDO 120 3   | 17.3  | 104                                    | 29590                   | 343                     | *                      | 152                       | 138                         | 169                         | *                        | 151                         | 219                         |
| HDO 120 3   | 19.5  | 92                                     | 32780                   | 337                     | *                      | 154                       | 140                         | 171                         | *                        | 153                         | 221                         |
| HDO 120 3   | 21.8  | 83                                     | 31460                   | 289                     | *                      | 160                       | 146                         | 177                         | 138                      | 159                         | 227                         |
| HDO 120 3   | 24.6  | 73                                     | 32560                   | 265                     | *                      | 164                       | 150                         | 181                         | 142                      | 163                         | 231                         |
| HDO 120 3   | 28.3  | 64                                     | 31840                   | 225                     | *                      | 171                       | 157                         | 188                         | 149                      | 170                         | 238                         |
| HDO 120 3   | 32.0  | 56                                     | 35200                   | 221                     | 89                     | 174                       | 160                         | 191                         | 152                      | 173                         | 241                         |
| HDO 120 3   | 34.8  | 52                                     | 35750                   | 206                     | 90                     | 175                       | 161                         | 192                         | 153                      | 174                         | 242                         |
| HDO 120 3   | 41.2  | 44                                     | 37510                   | 182                     | 93                     | 178                       | 164                         | 195                         | 156                      | 177                         | 245                         |
| HDO 120 3   | 44.9  | 40                                     | 38110                   | 170                     | 94                     | 179                       | 165                         | 196                         | 157                      | 178                         | —                           |
| HDO 120 3   | 49.5  | 36                                     | 34480                   | 139                     | 99                     | 184                       | 170                         | —                           | 162                      | 183                         | —                           |
| HDO 120 3   | 53.9  | 33                                     | 37560                   | 139                     | 99                     | 184                       | 170                         | —                           | 162                      | 183                         | —                           |
| HDO 120 3   | 63.9  | 28.2                                   | 38880                   | 122                     | 101                    | 186                       | 172                         | —                           | 164                      | 185                         | —                           |
| HDO 120 3   | 69.6  | 25.9                                   | 38500                   | 111                     | 101                    | 186                       | 172                         | —                           | 164                      | 185                         | —                           |
| HDO 120 3   | 78.6  | 22.9                                   | 34920                   | 89                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 87.0  | 20.7                                   | 33220                   | 78                      | 75                     | 140                       | 130                         | —                           | 123                      | 141                         | —                           |
| HDO 120 4   | 103.1 | 17.5                                   | 35970                   | 71                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 112.3 | 16.0                                   | 38500                   | 70                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 125.7 | 14.3                                   | 36240                   | 59                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 136.9 | 13.2                                   | 38500                   | 57                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 162.2 | 11.1                                   | 38880                   | 49                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 179.7 | 10.0                                   | 37560                   | 43                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 201.1 | 9.0                                    | 38880                   | 40                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 219.0 | 8.2                                    | 38500                   | 36                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 252.4 | 7.1                                    | 38880                   | 31                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 282.7 | 6.4                                    | 38500                   | 28                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 325.9 | 5.5                                    | 38880                   | 24                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 354.9 | 5.1                                    | 40920                   | 24                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 400.6 | 4.5                                    | 37730                   | 19.2                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



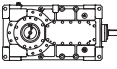
| HDO 120   |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                    |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|   |       |                                |                |                | $t_a = 20^\circ\text{C}$      |                    |                      |                      |                   |                      |                      |  |
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDO 120 2   | 6.6   | 228                            | 27460          | 684            | *                             | *                  | 294                  | 372                  | *                 | *                    | 329                  |  |
| HDO 120 2   | 7.2   | 210                            | 29900          | 684            | *                             | *                  | 298                  | 376                  | *                 | *                    | 333                  |  |
| HDO 120 2   | 8.1   | 186                            | 32870          | 666            | *                             | 274                | 302                  | 380                  | *                 | *                    | 337                  |  |
| HDO 120 2   | 8.9   | 169                            | 33980          | 627            | *                             | 263                | 291                  | 369                  | *                 | *                    | 326                  |  |
| HDO 120 2   | 10.0  | 150                            | 35860          | 586            | *                             | 266                | 294                  | 372                  | *                 | 235                  | 329                  |  |
| HDO 120 2   | 11.1  | 135                            | 33350          | 493            | *                             | 284                | 312                  | 390                  | 225               | 253                  | 347                  |  |
| HDO 120 2   | 12.5  | 120                            | 35500          | 464            | *                             | 287                | 315                  | 393                  | 228               | 256                  | 350                  |  |
| HDO 120 2   | 13.7  | 109                            | 32500          | 387            | *                             | 298                | 326                  | 404                  | 239               | 267                  | 361                  |  |
| HDO 120 2   | 15.5  | 97                             | 34640          | 365            | 153                           | 300                | 328                  | 406                  | 241               | 269                  | 363                  |  |
| HDO 120 3   | 17.3  | 87                             | 31620          | 306            | *                             | 221                | 247                  | 304                  | 183               | 204                  | 272                  |  |
| HDO 120 3   | 19.5  | 77                             | 34750          | 298            | 121                           | 222                | 248                  | 305                  | 184               | 205                  | 273                  |  |
| HDO 120 3   | 21.8  | 69                             | 33390          | 256            | 126                           | 227                | 253                  | 310                  | 189               | 210                  | 278                  |  |
| HDO 120 3   | 24.6  | 61                             | 34510          | 234            | 129                           | 230                | 256                  | —                    | 192               | 213                  | 281                  |  |
| HDO 120 3   | 28.3  | 53                             | 33780          | 199            | 134                           | 235                | 261                  | —                    | 197               | 218                  | —                    |  |
| HDO 120 3   | 32.0  | 47                             | 37340          | 195            | 137                           | 238                | 264                  | —                    | 200               | 221                  | —                    |  |
| HDO 120 3   | 34.8  | 43                             | 37920          | 182            | 137                           | 238                | 264                  | —                    | 200               | 221                  | —                    |  |
| HDO 120 3   | 41.2  | 36                             | 39780          | 161            | 140                           | 241                | 267                  | —                    | 203               | 224                  | —                    |  |
| HDO 120 3   | 44.9  | 33                             | 39130          | 145            | 140                           | 241                | 267                  | —                    | 203               | 224                  | —                    |  |
| HDO 120 3   | 49.5  | 30                             | 36900          | 124            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 3   | 53.9  | 27.8                           | 38990          | 121            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 3   | 63.9  | 23.5                           | 40250          | 105            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 3   | 69.6  | 21.5                           | 38800          | 93             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 3   | 78.6  | 19.1                           | 35760          | 76             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 87.0  | 17.2                           | 35210          | 69             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 103.1 | 14.5                           | 38150          | 63             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 112.3 | 13.4                           | 40820          | 62             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 125.7 | 11.9                           | 38460          | 52             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 136.9 | 11.0                           | 40920          | 51             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 162.2 | 9.2                            | 41250          | 43             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 179.7 | 8.3                            | 39850          | 38             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 201.1 | 7.5                            | 41250          | 35             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 219.0 | 6.8                            | 40920          | 32             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 252.4 | 5.9                            | 41250          | 28             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 282.7 | 5.3                            | 40920          | 25             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 325.9 | 4.6                            | 41250          | 22             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 354.9 | 4.2                            | 40920          | 19.6           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 400.6 | 3.7                            | 37730          | 16.0           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



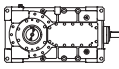
**HDO**

| HDO 120   |       |                               |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                    |                      |                      |                   |                      |                      |  |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                    |                      |                      |                   |                      |                      |  |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDO 120 2   | 6.6   | 228                           | 27460          | 684            | *                             | *                  | *                    | *                    | *                 | *                    | 275                  |  |
| HDO 120 2   | 7.2   | 210                           | 29900          | 684            | *                             | *                  | *                    | *                    | *                 | *                    | 278                  |  |
| HDO 120 2   | 8.1   | 186                           | 32870          | 666            | *                             | *                  | *                    | *                    | *                 | *                    | 283                  |  |
| HDO 120 2   | 8.9   | 169                           | 33980          | 627            | *                             | *                  | *                    | *                    | *                 | *                    | 271                  |  |
| HDO 120 2   | 10.0  | 150                           | 35860          | 586            | *                             | *                  | *                    | *                    | *                 | *                    | 274                  |  |
| HDO 120 2   | 11.1  | 135                           | 33350          | 493            | *                             | *                  | *                    | 224                  | *                 | 199                  | 293                  |  |
| HDO 120 2   | 12.5  | 120                           | 35500          | 464            | *                             | 193                | *                    | 226                  | *                 | 201                  | 295                  |  |
| HDO 120 2   | 13.7  | 109                           | 32500          | 387            | *                             | 204                | 193                  | 237                  | 184               | 212                  | 306                  |  |
| HDO 120 2   | 15.5  | 97                            | 34640          | 365            | *                             | 206                | 195                  | 239                  | 186               | 214                  | 308                  |  |
| HDO 120 3   | 17.3  | 87                            | 31620          | 306            | *                             | 152                | 149                  | 180                  | 141               | 162                  | 230                  |  |
| HDO 120 3   | 19.5  | 77                            | 34750          | 298            | *                             | 153                | 150                  | 181                  | 142               | 163                  | 231                  |  |
| HDO 120 3   | 21.8  | 69                            | 33390          | 256            | *                             | 158                | 155                  | 186                  | 147               | 168                  | 236                  |  |
| HDO 120 3   | 24.6  | 61                            | 34510          | 234            | *                             | 161                | 158                  | 189                  | 150               | 171                  | 239                  |  |
| HDO 120 3   | 28.3  | 53                            | 33780          | 199            | 92                            | 166                | 163                  | 194                  | 155               | 176                  | 244                  |  |
| HDO 120 3   | 32.0  | 47                            | 37340          | 195            | 95                            | 169                | 166                  | 197                  | 158               | 179                  | 247                  |  |
| HDO 120 3   | 34.8  | 43                            | 37920          | 182            | 95                            | 169                | 166                  | 197                  | 158               | 179                  | 247                  |  |
| HDO 120 3   | 41.2  | 36                            | 39780          | 161            | 98                            | 172                | 169                  | —                    | 161               | 182                  | —                    |  |
| HDO 120 3   | 44.9  | 33                            | 39130          | 145            | 98                            | 172                | 169                  | —                    | 161               | 182                  | —                    |  |
| HDO 120 3   | 49.5  | 30                            | 36900          | 124            | 102                           | 176                | 173                  | —                    | 165               | 186                  | —                    |  |
| HDO 120 3   | 53.9  | 27.8                          | 38990          | 121            | 102                           | 176                | 173                  | —                    | 165               | 186                  | —                    |  |
| HDO 120 3   | 63.9  | 23.5                          | 40250          | 105            | 104                           | 178                | 175                  | —                    | 167               | 188                  | —                    |  |
| HDO 120 3   | 69.6  | 21.5                          | 38800          | 93             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 3   | 78.6  | 19.1                          | 35760          | 76             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 87.0  | 17.2                          | 35210          | 69             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 103.1 | 14.5                          | 38150          | 63             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 112.3 | 13.4                          | 40820          | 62             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 125.7 | 11.9                          | 38460          | 52             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 136.9 | 11.0                          | 40920          | 51             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 162.2 | 9.2                           | 41250          | 43             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 179.7 | 8.3                           | 39850          | 38             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 201.1 | 7.5                           | 41250          | 35             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 219.0 | 6.8                           | 40920          | 32             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 252.4 | 5.9                           | 41250          | 28             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 282.7 | 5.3                           | 40920          | 25             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 325.9 | 4.6                           | 41250          | 22             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 354.9 | 4.2                           | 40920          | 19.6           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 400.6 | 3.7                           | 37730          | 16.0           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |

\*  BONFIGLIOLI TECHNICAL SERVICE

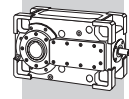
— Thermal verification not necessary



| HDO 120   |       |  |                         |                         | n <sub>1</sub> = 1200 min <sup>-1</sup> |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                             |                             |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 120 2   | 6.6   | 183                                    | 29360                   | 585                     | *                                       | 269                       | 312                         | 390                         | *                        | 253                         | 347                         |
| HDO 120 2   | 7.2   | 168                                    | 31970                   | 585                     | *                                       | 272                       | 315                         | 393                         | *                        | 256                         | 350                         |
| HDO 120 2   | 8.1   | 149                                    | 35120                   | 569                     | *                                       | 276                       | 319                         | 397                         | 232                      | 260                         | 354                         |
| HDO 120 2   | 8.9   | 135                                    | 34440                   | 509                     | *                                       | 267                       | 310                         | 388                         | 223                      | 251                         | 345                         |
| HDO 120 2   | 10.0  | 120                                    | 36600                   | 479                     | *                                       | 269                       | 312                         | 390                         | 225                      | 253                         | 347                         |
| HDO 120 2   | 11.1  | 108                                    | 33350                   | 394                     | *                                       | 283                       | 326                         | 404                         | 239                      | 267                         | 361                         |
| HDO 120 2   | 12.5  | 96                                     | 35500                   | 372                     | 153                                     | 285                       | 328                         | 406                         | 241                      | 269                         | 363                         |
| HDO 120 2   | 13.7  | 87                                     | 32500                   | 310                     | 162                                     | 294                       | 337                         | —                           | 250                      | 278                         | 372                         |
| HDO 120 2   | 15.5  | 77                                     | 34640                   | 292                     | 163                                     | 295                       | 338                         | —                           | 251                      | 279                         | 373                         |
| HDO 120 3   | 17.3  | 70                                     | 32720                   | 253                     | 127                                     | 218                       | 254                         | —                           | 190                      | 211                         | 279                         |
| HDO 120 3   | 19.5  | 62                                     | 35370                   | 242                     | 128                                     | 219                       | 255                         | —                           | 191                      | 212                         | 280                         |
| HDO 120 3   | 21.8  | 55                                     | 35700                   | 219                     | 132                                     | 223                       | 259                         | —                           | 195                      | 216                         | 284                         |
| HDO 120 3   | 24.6  | 49                                     | 36900                   | 200                     | 135                                     | 226                       | 262                         | —                           | 198                      | 219                         | —                           |
| HDO 120 3   | 28.3  | 42                                     | 36120                   | 170                     | 139                                     | 230                       | 266                         | —                           | 202                      | 223                         | —                           |
| HDO 120 3   | 32.0  | 38                                     | 38110                   | 159                     | 141                                     | 232                       | 268                         | —                           | 204                      | 225                         | —                           |
| HDO 120 3   | 34.8  | 34                                     | 39150                   | 150                     | 141                                     | 232                       | 268                         | —                           | 204                      | 225                         | —                           |
| HDO 120 3   | 41.2  | 29.1                                   | 40410                   | 131                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 3   | 44.9  | 26.7                                   | 38960                   | 116                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 3   | 49.5  | 24.2                                   | 37620                   | 101                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 3   | 53.9  | 22.2                                   | 38830                   | 96                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 3   | 63.9  | 18.8                                   | 40680                   | 85                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 3   | 69.6  | 17.2                                   | 39240                   | 75                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 3   | 78.6  | 15.3                                   | 36170                   | 61                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 87.0  | 13.8                                   | 37650                   | 59                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 103.1 | 11.6                                   | 38940                   | 51                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 112.3 | 10.7                                   | 38720                   | 47                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 125.7 | 9.5                                    | 40970                   | 44                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 136.9 | 8.8                                    | 40920                   | 41                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 162.2 | 7.4                                    | 41250                   | 35                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 179.7 | 6.7                                    | 40200                   | 30                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 201.1 | 6.0                                    | 41250                   | 28                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 219.0 | 5.5                                    | 40920                   | 25                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 252.4 | 4.8                                    | 41250                   | 22                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 282.7 | 4.2                                    | 40920                   | 19.7                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 325.9 | 3.7                                    | 41250                   | 17.2                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 354.9 | 3.4                                    | 40920                   | 15.7                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 400.6 | 3.0                                    | 37730                   | 12.8                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |

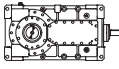
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 120

$n_1 = 1200 \text{ min}^{-1}$

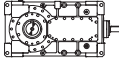
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 120 2   | 6.6   | 183                                    | 29360                   | 585                     | *                      | *                         | *                           | *                           | *                        | *                           | 293                         |
| HDO 120 2   | 7.2   | 168                                    | 31970                   | 585                     | *                      | *                         | *                           | *                           | *                        | *                           | 296                         |
| HDO 120 2   | 8.1   | 149                                    | 35120                   | 569                     | *                      | *                         | *                           | 230                         | *                        | *                           | 299                         |
| HDO 120 2   | 8.9   | 135                                    | 34440                   | 509                     | *                      | *                         | *                           | 221                         | *                        | *                           | 290                         |
| HDO 120 2   | 10.0  | 120                                    | 36600                   | 479                     | *                      | *                         | *                           | 224                         | *                        | 199                         | 293                         |
| HDO 120 2   | 11.1  | 108                                    | 33350                   | 394                     | *                      | 194                       | 194                         | 238                         | 185                      | 213                         | 307                         |
| HDO 120 2   | 12.5  | 96                                     | 35500                   | 372                     | *                      | 196                       | 196                         | 240                         | 187                      | 215                         | 309                         |
| HDO 120 2   | 13.7  | 87                                     | 32500                   | 310                     | *                      | 204                       | 204                         | 248                         | 195                      | 223                         | 317                         |
| HDO 120 2   | 15.5  | 77                                     | 34640                   | 292                     | *                      | 206                       | 206                         | 250                         | 197                      | 225                         | 319                         |
| HDO 120 3   | 17.3  | 70                                     | 32720                   | 253                     | *                      | 153                       | 157                         | 188                         | 149                      | 170                         | 238                         |
| HDO 120 3   | 19.5  | 62                                     | 35370                   | 242                     | *                      | 153                       | 157                         | 188                         | 149                      | 170                         | 238                         |
| HDO 120 3   | 21.8  | 55                                     | 35700                   | 219                     | 90                     | 157                       | 161                         | 192                         | 153                      | 174                         | 242                         |
| HDO 120 3   | 24.6  | 49                                     | 36900                   | 200                     | 93                     | 160                       | 164                         | 195                         | 156                      | 177                         | 245                         |
| HDO 120 3   | 28.3  | 42                                     | 36120                   | 170                     | 97                     | 164                       | 168                         | 199                         | 160                      | 181                         | —                           |
| HDO 120 3   | 32.0  | 38                                     | 38110                   | 159                     | 99                     | 166                       | 170                         | —                           | 162                      | 183                         | —                           |
| HDO 120 3   | 34.8  | 34                                     | 39150                   | 150                     | 99                     | 166                       | 170                         | —                           | 162                      | 183                         | —                           |
| HDO 120 3   | 41.2  | 29.1                                   | 40410                   | 131                     | 101                    | 168                       | 172                         | —                           | 164                      | 185                         | —                           |
| HDO 120 3   | 44.9  | 26.7                                   | 38960                   | 116                     | 101                    | 168                       | 172                         | —                           | 164                      | 185                         | —                           |
| HDO 120 3   | 49.5  | 24.2                                   | 37620                   | 101                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 3   | 53.9  | 22.2                                   | 38830                   | 96                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 3   | 63.9  | 18.8                                   | 40680                   | 85                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 3   | 69.6  | 17.2                                   | 39240                   | 75                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 3   | 78.6  | 15.3                                   | 36170                   | 61                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 87.0  | 13.8                                   | 37650                   | 59                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 103.1 | 11.6                                   | 38940                   | 51                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 112.3 | 10.7                                   | 38720                   | 47                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 125.7 | 9.5                                    | 40970                   | 44                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 136.9 | 8.8                                    | 40920                   | 41                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 162.2 | 7.4                                    | 41250                   | 35                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 179.7 | 6.7                                    | 40200                   | 30                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 201.1 | 6.0                                    | 41250                   | 28                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 219.0 | 5.5                                    | 40920                   | 25                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 252.4 | 4.8                                    | 41250                   | 22                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 282.7 | 4.2                                    | 40920                   | 19.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 325.9 | 3.7                                    | 41250                   | 17.2                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 354.9 | 3.4                                    | 40920                   | 15.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 120 4   | 400.6 | 3.0                                    | 37730                   | 12.8                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |

**HDO**

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDO 120   |       |  |                         |                         | n <sub>1</sub> = 1000 min <sup>-1</sup> |                           |                             |                              |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|------------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                             |                              |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRAS</sub><br>[kW] | P <sub>TMCRAS9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 120 2   | 6.6   | 152                                    | 31010                   | 515                     | *                                       | 253                       | 325                         | 403                          | 238                      | 266                         | 360                         |
| HDO 120 2   | 7.2   | 140                                    | 32970                   | 502                     | *                                       | 255                       | 327                         | 405                          | 240                      | 268                         | 362                         |
| HDO 120 2   | 8.1   | 124                                    | 35120                   | 474                     | *                                       | 258                       | 330                         | 408                          | 243                      | 271                         | 365                         |
| HDO 120 2   | 8.9   | 113                                    | 34450                   | 424                     | *                                       | 251                       | 323                         | 401                          | 236                      | 264                         | 358                         |
| HDO 120 2   | 10.0  | 100                                    | 36600                   | 399                     | *                                       | 253                       | 325                         | 403                          | 238                      | 266                         | 360                         |
| HDO 120 2   | 11.1  | 90                                     | 33350                   | 328                     | 161                                     | 264                       | 336                         | —                            | 249                      | 277                         | 371                         |
| HDO 120 2   | 12.5  | 80                                     | 35500                   | 310                     | 163                                     | 266                       | 338                         | —                            | 251                      | 279                         | 373                         |
| HDO 120 2   | 13.7  | 73                                     | 32500                   | 258                     | 170                                     | 273                       | 345                         | —                            | 258                      | 286                         | —                           |
| HDO 120 2   | 15.5  | 65                                     | 34640                   | 244                     | 171                                     | 274                       | 346                         | —                            | 259                      | 287                         | —                           |
| HDO 120 3   | 17.3  | 58                                     | 32720                   | 211                     | 133                                     | 204                       | 260                         | —                            | 196                      | 217                         | —                           |
| HDO 120 3   | 19.5  | 51                                     | 35200                   | 201                     | 133                                     | 204                       | 260                         | —                            | 196                      | 217                         | —                           |
| HDO 120 3   | 21.8  | 46                                     | 37700                   | 192                     | 136                                     | 207                       | 263                         | —                            | 199                      | 220                         | —                           |
| HDO 120 3   | 24.6  | 41                                     | 38980                   | 176                     | 139                                     | 210                       | 266                         | —                            | 202                      | 223                         | —                           |
| HDO 120 3   | 28.3  | 35                                     | 36250                   | 142                     | 142                                     | 213                       | 269                         | —                            | 205                      | 226                         | —                           |
| HDO 120 3   | 32.0  | 31                                     | 38110                   | 133                     | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 3   | 34.8  | 28.7                                   | 39010                   | 125                     | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 3   | 41.2  | 24.2                                   | 40270                   | 109                     | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 3   | 44.9  | 22.3                                   | 38830                   | 96                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 3   | 49.5  | 20.2                                   | 37620                   | 85                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 3   | 53.9  | 18.5                                   | 38800                   | 80                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 3   | 63.9  | 15.6                                   | 41250                   | 72                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 3   | 69.6  | 14.4                                   | 40360                   | 64                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 3   | 78.6  | 12.7                                   | 37220                   | 53                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 87.0  | 11.5                                   | 39760                   | 52                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 103.1 | 9.7                                    | 41250                   | 45                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 112.3 | 8.9                                    | 40920                   | 41                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 125.7 | 8.0                                    | 41250                   | 37                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 136.9 | 7.3                                    | 40920                   | 34                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 162.2 | 6.2                                    | 41250                   | 29                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 179.7 | 5.6                                    | 40920                   | 26                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 201.1 | 5.0                                    | 41250                   | 23                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 219.0 | 4.6                                    | 40920                   | 21                      | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 252.4 | 4.0                                    | 41250                   | 18.6                    | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 282.7 | 3.5                                    | 40920                   | 16.4                    | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 325.9 | 3.1                                    | 41250                   | 14.4                    | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 354.9 | 2.8                                    | 40920                   | 13.1                    | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |
| HDO 120 4   | 400.6 | 2.5                                    | 37730                   | 10.7                    | —                                       | —                         | —                           | —                            | —                        | —                           | —                           |

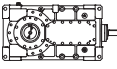
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary





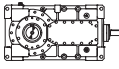
**HDO**

| HDO 120   |       |                               |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                    |                      |                      |                   |                      |                      |  |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                    |                      |                      |                   |                      |                      |  |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDO 120 2   | 6.6   | 152                           | 31010          | 515            | *                             | *                  | *                    | 236                  | *                 | 211                  | 305                  |  |
| HDO 120 2   | 7.2   | 140                           | 32970          | 502            | *                             | *                  | *                    | 239                  | *                 | 214                  | 308                  |  |
| HDO 120 2   | 8.1   | 124                           | 35120          | 474            | *                             | *                  | 197                  | 241                  | *                 | 216                  | 310                  |  |
| HDO 120 2   | 8.9   | 113                           | 34450          | 424            | *                             | *                  | 190                  | 234                  | 181               | 209                  | 303                  |  |
| HDO 120 2   | 10.0  | 100                           | 36600          | 399            | *                             | 170                | 192                  | 236                  | 183               | 211                  | 305                  |  |
| HDO 120 2   | 11.1  | 90                            | 33350          | 328            | *                             | 182                | 204                  | 248                  | 195               | 223                  | 317                  |  |
| HDO 120 2   | 12.5  | 80                            | 35500          | 310            | *                             | 183                | 205                  | 249                  | 196               | 224                  | 318                  |  |
| HDO 120 2   | 13.7  | 73                            | 32500          | 258            | 115                           | 190                | 212                  | 256                  | 203               | 231                  | 325                  |  |
| HDO 120 2   | 15.5  | 65                            | 34640          | 244            | 116                           | 191                | 213                  | 257                  | 204               | 232                  | 326                  |  |
| HDO 120 3   | 17.3  | 58                            | 32720          | 211            | 91                            | 143                | 162                  | 193                  | 154               | 175                  | 243                  |  |
| HDO 120 3   | 19.5  | 51                            | 35200          | 201            | 92                            | 144                | 163                  | 194                  | 155               | 176                  | 244                  |  |
| HDO 120 3   | 21.8  | 46                            | 37700          | 192            | 95                            | 147                | 166                  | 197                  | 158               | 179                  | 247                  |  |
| HDO 120 3   | 24.6  | 41                            | 38980          | 176            | 97                            | 149                | 168                  | 199                  | 160               | 181                  | —                    |  |
| HDO 120 3   | 28.3  | 35                            | 36250          | 142            | 100                           | 152                | 171                  | —                    | 163               | 184                  | —                    |  |
| HDO 120 3   | 32.0  | 31                            | 38110          | 133            | 102                           | 154                | 173                  | —                    | 165               | 186                  | —                    |  |
| HDO 120 3   | 34.8  | 28.7                          | 39010          | 125            | 102                           | 154                | 173                  | —                    | 165               | 186                  | —                    |  |
| HDO 120 3   | 41.2  | 24.2                          | 40270          | 109            | 103                           | 155                | 174                  | —                    | 166               | 187                  | —                    |  |
| HDO 120 3   | 44.9  | 22.3                          | 38830          | 96             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 3   | 49.5  | 20.2                          | 37620          | 85             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 3   | 53.9  | 18.5                          | 38800          | 80             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 3   | 63.9  | 15.6                          | 41250          | 72             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 3   | 69.6  | 14.4                          | 40360          | 64             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 3   | 78.6  | 12.7                          | 37220          | 53             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 87.0  | 11.5                          | 39760          | 52             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 103.1 | 9.7                           | 41250          | 45             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 112.3 | 8.9                           | 40920          | 41             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 125.7 | 8.0                           | 41250          | 37             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 136.9 | 7.3                           | 40920          | 34             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 162.2 | 6.2                           | 41250          | 29             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 179.7 | 5.6                           | 40920          | 26             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 201.1 | 5.0                           | 41250          | 23             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 219.0 | 4.6                           | 40920          | 21             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 252.4 | 4.0                           | 41250          | 18.6           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 282.7 | 3.5                           | 40920          | 16.4           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 325.9 | 3.1                           | 41250          | 14.4           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 354.9 | 2.8                           | 40920          | 13.1           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 120 4   | 400.6 | 2.5                           | 37730          | 10.7           | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |

\*  BONFIGLIOLI TECHNICAL SERVICE

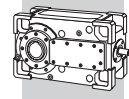
— Thermal verification not necessary



| HDO 125   |       |                                |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                    |                      |                      |                   |                      |                      |  |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|--|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                    |                      |                      |                   |                      |                      |  |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |  |
| HDO 125 2   | 7.4   | 243                            | 29330          | 777            | *                             | 330                | 336                  | 414                  | *                 | *                    | 371                  |  |
| HDO 125 2   | 8.0   | 226                            | 31560          | 777            | *                             | 334                | 340                  | 418                  | *                 | *                    | 375                  |  |
| HDO 125 2   | 8.8   | 204                            | 34940          | 776            | *                             | 338                | 344                  | 422                  | *                 | *                    | 379                  |  |
| HDO 125 2   | 9.9   | 182                            | 36250          | 720            | *                             | 339                | 345                  | 423                  | *                 | *                    | 380                  |  |
| HDO 125 2   | 11.5  | 157                            | 35910          | 614            | *                             | 353                | 359                  | 437                  | 272               | 300                  | 394                  |  |
| HDO 125 2   | 12.3  | 146                            | 37300          | 593            | *                             | 356                | 362                  | 440                  | 275               | 303                  | 397                  |  |
| HDO 125 2   | 14.2  | 127                            | 34960          | 482            | *                             | 342                | 348                  | 426                  | 261               | 289                  | 383                  |  |
| HDO 125 2   | 15.3  | 118                            | 36350          | 466            | *                             | 343                | 349                  | 427                  | 262               | 290                  | 384                  |  |
| HDO 125 2   | 16.9  | 106                            | 38880          | 450            | 190                           | 359                | 365                  | 443                  | 278               | 306                  | 400                  |  |
| HDO 125 3   | 19.2  | 94                             | 33640          | 350            | *                             | 254                | 265                  | 322                  | 201               | 222                  | 290                  |  |
| HDO 125 3   | 22.6  | 80                             | 35190          | 312            | 144                           | 260                | 271                  | 328                  | 207               | 228                  | 296                  |  |
| HDO 125 3   | 24.3  | 74                             | 37860          | 312            | 148                           | 264                | 275                  | 332                  | 211               | 232                  | 300                  |  |
| HDO 125 3   | 27.7  | 65                             | 38150          | 275            | 155                           | 271                | 282                  | —                    | 218               | 239                  | 307                  |  |
| HDO 125 3   | 33.0  | 54                             | 41240          | 250            | 159                           | 275                | 286                  | —                    | 222               | 243                  | 311                  |  |
| HDO 125 3   | 35.8  | 50                             | 41760          | 234            | 159                           | 275                | 286                  | —                    | 222               | 243                  | —                    |  |
| HDO 125 3   | 38.8  | 46                             | 43250          | 223            | 160                           | 276                | 287                  | —                    | 223               | 244                  | —                    |  |
| HDO 125 3   | 43.0  | 42                             | 44620          | 208            | 160                           | 276                | 287                  | —                    | 223               | 244                  | —                    |  |
| HDO 125 3   | 50.1  | 36                             | 46050          | 184            | 163                           | 279                | 290                  | —                    | 226               | 247                  | —                    |  |
| HDO 125 3   | 55.4  | 32                             | 46570          | 168            | 163                           | 279                | 290                  | —                    | 226               | 247                  | —                    |  |
| HDO 125 3   | 60.1  | 29.9                           | 42420          | 141            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 3   | 72.1  | 25.0                           | 47620          | 132            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 3   | 77.6  | 23.2                           | 49240          | 127            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 3   | 85.9  | 20.9                           | 46160          | 108            | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 97.0  | 18.6                           | 37170          | 78             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 116.3 | 15.5                           | 44590          | 78             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 125.2 | 14.4                           | 47980          | 78             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 141.8 | 12.7                           | 42600          | 61             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 152.6 | 11.8                           | 45850          | 61             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 178.0 | 10.1                           | 46190          | 53             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 200.3 | 9.0                            | 42070          | 43             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 226.9 | 7.9                            | 47230          | 43             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 244.1 | 7.4                            | 48720          | 41             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 284.8 | 6.3                            | 47230          | 34             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 315.2 | 5.7                            | 49240          | 32             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 367.6 | 4.9                            | 47750          | 27             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 395.6 | 4.5                            | 49240          | 25             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |
| HDO 125 4   | 438.0 | 4.1                            | 49240          | 23             | —                             | —                  | —                    | —                    | —                 | —                    | —                    |  |

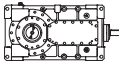
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 125

$n_1 = 1800 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 125 2   | 7.4   | 243                                    | 29330                   | 777                     | *                      | *                         | *                           | *                           | *                        | *                           | *                           |
| HDO 125 2   | 8.0   | 226                                    | 31560                   | 777                     | *                      | *                         | *                           | *                           | *                        | *                           | *                           |
| HDO 125 2   | 8.8   | 204                                    | 34940                   | 776                     | *                      | *                         | *                           | *                           | *                        | *                           | 314                         |
| HDO 125 2   | 9.9   | 182                                    | 36250                   | 720                     | *                      | *                         | *                           | *                           | *                        | *                           | 316                         |
| HDO 125 2   | 11.5  | 157                                    | 35910                   | 614                     | *                      | *                         | *                           | 261                         | *                        | *                           | 330                         |
| HDO 125 2   | 12.3  | 146                                    | 37300                   | 593                     | *                      | 246                       | *                           | 263                         | *                        | 238                         | 332                         |
| HDO 125 2   | 14.2  | 127                                    | 34960                   | 482                     | *                      | 232                       | 205                         | 249                         | 196                      | 224                         | 318                         |
| HDO 125 2   | 15.3  | 118                                    | 36350                   | 466                     | *                      | 233                       | 206                         | 250                         | 197                      | 225                         | 319                         |
| HDO 125 2   | 16.9  | 106                                    | 38880                   | 450                     | *                      | 250                       | 223                         | 267                         | 214                      | 242                         | 336                         |
| HDO 125 3   | 19.2  | 94                                     | 33640                   | 350                     | *                      | 174                       | 160                         | 191                         | 152                      | 173                         | 241                         |
| HDO 125 3   | 22.6  | 80                                     | 35190                   | 312                     | *                      | 180                       | 166                         | 197                         | 158                      | 179                         | 247                         |
| HDO 125 3   | 24.3  | 74                                     | 37860                   | 312                     | *                      | 184                       | 170                         | 201                         | 162                      | 183                         | 251                         |
| HDO 125 3   | 27.7  | 65                                     | 38150                   | 275                     | *                      | 191                       | 177                         | 208                         | 169                      | 190                         | 258                         |
| HDO 125 3   | 33.0  | 54                                     | 41240                   | 250                     | 109                    | 194                       | 180                         | 211                         | 172                      | 193                         | 261                         |
| HDO 125 3   | 35.8  | 50                                     | 41760                   | 234                     | 109                    | 194                       | 180                         | 211                         | 172                      | 193                         | 261                         |
| HDO 125 3   | 38.8  | 46                                     | 43250                   | 223                     | 111                    | 196                       | 182                         | 213                         | 174                      | 195                         | 263                         |
| HDO 125 3   | 43.0  | 42                                     | 44620                   | 208                     | 111                    | 196                       | 182                         | 213                         | 174                      | 195                         | 263                         |
| HDO 125 3   | 50.1  | 36                                     | 46050                   | 184                     | 113                    | 198                       | 184                         | —                           | 176                      | 197                         | —                           |
| HDO 125 3   | 55.4  | 32                                     | 46570                   | 168                     | 113                    | 198                       | 184                         | —                           | 176                      | 197                         | —                           |
| HDO 125 3   | 60.1  | 29.9                                   | 42420                   | 141                     | 119                    | 204                       | 190                         | —                           | 182                      | 203                         | —                           |
| HDO 125 3   | 72.1  | 25.0                                   | 47620                   | 132                     | 119                    | 204                       | 190                         | —                           | 182                      | 203                         | —                           |
| HDO 125 3   | 77.6  | 23.2                                   | 49240                   | 127                     | 121                    | 206                       | 192                         | —                           | 184                      | 205                         | —                           |
| HDO 125 3   | 85.9  | 20.9                                   | 46160                   | 108                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 97.0  | 18.6                                   | 37170                   | 78                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 116.3 | 15.5                                   | 44590                   | 78                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 125.2 | 14.4                                   | 47980                   | 78                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 141.8 | 12.7                                   | 42600                   | 61                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 152.6 | 11.8                                   | 45850                   | 61                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 178.0 | 10.1                                   | 46190                   | 53                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 200.3 | 9.0                                    | 42070                   | 43                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 226.9 | 7.9                                    | 47230                   | 43                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 244.1 | 7.4                                    | 48720                   | 41                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 284.8 | 6.3                                    | 47230                   | 34                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 315.2 | 5.7                                    | 49240                   | 32                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 367.6 | 4.9                                    | 47750                   | 27                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 395.6 | 4.5                                    | 49240                   | 25                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 438.0 | 4.1                                    | 49240                   | 23                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |

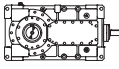
HDO



# HDO 125

$n_1 = 1500 \text{ min}^{-1}$

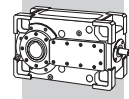
$t_a = 20^\circ\text{C}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                    |                      |                      |                   |                      |                      |
|---|-------|-------------------------------|----------------|----------------|--------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDO 125 2   | 7.4   | 202                           | 30980          | 684            | *                        | 326                | 354                  | 432                  | *                 | 295                  | 389                  |
| HDO 125 2   | 8.0   | 188                           | 33330          | 683            | *                        | 329                | 357                  | 435                  | *                 | 298                  | 392                  |
| HDO 125 2   | 8.8   | 170                           | 36910          | 684            | *                        | 332                | 360                  | 438                  | *                 | 301                  | 395                  |
| HDO 125 2   | 9.9   | 152                           | 38280          | 634            | *                        | 333                | 361                  | 439                  | 274               | 302                  | 396                  |
| HDO 125 2   | 11.5  | 131                           | 35910          | 512            | *                        | 344                | 372                  | 450                  | 285               | 313                  | 407                  |
| HDO 125 2   | 12.3  | 122                           | 37300          | 494            | 199                      | 346                | 374                  | 452                  | 287               | 315                  | 409                  |
| HDO 125 2   | 14.2  | 105                           | 34970          | 402            | 188                      | 335                | 363                  | 441                  | 276               | 304                  | 398                  |
| HDO 125 2   | 15.3  | 98                            | 36350          | 388            | 189                      | 336                | 364                  | 442                  | 277               | 305                  | 399                  |
| HDO 125 2   | 16.9  | 89                            | 38880          | 375            | 201                      | 348                | 376                  | —                    | 289               | 317                  | 411                  |
| HDO 125 3   | 19.2  | 78                            | 35530          | 308            | 148                      | 249                | 275                  | 332                  | 211               | 232                  | 300                  |
| HDO 125 3   | 22.6  | 66                            | 37160          | 275            | 153                      | 254                | 280                  | —                    | 216               | 237                  | 305                  |
| HDO 125 3   | 24.3  | 62                            | 39990          | 275            | 156                      | 257                | 283                  | —                    | 219               | 240                  | 308                  |
| HDO 125 3   | 27.7  | 54                            | 40300          | 243            | 161                      | 262                | 288                  | —                    | 224               | 245                  | —                    |
| HDO 125 3   | 33.0  | 45                            | 43560          | 220            | 164                      | 265                | 291                  | —                    | 227               | 248                  | —                    |
| HDO 125 3   | 35.8  | 42                            | 44100          | 206            | 164                      | 265                | 291                  | —                    | 227               | 248                  | —                    |
| HDO 125 3   | 38.8  | 39                            | 45680          | 197            | 165                      | 266                | 292                  | —                    | 228               | 249                  | —                    |
| HDO 125 3   | 43.0  | 35                            | 46650          | 181            | 165                      | 266                | 292                  | —                    | 228               | 249                  | —                    |
| HDO 125 3   | 50.1  | 30                            | 48640          | 162            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 55.4  | 27.1                          | 46390          | 140            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 60.1  | 24.9                          | 44800          | 124            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 72.1  | 20.8                          | 47750          | 110            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 77.6  | 19.3                          | 49240          | 106            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 85.9  | 17.5                          | 46010          | 89             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 97.0  | 15.5                          | 39260          | 69             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 116.3 | 12.9                          | 47090          | 69             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 125.2 | 12.0                          | 49240          | 67             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 141.8 | 10.6                          | 45000          | 54             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 152.6 | 9.8                           | 48420          | 54             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 178.0 | 8.4                           | 47230          | 45             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 200.3 | 7.5                           | 44430          | 38             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 226.9 | 6.6                           | 47230          | 35             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 244.1 | 6.1                           | 48720          | 34             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 284.8 | 5.3                           | 47230          | 28             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 315.2 | 4.8                           | 49240          | 27             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 367.6 | 4.1                           | 47750          | 22             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 395.6 | 3.8                           | 49240          | 21             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 438.0 | 3.4                           | 49240          | 19.1           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |

HDO

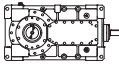
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 125

$n_1 = 1500 \text{ min}^{-1}$

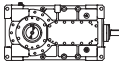
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 125 2   | 7.4   | 202                                    | 30980                   | 684                     | *                      | *                         | *                           | *                           | *                        | *                           | 324                         |
| HDO 125 2   | 8.0   | 188                                    | 33330                   | 683                     | *                      | *                         | *                           | *                           | *                        | *                           | 327                         |
| HDO 125 2   | 8.8   | 170                                    | 36910                   | 684                     | *                      | *                         | *                           | *                           | *                        | *                           | 330                         |
| HDO 125 2   | 9.9   | 152                                    | 38280                   | 634                     | *                      | *                         | *                           | 262                         | *                        | *                           | 331                         |
| HDO 125 2   | 11.5  | 131                                    | 35910                   | 512                     | *                      | 240                       | 229                         | 273                         | 220                      | 248                         | 342                         |
| HDO 125 2   | 12.3  | 122                                    | 37300                   | 494                     | *                      | 242                       | 231                         | 275                         | 222                      | 250                         | 344                         |
| HDO 125 2   | 14.2  | 105                                    | 34970                   | 402                     | *                      | 231                       | 220                         | 264                         | 211                      | 239                         | 333                         |
| HDO 125 2   | 15.3  | 98                                     | 36350                   | 388                     | *                      | 232                       | 221                         | 265                         | 212                      | 240                         | 334                         |
| HDO 125 2   | 16.9  | 89                                     | 38880                   | 375                     | *                      | 245                       | 234                         | 278                         | 225                      | 253                         | 347                         |
| HDO 125 3   | 19.2  | 78                                     | 35530                   | 308                     | *                      | 173                       | 170                         | 201                         | 162                      | 183                         | 251                         |
| HDO 125 3   | 22.6  | 66                                     | 37160                   | 275                     | *                      | 178                       | 175                         | 206                         | 167                      | 188                         | 256                         |
| HDO 125 3   | 24.3  | 62                                     | 39990                   | 275                     | *                      | 181                       | 178                         | 209                         | 170                      | 191                         | 259                         |
| HDO 125 3   | 27.7  | 54                                     | 40300                   | 243                     | 112                    | 186                       | 183                         | 214                         | 175                      | 196                         | 264                         |
| HDO 125 3   | 33.0  | 45                                     | 43560                   | 220                     | 115                    | 189                       | 186                         | 217                         | 178                      | 199                         | 267                         |
| HDO 125 3   | 35.8  | 42                                     | 44100                   | 206                     | 115                    | 189                       | 186                         | 217                         | 178                      | 199                         | 267                         |
| HDO 125 3   | 38.8  | 39                                     | 45680                   | 197                     | 116                    | 190                       | 187                         | 218                         | 179                      | 200                         | —                           |
| HDO 125 3   | 43.0  | 35                                     | 46650                   | 181                     | 116                    | 190                       | 187                         | —                           | 179                      | 200                         | —                           |
| HDO 125 3   | 50.1  | 30                                     | 48640                   | 162                     | 118                    | 192                       | 189                         | —                           | 181                      | 202                         | —                           |
| HDO 125 3   | 55.4  | 27.1                                   | 46390                   | 140                     | 118                    | 192                       | 189                         | —                           | 181                      | 202                         | —                           |
| HDO 125 3   | 60.1  | 24.9                                   | 44800                   | 124                     | 122                    | 196                       | 193                         | —                           | 185                      | 206                         | —                           |
| HDO 125 3   | 72.1  | 20.8                                   | 47750                   | 110                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 77.6  | 19.3                                   | 49240                   | 106                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 85.9  | 17.5                                   | 46010                   | 89                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 97.0  | 15.5                                   | 39260                   | 69                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 116.3 | 12.9                                   | 47090                   | 69                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 125.2 | 12.0                                   | 49240                   | 67                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 141.8 | 10.6                                   | 45000                   | 54                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 152.6 | 9.8                                    | 48420                   | 54                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 178.0 | 8.4                                    | 47230                   | 45                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 200.3 | 7.5                                    | 44430                   | 38                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 226.9 | 6.6                                    | 47230                   | 35                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 244.1 | 6.1                                    | 48720                   | 34                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 284.8 | 5.3                                    | 47230                   | 28                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 315.2 | 4.8                                    | 49240                   | 27                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 367.6 | 4.1                                    | 47750                   | 22                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 395.6 | 3.8                                    | 49240                   | 21                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 438.0 | 3.4                                    | 49240                   | 19.1                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



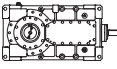
| HDO 125   |       |  |                         |                         | n <sub>1</sub> = 1200 min <sup>-1</sup> |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                             |                             |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 125 2   | 7.4   | 162                                    | 33130                   | 585                     | *                                       | 324                       | 367                         | 445                         | 280                      | 308                         | 402                         |
| HDO 125 2   | 8.0   | 150                                    | 35650                   | 585                     | *                                       | 327                       | 370                         | 448                         | 283                      | 311                         | 405                         |
| HDO 125 2   | 8.8   | 136                                    | 39430                   | 584                     | *                                       | 329                       | 372                         | 450                         | 285                      | 313                         | 407                         |
| HDO 125 2   | 9.9   | 122                                    | 38520                   | 510                     | *                                       | 330                       | 373                         | 451                         | 286                      | 314                         | 408                         |
| HDO 125 2   | 11.5  | 105                                    | 35910                   | 410                     | 206                                     | 338                       | 381                         | 459                         | 294                      | 322                         | 416                         |
| HDO 125 2   | 12.3  | 97                                     | 37300                   | 395                     | 208                                     | 340                       | 383                         | 461                         | 296                      | 324                         | 418                         |
| HDO 125 2   | 14.2  | 84                                     | 34970                   | 322                     | 199                                     | 331                       | 374                         | —                           | 287                      | 315                         | 409                         |
| HDO 125 2   | 15.3  | 78                                     | 36350                   | 311                     | 200                                     | 332                       | 375                         | —                           | 288                      | 316                         | —                           |
| HDO 125 2   | 16.9  | 71                                     | 38880                   | 300                     | 210                                     | 342                       | 385                         | —                           | 298                      | 326                         | —                           |
| HDO 125 3   | 19.2  | 62                                     | 36480                   | 253                     | 156                                     | 247                       | 283                         | —                           | 219                      | 240                         | 308                         |
| HDO 125 3   | 22.6  | 53                                     | 39740                   | 235                     | 159                                     | 250                       | 286                         | —                           | 222                      | 243                         | —                           |
| HDO 125 3   | 24.3  | 49                                     | 42760                   | 235                     | 162                                     | 253                       | 289                         | —                           | 225                      | 246                         | —                           |
| HDO 125 3   | 27.7  | 43                                     | 43090                   | 207                     | 166                                     | 257                       | 293                         | —                           | 229                      | 250                         | —                           |
| HDO 125 3   | 33.0  | 36                                     | 46570                   | 188                     | 168                                     | 259                       | 295                         | —                           | 231                      | 252                         | —                           |
| HDO 125 3   | 35.8  | 34                                     | 47160                   | 176                     | 168                                     | 259                       | 295                         | —                           | 231                      | 252                         | —                           |
| HDO 125 3   | 38.8  | 31                                     | 46270                   | 159                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 43.0  | 27.9                                   | 46420                   | 144                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 50.1  | 24.0                                   | 49240                   | 131                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 55.4  | 21.6                                   | 46190                   | 111                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 60.1  | 20.0                                   | 47910                   | 106                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 72.1  | 16.6                                   | 47750                   | 88                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 77.6  | 15.5                                   | 49240                   | 85                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 85.9  | 14.0                                   | 46530                   | 72                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 97.0  | 12.4                                   | 41970                   | 59                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 116.3 | 10.3                                   | 47750                   | 56                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 125.2 | 9.6                                    | 49240                   | 54                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 141.8 | 8.5                                    | 47230                   | 45                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 152.6 | 7.9                                    | 48720                   | 43                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 178.0 | 6.7                                    | 47230                   | 36                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 200.3 | 6.0                                    | 47510                   | 32                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 226.9 | 5.3                                    | 47230                   | 28                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 244.1 | 4.9                                    | 48720                   | 27                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 284.8 | 4.2                                    | 47230                   | 23                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 315.2 | 3.8                                    | 49240                   | 21                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 367.6 | 3.3                                    | 47750                   | 17.7                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 395.6 | 3.0                                    | 49240                   | 17.0                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 438.0 | 2.7                                    | 49240                   | 15.3                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDO**

| HDO 125   |       |  |                         |                         | n <sub>1</sub> = 1200 min <sup>-1</sup> |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C                   |                           |                             |                             |                          |                             |                             |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 125 2   | 7.4   | 162                                    | 33130                   | 585                     | *                                       | *                         | *                           | 269                         | *                        | 244                         | 338                         |
| HDO 125 2   | 8.0   | 150                                    | 35650                   | 585                     | *                                       | *                         | *                           | 271                         | *                        | 246                         | 340                         |
| HDO 125 2   | 8.8   | 136                                    | 39430                   | 584                     | *                                       | *                         | *                           | 273                         | *                        | 248                         | 342                         |
| HDO 125 2   | 9.9   | 122                                    | 38520                   | 510                     | *                                       | 230                       | 230                         | 274                         | 221                      | 249                         | 343                         |
| HDO 125 2   | 11.5  | 105                                    | 35910                   | 410                     | *                                       | 239                       | 239                         | 283                         | 230                      | 258                         | 352                         |
| HDO 125 2   | 12.3  | 97                                     | 37300                   | 395                     | *                                       | 240                       | 240                         | 284                         | 231                      | 259                         | 353                         |
| HDO 125 2   | 14.2  | 84                                     | 34970                   | 322                     | 135                                     | 232                       | 232                         | 276                         | 223                      | 251                         | 345                         |
| HDO 125 2   | 15.3  | 78                                     | 36350                   | 311                     | 135                                     | 232                       | 232                         | 276                         | 223                      | 251                         | 345                         |
| HDO 125 2   | 16.9  | 71                                     | 38880                   | 300                     | 145                                     | 242                       | 242                         | 286                         | 233                      | 261                         | 355                         |
| HDO 125 3   | 19.2  | 62                                     | 36480                   | 253                     | 106                                     | 173                       | 177                         | 208                         | 169                      | 190                         | 258                         |
| HDO 125 3   | 22.6  | 53                                     | 39740                   | 235                     | 110                                     | 177                       | 181                         | 212                         | 173                      | 194                         | 262                         |
| HDO 125 3   | 24.3  | 49                                     | 42760                   | 235                     | 113                                     | 180                       | 184                         | 215                         | 176                      | 197                         | 265                         |
| HDO 125 3   | 27.7  | 43                                     | 43090                   | 207                     | 116                                     | 183                       | 187                         | 218                         | 179                      | 200                         | 268                         |
| HDO 125 3   | 33.0  | 36                                     | 46570                   | 188                     | 119                                     | 186                       | 190                         | —                           | 182                      | 203                         | —                           |
| HDO 125 3   | 35.8  | 34                                     | 47160                   | 176                     | 119                                     | 186                       | 190                         | —                           | 182                      | 203                         | —                           |
| HDO 125 3   | 38.8  | 31                                     | 46270                   | 159                     | 120                                     | 187                       | 191                         | —                           | 183                      | 204                         | —                           |
| HDO 125 3   | 43.0  | 27.9                                   | 46420                   | 144                     | 119                                     | 186                       | 190                         | —                           | 182                      | 203                         | —                           |
| HDO 125 3   | 50.1  | 24.0                                   | 49240                   | 131                     | 121                                     | 188                       | 192                         | —                           | 184                      | 205                         | —                           |
| HDO 125 3   | 55.4  | 21.6                                   | 46190                   | 111                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 60.1  | 20.0                                   | 47910                   | 106                     | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 72.1  | 16.6                                   | 47750                   | 88                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 77.6  | 15.5                                   | 49240                   | 85                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 85.9  | 14.0                                   | 46530                   | 72                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 97.0  | 12.4                                   | 41970                   | 59                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 116.3 | 10.3                                   | 47750                   | 56                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 125.2 | 9.6                                    | 49240                   | 54                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 141.8 | 8.5                                    | 47230                   | 45                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 152.6 | 7.9                                    | 48720                   | 43                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 178.0 | 6.7                                    | 47230                   | 36                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 200.3 | 6.0                                    | 47510                   | 32                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 226.9 | 5.3                                    | 47230                   | 28                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 244.1 | 4.9                                    | 48720                   | 27                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 284.8 | 4.2                                    | 47230                   | 23                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 315.2 | 3.8                                    | 49240                   | 21                      | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 367.6 | 3.3                                    | 47750                   | 17.7                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 395.6 | 3.0                                    | 49240                   | 17.0                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 438.0 | 2.7                                    | 49240                   | 15.3                    | —                                       | —                         | —                           | —                           | —                        | —                           | —                           |

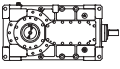
\* 

— Thermal verification not necessary



# HDO 125

$n_1 = 1000 \text{ min}^{-1}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                    |                      |                      |                   |                      |                      |
|---|-------|-------------------------------|----------------|----------------|--------------------------|--------------------|----------------------|----------------------|-------------------|----------------------|----------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TMCR45}$<br>[kW] | $P_{TMCR49}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] |
| HDO 125 2   | 7.4   | 135                           | 34990          | 515            | *                        | 304                | 376                  | 454                  | 289               | 317                  | 411                  |
| HDO 125 2   | 8.0   | 125                           | 36890          | 504            | 203                      | 306                | 378                  | 456                  | 291               | 319                  | 413                  |
| HDO 125 2   | 8.8   | 113                           | 39430          | 487            | 205                      | 308                | 380                  | 458                  | 293               | 321                  | 415                  |
| HDO 125 2   | 9.9   | 101                           | 38520          | 425            | 206                      | 309                | 381                  | 459                  | 294               | 322                  | 416                  |
| HDO 125 2   | 11.5  | 87                            | 35910          | 341            | 213                      | 316                | 388                  | —                    | 301               | 329                  | 423                  |
| HDO 125 2   | 12.3  | 81                            | 37300          | 329            | 214                      | 317                | 389                  | —                    | 302               | 330                  | —                    |
| HDO 125 2   | 14.2  | 70                            | 34970          | 268            | 207                      | 310                | 382                  | —                    | 295               | 323                  | —                    |
| HDO 125 2   | 15.3  | 65                            | 36350          | 259            | 208                      | 311                | 383                  | —                    | 296               | 324                  | —                    |
| HDO 125 2   | 16.9  | 59                            | 38880          | 250            | 215                      | 318                | 390                  | —                    | 303               | 331                  | —                    |
| HDO 125 3   | 19.2  | 52                            | 36480          | 211            | 161                      | 232                | 288                  | —                    | 224               | 245                  | —                    |
| HDO 125 3   | 22.6  | 44                            | 39920          | 197            | 164                      | 235                | 291                  | —                    | 227               | 248                  | —                    |
| HDO 125 3   | 24.3  | 41                            | 42960          | 197            | 166                      | 237                | 293                  | —                    | 229               | 250                  | —                    |
| HDO 125 3   | 27.7  | 36                            | 45510          | 183            | 169                      | 240                | 296                  | —                    | 232               | 253                  | —                    |
| HDO 125 3   | 33.0  | 30                            | 46500          | 157            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 35.8  | 27.9                          | 47750          | 148            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 38.8  | 25.8                          | 46270          | 133            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 43.0  | 23.3                          | 46250          | 120            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 50.1  | 20.0                          | 49240          | 109            | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 55.4  | 18.0                          | 46040          | 92             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 60.1  | 16.6                          | 48720          | 90             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 72.1  | 13.9                          | 47750          | 74             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 77.6  | 12.9                          | 49240          | 71             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 3   | 85.9  | 11.6                          | 47860          | 62             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 97.0  | 10.3                          | 44330          | 52             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 116.3 | 8.6                           | 47750          | 47             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 125.2 | 8.0                           | 49240          | 45             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 141.8 | 7.1                           | 47230          | 38             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 152.6 | 6.6                           | 49210          | 37             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 178.0 | 5.6                           | 47230          | 30             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 200.3 | 5.0                           | 49240          | 28             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 226.9 | 4.4                           | 47230          | 24             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 244.1 | 4.1                           | 48720          | 23             | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 284.8 | 3.5                           | 47230          | 18.8           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 315.2 | 3.2                           | 49240          | 17.7           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 367.6 | 2.7                           | 47750          | 14.7           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 395.6 | 2.5                           | 49730          | 14.3           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |
| HDO 125 4   | 438.0 | 2.3                           | 49240          | 12.8           | —                        | —                  | —                    | —                    | —                 | —                    | —                    |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

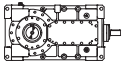
— Thermal verification not necessary





# HDO 125

$n_1 = 1000 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                          |                             |                             |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] |
| HDO 125 2   | 7.4   | 135                                    | 34990                   | 515                     | *                      | 212                       | 234                         | 278                         | 225                      | 253                         | 347                         |
| HDO 125 2   | 8.0   | 125                                    | 36890                   | 504                     | *                      | 214                       | 236                         | 280                         | 227                      | 255                         | 349                         |
| HDO 125 2   | 8.8   | 113                                    | 39430                   | 487                     | *                      | 215                       | 237                         | 281                         | 228                      | 256                         | 350                         |
| HDO 125 2   | 9.9   | 101                                    | 38520                   | 425                     | *                      | 216                       | 238                         | 282                         | 229                      | 257                         | 351                         |
| HDO 125 2   | 11.5  | 87                                     | 35910                   | 341                     | 148                    | 223                       | 245                         | 289                         | 236                      | 264                         | 358                         |
| HDO 125 2   | 12.3  | 81                                     | 37300                   | 329                     | 149                    | 224                       | 246                         | 290                         | 237                      | 265                         | 359                         |
| HDO 125 2   | 14.2  | 70                                     | 34970                   | 268                     | 142                    | 217                       | 239                         | 283                         | 230                      | 258                         | 352                         |
| HDO 125 2   | 15.3  | 65                                     | 36350                   | 259                     | 143                    | 218                       | 240                         | 284                         | 231                      | 259                         | —                           |
| HDO 125 2   | 16.9  | 59                                     | 38880                   | 250                     | 151                    | 226                       | 248                         | 292                         | 239                      | 267                         | —                           |
| HDO 125 3   | 19.2  | 52                                     | 36480                   | 211                     | 112                    | 164                       | 183                         | 214                         | 175                      | 196                         | 264                         |
| HDO 125 3   | 22.6  | 44                                     | 39920                   | 197                     | 115                    | 167                       | 186                         | 217                         | 178                      | 199                         | —                           |
| HDO 125 3   | 24.3  | 41                                     | 42960                   | 197                     | 116                    | 168                       | 187                         | 218                         | 179                      | 200                         | —                           |
| HDO 125 3   | 27.7  | 36                                     | 45510                   | 183                     | 120                    | 172                       | 191                         | —                           | 183                      | 204                         | —                           |
| HDO 125 3   | 33.0  | 30                                     | 46500                   | 157                     | 122                    | 174                       | 193                         | —                           | 185                      | 206                         | —                           |
| HDO 125 3   | 35.8  | 27.9                                   | 47750                   | 148                     | 122                    | 174                       | 193                         | —                           | 185                      | 206                         | —                           |
| HDO 125 3   | 38.8  | 25.8                                   | 46270                   | 133                     | 122                    | 174                       | 193                         | —                           | 185                      | 206                         | —                           |
| HDO 125 3   | 43.0  | 23.3                                   | 46250                   | 120                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 50.1  | 20.0                                   | 49240                   | 109                     | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 55.4  | 18.0                                   | 46040                   | 92                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 60.1  | 16.6                                   | 48720                   | 90                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 72.1  | 13.9                                   | 47750                   | 74                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 77.6  | 12.9                                   | 49240                   | 71                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 3   | 85.9  | 11.6                                   | 47860                   | 62                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 97.0  | 10.3                                   | 44330                   | 52                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 116.3 | 8.6                                    | 47750                   | 47                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 125.2 | 8.0                                    | 49240                   | 45                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 141.8 | 7.1                                    | 47230                   | 38                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 152.6 | 6.6                                    | 49210                   | 37                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 178.0 | 5.6                                    | 47230                   | 30                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 200.3 | 5.0                                    | 49240                   | 28                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 226.9 | 4.4                                    | 47230                   | 24                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 244.1 | 4.1                                    | 48720                   | 23                      | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 284.8 | 3.5                                    | 47230                   | 18.8                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 315.2 | 3.2                                    | 49240                   | 17.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 367.6 | 2.7                                    | 47750                   | 14.7                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 395.6 | 2.5                                    | 49730                   | 14.3                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |
| HDO 125 4   | 438.0 | 2.3                                    | 49240                   | 12.8                    | —                      | —                         | —                           | —                           | —                        | —                           | —                           |

HDO

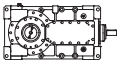
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 130

$n_1 = 1800 \text{ min}^{-1}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                    |                       |                       |                        |                        |                   |                       |                       |                        |                        |
|---|-------|-------------------------------|----------------|----------------|--------------------------|--------------------|-----------------------|-----------------------|------------------------|------------------------|-------------------|-----------------------|-----------------------|------------------------|------------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TMCR A5}$<br>[kW] | $P_{TMCR A9}$<br>[kW] | $P_{TMCR A21}$<br>[kW] | $P_{TMCR A34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCR W5}$<br>[kW] | $P_{TMCR W9}$<br>[kW] | $P_{TMCR W21}$<br>[kW] | $P_{TMCR W34}$<br>[kW] |
| HDO 130 2   | 5.7   | 315                           | 41480          | 1426           | *                        | *                  | *                     | *                     | 592                    | ●                      | *                 | *                     | *                     | *                      | ●                      |
| HDO 130 2   | 6.2   | 289                           | 42950          | 1353           | *                        | *                  | *                     | *                     | 601                    |                        | *                 | *                     | *                     | *                      |                        |
| HDO 130 2   | 7.1   | 254                           | 44500          | 1232           | *                        | *                  | *                     | *                     | 612                    |                        | *                 | *                     | *                     | *                      |                        |
| HDO 130 2   | 7.7   | 233                           | 46060          | 1172           | *                        | *                  | *                     | *                     | 617                    |                        | *                 | *                     | *                     | 491                    |                        |
| HDO 130 2   | 8.8   | 205                           | 47690          | 1066           | *                        | *                  | *                     | *                     | 625                    |                        | *                 | *                     | *                     | 499                    |                        |
| HDO 130 2   | 9.6   | 187                           | 48330          | 984            | *                        | 447                | *                     | 421                   | 664                    |                        | *                 | *                     | *                     | 538                    |                        |
| HDO 130 2   | 11.0  | 164                           | 50120          | 896            | *                        | 454                | *                     | 428                   | 671                    |                        | *                 | *                     | 385                   | 545                    |                        |
| HDO 130 2   | 12.0  | 151                           | 50800          | 834            | *                        | 479                | 375                   | 453                   | 696                    |                        | *                 | *                     | 410                   | 570                    |                        |
| HDO 130 2   | 13.6  | 132                           | 52750          | 761            | *                        | 484                | 380                   | 458                   | 701                    |                        | 312               | 321                   | 415                   | 575                    |                        |
| HDO 130 3   | 15.2  | 119                           | 55160          | 727            | *                        | *                  | *                     | *                     | 411                    | 537                    | *                 | *                     | *                     | 319                    | 541                    |
| HDO 130 3   | 18.3  | 99                            | 56980          | 625            | *                        | 310                | *                     | 303                   | 479                    | 605                    | *                 | *                     | 271                   | 387                    | 609                    |
| HDO 130 3   | 19.9  | 90                            | 62200          | 625            | *                        | 312                | *                     | 305                   | 481                    | 607                    | *                 | *                     | 273                   | 389                    | 611                    |
| HDO 130 3   | 22.6  | 80                            | 59950          | 531            | *                        | 339                | 275                   | 332                   | 508                    | 634                    | 250               | 232                   | 300                   | 416                    | 638                    |
| HDO 130 3   | 24.7  | 73                            | 62590          | 508            | *                        | 341                | 277                   | 334                   | 510                    | —                      | 252               | 234                   | 302                   | 418                    | 640                    |
| HDO 130 3   | 28.3  | 64                            | 65230          | 462            | *                        | 352                | 288                   | 345                   | 521                    | —                      | 263               | 245                   | 313                   | 429                    | 651                    |
| HDO 130 3   | 30.9  | 58                            | 62590          | 406            | *                        | 353                | 289                   | 346                   | 522                    | —                      | 264               | 246                   | 314                   | 430                    | —                      |
| HDO 130 3   | 34.9  | 52                            | 64510          | 371            | 170                      | 361                | 297                   | 354                   | 530                    | —                      | 272               | 254                   | 322                   | 438                    | —                      |
| HDO 130 3   | 38.3  | 47                            | 62590          | 328            | 193                      | 384                | 320                   | 377                   | —                      | —                      | 295               | 277                   | 345                   | —                      | —                      |
| HDO 130 3   | 43.8  | 41                            | 64790          | 296            | 200                      | 391                | 327                   | —                     | —                      | —                      | 302               | 284                   | 352                   | —                      | —                      |
| HDO 130 3   | 47.8  | 38                            | 62590          | 262            | 200                      | 391                | 327                   | —                     | —                      | —                      | 302               | 284                   | —                     | —                      | —                      |
| HDO 130 3   | 54.0  | 33                            | 61210          | 227            | 205                      | 396                | 332                   | —                     | —                      | —                      | 307               | 289                   | —                     | —                      | —                      |
| HDO 130 3   | 59.0  | 31                            | 62330          | 212            | 206                      | 397                | 333                   | —                     | —                      | —                      | 308               | 290                   | —                     | —                      | —                      |
| HDO 130 3   | 67.1  | 26.8                          | 58960          | 176            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 71.5  | 25.2                          | 64720          | 185            | 159                      | 305                | 259                   | —                     | —                      | —                      | 237               | 225                   | —                     | —                      | —                      |
| HDO 130 4   | 78.1  | 23.1                          | 61990          | 162            | 159                      | 305                | 259                   | —                     | —                      | —                      | 237               | 225                   | —                     | —                      | —                      |
| HDO 130 4   | 88.2  | 20.4                          | 64510          | 149            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 96.3  | 18.7                          | 62590          | 133            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 111.2 | 16.2                          | 65230          | 120            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 121.4 | 14.8                          | 62590          | 105            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 141.3 | 12.7                          | 65230          | 94             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 154.3 | 11.7                          | 66770          | 88             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 174.3 | 10.3                          | 69570          | 82             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 190.3 | 9.5                           | 66770          | 72             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 219.1 | 8.2                           | 65230          | 61             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 239.1 | 7.5                           | 66770          | 57             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 270.2 | 6.7                           | 69570          | 53             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 294.9 | 6.1                           | 66770          | 46             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 335.6 | 5.4                           | 63140          | 38             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |

HDO

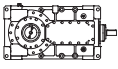
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDO**

**HDO 130** **n<sub>1</sub> = 1800 min<sup>-1</sup>**

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                              |                              |                               |                               |                          |                              |                              |                               |                               |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|--------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR A5</sub><br>[kW] | P <sub>TMCR A9</sub><br>[kW] | P <sub>TMCR A21</sub><br>[kW] | P <sub>TMCR A34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCR W5</sub><br>[kW] | P <sub>TMCR W9</sub><br>[kW] | P <sub>TMCR W21</sub><br>[kW] | P <sub>TMCR W34</sub><br>[kW] |
| HDO 130 2   | 5.7   | 315                                    | 41480                   | 1426                    | *                      | *                         | *                            | *                            | *                             | ●                             | *                        | *                            | *                            | *                             | ●                             |
| HDO 130 2   | 6.2   | 289                                    | 42950                   | 1353                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |
| HDO 130 2   | 7.1   | 254                                    | 44500                   | 1232                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |
| HDO 130 2   | 7.7   | 233                                    | 46060                   | 1172                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |
| HDO 130 2   | 8.8   | 205                                    | 47690                   | 1066                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |
| HDO 130 2   | 9.6   | 187                                    | 48330                   | 984                     | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 456                           |                               |
| HDO 130 2   | 11.0  | 164                                    | 50120                   | 896                     | *                      | *                         | *                            | *                            | 369                           |                               | *                        | *                            | *                            | 463                           |                               |
| HDO 130 2   | 12.0  | 151                                    | 50800                   | 834                     | *                      | *                         | *                            | *                            | 394                           |                               | *                        | *                            | *                            | 488                           |                               |
| HDO 130 2   | 13.6  | 132                                    | 52750                   | 761                     | *                      | 328                       | *                            | *                            | 399                           |                               | *                        | *                            | 333                          | 493                           |                               |
| HDO 130 3   | 15.2  | 119                                    | 55160                   | 727                     | *                      | *                         | *                            | *                            | *                             | *                             | *                        | *                            | *                            | 477                           |                               |
| HDO 130 3   | 18.3  | 99                                     | 56980                   | 625                     | *                      | *                         | *                            | *                            | 255                           | 325                           | *                        | *                            | *                            | 323                           | 545                           |
| HDO 130 3   | 19.9  | 90                                     | 62200                   | 625                     | *                      | *                         | *                            | *                            | 257                           | 327                           | *                        | *                            | *                            | 325                           | 547                           |
| HDO 130 3   | 22.6  | 80                                     | 59950                   | 531                     | *                      | 224                       | *                            | *                            | 284                           | 354                           | *                        | *                            | 236                          | 352                           | 574                           |
| HDO 130 3   | 24.7  | 73                                     | 62590                   | 508                     | *                      | 225                       | *                            | *                            | 285                           | 355                           | *                        | *                            | 237                          | 353                           | 575                           |
| HDO 130 3   | 28.3  | 64                                     | 65230                   | 462                     | *                      | 237                       | *                            | 199                          | 297                           | 367                           | 199                      | *                            | 249                          | 365                           | 587                           |
| HDO 130 3   | 30.9  | 58                                     | 62590                   | 406                     | *                      | 238                       | 169                          | 200                          | 298                           | 368                           | 200                      | 182                          | 250                          | 366                           | 588                           |
| HDO 130 3   | 34.9  | 52                                     | 64510                   | 371                     | *                      | 246                       | 177                          | 208                          | 306                           | 376                           | 208                      | 190                          | 258                          | 374                           | —                             |
| HDO 130 3   | 38.3  | 47                                     | 62590                   | 328                     | *                      | 268                       | 199                          | 230                          | 328                           | —                             | 230                      | 212                          | 280                          | 396                           | —                             |
| HDO 130 3   | 43.8  | 41                                     | 64790                   | 296                     | 135                    | 275                       | 206                          | 237                          | 335                           | —                             | 237                      | 219                          | 287                          | 403                           | —                             |
| HDO 130 3   | 47.8  | 38                                     | 62590                   | 262                     | 136                    | 276                       | 207                          | 238                          | 336                           | —                             | 238                      | 220                          | 288                          | —                             | —                             |
| HDO 130 3   | 54.0  | 33                                     | 61210                   | 227                     | 141                    | 281                       | 212                          | 243                          | —                             | —                             | 243                      | 225                          | 293                          | —                             | —                             |
| HDO 130 3   | 59.0  | 31                                     | 62330                   | 212                     | 142                    | 282                       | 213                          | —                            | —                             | —                             | 244                      | 226                          | —                            | —                             | —                             |
| HDO 130 3   | 67.1  | 26.8                                   | 58960                   | 176                     | 142                    | 282                       | 213                          | —                            | —                             | —                             | 244                      | 226                          | —                            | —                             | —                             |
| HDO 130 4   | 71.5  | 25.2                                   | 64720                   | 185                     | 110                    | 217                       | 165                          | 190                          | —                             | —                             | 188                      | 176                          | 229                          | —                             | —                             |
| HDO 130 4   | 78.1  | 23.1                                   | 61990                   | 162                     | 110                    | 217                       | 165                          | —                            | —                             | —                             | 188                      | 176                          | —                            | —                             | —                             |
| HDO 130 4   | 88.2  | 20.4                                   | 64510                   | 149                     | 111                    | 218                       | 166                          | —                            | —                             | —                             | 189                      | 177                          | —                            | —                             | —                             |
| HDO 130 4   | 96.3  | 18.7                                   | 62590                   | 133                     | 112                    | 219                       | 167                          | —                            | —                             | —                             | 190                      | 178                          | —                            | —                             | —                             |
| HDO 130 4   | 111.2 | 16.2                                   | 65230                   | 120                     | 116                    | 223                       | 171                          | —                            | —                             | —                             | 194                      | 182                          | —                            | —                             | —                             |
| HDO 130 4   | 121.4 | 14.8                                   | 62590                   | 105                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 141.3 | 12.7                                   | 65230                   | 94                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 154.3 | 11.7                                   | 66770                   | 88                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 174.3 | 10.3                                   | 69570                   | 82                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 190.3 | 9.5                                    | 66770                   | 72                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 219.1 | 8.2                                    | 65230                   | 61                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 239.1 | 7.5                                    | 66770                   | 57                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 270.2 | 6.7                                    | 69570                   | 53                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 294.9 | 6.1                                    | 66770                   | 46                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 335.6 | 5.4                                    | 63140                   | 38                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |

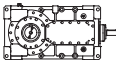
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 130

$n_1 = 1500 \text{ min}^{-1}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                    |                       |                       |                        |                        |                   |                       |                       |                        |                        |
|---|-------|-------------------------------|----------------|----------------|--------------------------|--------------------|-----------------------|-----------------------|------------------------|------------------------|-------------------|-----------------------|-----------------------|------------------------|------------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TMCR A5}$<br>[kW] | $P_{TMCR A9}$<br>[kW] | $P_{TMCR A21}$<br>[kW] | $P_{TMCR A34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCR W5}$<br>[kW] | $P_{TMCR W9}$<br>[kW] | $P_{TMCR W21}$<br>[kW] | $P_{TMCR W34}$<br>[kW] |
| HDO 130 2   | 5.7   | 263                           | 43810          | 1255           | *                        | *                  | *                     | *                     | 640                    | ●                      | *                 | *                     | *                     | 514                    | ●                      |
| HDO 130 2   | 6.2   | 241                           | 45370          | 1191           | *                        | *                  | *                     | *                     | 647                    |                        | *                 | *                     | *                     | 521                    |                        |
| HDO 130 2   | 7.1   | 212                           | 47000          | 1084           | *                        | *                  | *                     | *                     | 656                    |                        | *                 | *                     | *                     | 530                    |                        |
| HDO 130 2   | 7.7   | 194                           | 48650          | 1031           | *                        | *                  | *                     | 416                   | 659                    |                        | *                 | *                     | *                     | 533                    |                        |
| HDO 130 2   | 8.8   | 171                           | 50380          | 939            | *                        | 413                | *                     | 423                   | 666                    |                        | *                 | *                     | 380                   | 540                    |                        |
| HDO 130 2   | 9.6   | 156                           | 51050          | 866            | *                        | 443                | 375                   | 453                   | 696                    |                        | *                 | *                     | 410                   | 570                    |                        |
| HDO 130 2   | 11.0  | 137                           | 52950          | 789            | *                        | 448                | 380                   | 458                   | 701                    |                        | *                 | 321                   | 415                   | 575                    |                        |
| HDO 130 2   | 12.0  | 125                           | 53660          | 734            | *                        | 467                | 399                   | 477                   | 720                    |                        | 331               | 340                   | 434                   | 594                    |                        |
| HDO 130 2   | 13.6  | 110                           | 55730          | 670            | *                        | 471                | 403                   | 481                   | 724                    |                        | 335               | 344                   | 438                   | 598                    |                        |
| HDO 130 3   | 15.2  | 99                            | 58470          | 642            | *                        | 260                | *                     | 278                   | 454                    | 580                    | *                 | *                     | *                     | 362                    | 584                    |
| HDO 130 3   | 18.3  | 82                            | 60430          | 552            | *                        | 313                | 274                   | 331                   | 507                    | 633                    | 249               | 231                   | 299                   | 415                    | 637                    |
| HDO 130 3   | 19.9  | 75                            | 63770          | 534            | *                        | 314                | 275                   | 332                   | 508                    | 634                    | 250               | 232                   | 300                   | 416                    | 638                    |
| HDO 130 3   | 22.6  | 66                            | 63570          | 469            | *                        | 335                | 296                   | 353                   | 529                    | —                      | 271               | 253                   | 321                   | 437                    | 659                    |
| HDO 130 3   | 24.7  | 61                            | 63380          | 428            | *                        | 336                | 297                   | 354                   | 530                    | —                      | 272               | 254                   | 322                   | 438                    | —                      |
| HDO 130 3   | 28.3  | 53                            | 65810          | 389            | 179                      | 345                | 306                   | 363                   | 539                    | —                      | 281               | 263                   | 331                   | 447                    | —                      |
| HDO 130 3   | 30.9  | 49                            | 63010          | 341            | 179                      | 345                | 306                   | 363                   | —                      | —                      | 281               | 263                   | 331                   | 447                    | —                      |
| HDO 130 3   | 34.9  | 43                            | 65470          | 313            | 186                      | 352                | 313                   | 370                   | —                      | —                      | 288               | 270                   | 338                   | —                      | —                      |
| HDO 130 3   | 38.3  | 39                            | 62680          | 273            | 203                      | 369                | 330                   | —                     | —                      | —                      | 305               | 287                   | —                     | —                      | —                      |
| HDO 130 3   | 43.8  | 34                            | 65130          | 248            | 208                      | 374                | 335                   | —                     | —                      | —                      | 310               | 292                   | —                     | —                      | —                      |
| HDO 130 3   | 47.8  | 31                            | 62370          | 218            | 209                      | 375                | 336                   | —                     | —                      | —                      | 311               | 293                   | —                     | —                      | —                      |
| HDO 130 3   | 54.0  | 27.8                          | 64840          | 200            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 59.0  | 25.4                          | 62100          | 176            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 67.1  | 22.3                          | 62420          | 155            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 71.5  | 21.0                          | 65760          | 157            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 78.1  | 19.2                          | 63000          | 137            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 88.2  | 17.0                          | 67870          | 131            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 96.3  | 15.6                          | 65030          | 115            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 111.2 | 13.5                          | 69570          | 107            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 121.4 | 12.4                          | 66770          | 94             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 141.3 | 10.6                          | 69570          | 84             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 154.3 | 9.7                           | 66770          | 74             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 174.3 | 8.6                           | 69570          | 68             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 190.3 | 7.9                           | 66770          | 60             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 219.1 | 6.8                           | 69570          | 54             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 239.1 | 6.3                           | 66770          | 48             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 270.2 | 5.6                           | 69570          | 44             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 294.9 | 5.1                           | 66770          | 39             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 335.6 | 4.5                           | 63140          | 32             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |

HDO

\* 

— Thermal verification not necessary



**HDO**

# HDO 130 n<sub>1</sub> = 1500 min<sup>-1</sup>

|           | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                              |                              |                               |                               |                          |                              |                              |                               |                               |
|-----------|-------|--|-------------------------|-------------------------|------------------------|---------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|--------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
|           |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR A5</sub><br>[kW] | P <sub>TMCR A9</sub><br>[kW] | P <sub>TMCR A21</sub><br>[kW] | P <sub>TMCR A34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCR W5</sub><br>[kW] | P <sub>TMCR W9</sub><br>[kW] | P <sub>TMCR W21</sub><br>[kW] | P <sub>TMCR W34</sub><br>[kW] |
| HDO 130 2 | 5.7   | 263                                    | 43810                   | 1255                    | *                      | *                         | *                            | *                            | *                             | ●                             | *                        | *                            | *                            | *                             | ●                             |
| HDO 130 2 | 6.2   | 241                                    | 45370                   | 1191                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |
| HDO 130 2 | 7.1   | 212                                    | 47000                   | 1084                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 448                           |                               |
| HDO 130 2 | 7.7   | 194                                    | 48650                   | 1031                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 451                           |                               |
| HDO 130 2 | 8.8   | 171                                    | 50380                   | 939                     | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 458                           |                               |
| HDO 130 2 | 9.6   | 156                                    | 51050                   | 866                     | *                      | *                         | *                            | *                            | 394                           |                               | *                        | *                            | *                            | 488                           |                               |
| HDO 130 2 | 11.0  | 137                                    | 52950                   | 789                     | *                      | *                         | *                            | *                            | 399                           |                               | *                        | *                            | 333                          | 493                           |                               |
| HDO 130 2 | 12.0  | 125                                    | 53660                   | 734                     | *                      | 320                       | *                            | *                            | 418                           |                               | *                        | *                            | 352                          | 512                           |                               |
| HDO 130 2 | 13.6  | 110                                    | 55730                   | 670                     | *                      | 324                       | *                            | 287                          | 422                           |                               | *                        | *                            | 356                          | 516                           |                               |
| HDO 130 3 | 15.2  | 99                                     | 58470                   | 642                     | *                      | *                         | *                            | *                            | *                             | 300                           | *                        | *                            | *                            | 298                           | 520                           |
| HDO 130 3 | 18.3  | 82                                     | 60430                   | 552                     | *                      | *                         | *                            | *                            | 283                           | 353                           | *                        | *                            | 235                          | 351                           | 573                           |
| HDO 130 3 | 19.9  | 75                                     | 63770                   | 534                     | *                      | *                         | *                            | *                            | 284                           | 354                           | *                        | *                            | 236                          | 352                           | 574                           |
| HDO 130 3 | 22.6  | 66                                     | 63570                   | 469                     | *                      | 227                       | *                            | 207                          | 305                           | 375                           | 207                      | 189                          | 257                          | 373                           | 595                           |
| HDO 130 3 | 24.7  | 61                                     | 63380                   | 428                     | *                      | 228                       | 177                          | 208                          | 306                           | 376                           | 208                      | 190                          | 258                          | 374                           | 596                           |
| HDO 130 3 | 28.3  | 53                                     | 65810                   | 389                     | *                      | 236                       | 185                          | 216                          | 314                           | 384                           | 216                      | 198                          | 266                          | 382                           | 604                           |
| HDO 130 3 | 30.9  | 49                                     | 63010                   | 341                     | *                      | 237                       | 186                          | 217                          | 315                           | 385                           | 217                      | 199                          | 267                          | 383                           | —                             |
| HDO 130 3 | 34.9  | 43                                     | 65470                   | 313                     | *                      | 244                       | 193                          | 224                          | 322                           | —                             | 224                      | 206                          | 274                          | 390                           | —                             |
| HDO 130 3 | 38.3  | 39                                     | 62680                   | 273                     | 139                    | 261                       | 210                          | 241                          | 339                           | —                             | 241                      | 223                          | 291                          | —                             | —                             |
| HDO 130 3 | 43.8  | 34                                     | 65130                   | 248                     | 144                    | 266                       | 215                          | 246                          | 344                           | —                             | 246                      | 228                          | 296                          | —                             | —                             |
| HDO 130 3 | 47.8  | 31                                     | 62370                   | 218                     | 145                    | 267                       | 216                          | 247                          | —                             | —                             | 247                      | 229                          | —                            | —                             | —                             |
| HDO 130 3 | 54.0  | 27.8                                   | 64840                   | 200                     | 149                    | 271                       | 220                          | —                            | —                             | —                             | 251                      | 233                          | —                            | —                             | —                             |
| HDO 130 3 | 59.0  | 25.4                                   | 62100                   | 176                     | 149                    | 271                       | 220                          | —                            | —                             | —                             | 251                      | 233                          | —                            | —                             | —                             |
| HDO 130 3 | 67.1  | 22.3                                   | 62420                   | 155                     | 149                    | 271                       | 220                          | —                            | —                             | —                             | 251                      | 233                          | —                            | —                             | —                             |
| HDO 130 4 | 71.5  | 21.0                                   | 65760                   | 157                     | 115                    | 208                       | 170                          | —                            | —                             | —                             | 193                      | 181                          | —                            | —                             | —                             |
| HDO 130 4 | 78.1  | 19.2                                   | 63000                   | 137                     | 115                    | 208                       | 170                          | —                            | —                             | —                             | 193                      | 181                          | —                            | —                             | —                             |
| HDO 130 4 | 88.2  | 17.0                                   | 67870                   | 131                     | 116                    | 209                       | 171                          | —                            | —                             | —                             | 194                      | 182                          | —                            | —                             | —                             |
| HDO 130 4 | 96.3  | 15.6                                   | 65030                   | 115                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 111.2 | 13.5                                   | 69570                   | 107                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 121.4 | 12.4                                   | 66770                   | 94                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 141.3 | 10.6                                   | 69570                   | 84                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 154.3 | 9.7                                    | 66770                   | 74                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 174.3 | 8.6                                    | 69570                   | 68                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 190.3 | 7.9                                    | 66770                   | 60                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 219.1 | 6.8                                    | 69570                   | 54                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 239.1 | 6.3                                    | 66770                   | 48                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 270.2 | 5.6                                    | 69570                   | 44                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 294.9 | 5.1                                    | 66770                   | 39                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4 | 335.6 | 4.5                                    | 63140                   | 32                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |

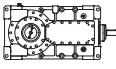
\* BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 130

$n_1 = 1200 \text{ min}^{-1}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                    |                       |                       |                        |                        |                   |                       |                       |                        |                        |
|---|-------|-------------------------------|----------------|----------------|--------------------------|--------------------|-----------------------|-----------------------|------------------------|------------------------|-------------------|-----------------------|-----------------------|------------------------|------------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TMCR A5}$<br>[kW] | $P_{TMCR A9}$<br>[kW] | $P_{TMCR A21}$<br>[kW] | $P_{TMCR A34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCR W5}$<br>[kW] | $P_{TMCR W9}$<br>[kW] | $P_{TMCR W21}$<br>[kW] | $P_{TMCR W34}$<br>[kW] |
| HDO 130 2   | 5.7   | 210                           | 46840          | 1074           | *                        | *                  | *                     | 432                   | 675                    | ●                      | *                 | *                     | *                     | 549                    | ●                      |
| HDO 130 2   | 6.2   | 193                           | 48520          | 1019           | *                        | *                  | *                     | 438                   | 681                    |                        | *                 | *                     | *                     | 555                    |                        |
| HDO 130 2   | 7.1   | 169                           | 50250          | 927            | *                        | 410                | *                     | 445                   | 688                    |                        | *                 | *                     | 402                   | 562                    |                        |
| HDO 130 2   | 7.7   | 156                           | 52030          | 882            | *                        | 412                | 369                   | 447                   | 690                    |                        | *                 | *                     | 404                   | 564                    |                        |
| HDO 130 2   | 8.8   | 137                           | 53860          | 803            | *                        | 418                | 375                   | 453                   | 696                    |                        | *                 | *                     | 410                   | 570                    |                        |
| HDO 130 2   | 9.6   | 124                           | 54590          | 741            | *                        | 441                | 398                   | 476                   | 719                    |                        | 330               | 339                   | 433                   | 593                    |                        |
| HDO 130 2   | 11.0  | 109                           | 56600          | 675            | *                        | 445                | 402                   | 480                   | 723                    |                        | 334               | 343                   | 437                   | 597                    |                        |
| HDO 130 2   | 12.0  | 100                           | 57380          | 628            | *                        | 460                | 417                   | 495                   | 738                    |                        | 349               | 358                   | 452                   | 612                    |                        |
| HDO 130 2   | 13.6  | 88                            | 59580          | 573            | 245                      | 463                | 420                   | 498                   | 741                    |                        | 352               | 361                   | 455                   | 615                    |                        |
| HDO 130 3   | 15.2  | 79                            | 58850          | 517            | *                        | 276                | 253                   | 310                   | 486                    | 612                    | 228               | 210                   | 278                   | 394                    | 616                    |
| HDO 130 3   | 18.3  | 66                            | 64610          | 472            | *                        | 317                | 294                   | 351                   | 527                    | —                      | 269               | 251                   | 319                   | 435                    | 657                    |
| HDO 130 3   | 19.9  | 60                            | 63370          | 424            | *                        | 318                | 295                   | 352                   | 528                    | —                      | 270               | 252                   | 320                   | 436                    | —                      |
| HDO 130 3   | 22.6  | 53                            | 65610          | 387            | 184                      | 334                | 311                   | 368                   | 544                    | —                      | 286               | 268                   | 336                   | 452                    | —                      |
| HDO 130 3   | 24.7  | 49                            | 63010          | 341            | 185                      | 335                | 312                   | 369                   | —                      | —                      | 287               | 269                   | 337                   | 453                    | —                      |
| HDO 130 3   | 28.3  | 42                            | 65450          | 309            | 192                      | 342                | 319                   | —                     | —                      | —                      | 294               | 276                   | 344                   | —                      | —                      |
| HDO 130 3   | 30.9  | 39                            | 62670          | 271            | 192                      | 342                | 319                   | —                     | —                      | —                      | 294               | 276                   | —                     | —                      | —                      |
| HDO 130 3   | 34.9  | 34                            | 65130          | 249            | 197                      | 347                | 324                   | —                     | —                      | —                      | 299               | 281                   | —                     | —                      | —                      |
| HDO 130 3   | 38.3  | 31                            | 62370          | 218            | 211                      | 361                | 338                   | —                     | —                      | —                      | 313               | 295                   | —                     | —                      | —                      |
| HDO 130 3   | 43.8  | 27.4                          | 64820          | 198            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 47.8  | 25.1                          | 62090          | 173            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 54.0  | 22.2                          | 65210          | 161            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 59.0  | 20.3                          | 62470          | 141            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 67.1  | 17.9                          | 62800          | 125            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 71.5  | 16.8                          | 68000          | 130            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 78.1  | 15.4                          | 65160          | 114            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 88.2  | 13.6                          | 69570          | 107            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 96.3  | 12.5                          | 66770          | 94             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 111.2 | 10.8                          | 69570          | 85             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 121.4 | 9.9                           | 66770          | 75             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 141.3 | 8.5                           | 69570          | 67             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 154.3 | 7.8                           | 66770          | 59             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 174.3 | 6.9                           | 69570          | 54             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 190.3 | 6.3                           | 66770          | 48             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 219.1 | 5.5                           | 69570          | 43             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 239.1 | 5.0                           | 66770          | 38             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 270.2 | 4.4                           | 69570          | 35             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 294.9 | 4.1                           | 66770          | 31             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 335.6 | 3.6                           | 63140          | 26             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |

HDO

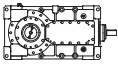
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDO**

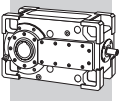
**HDO 130** **n<sub>1</sub> = 1200 min<sup>-1</sup>**

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                              |                              |                               |                               |                          |                              |                              |                               |                               |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|--------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR A5</sub><br>[kW] | P <sub>TMCR A9</sub><br>[kW] | P <sub>TMCR A21</sub><br>[kW] | P <sub>TMCR A34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCR W5</sub><br>[kW] | P <sub>TMCR W9</sub><br>[kW] | P <sub>TMCR W21</sub><br>[kW] | P <sub>TMCR W34</sub><br>[kW] |
| HDO 130 2   | 5.7   | 210                                    | 46840                   | 1074                    | *                      | *                         | *                            | *                            | *                             | ●                             | *                        | *                            | *                            | 467                           | ●                             |
| HDO 130 2   | 6.2   | 193                                    | 48520                   | 1019                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 472                           |                               |
| HDO 130 2   | 7.1   | 169                                    | 50250                   | 927                     | *                      | *                         | *                            | *                            | 385                           |                               | *                        | *                            | *                            | 479                           |                               |
| HDO 130 2   | 7.7   | 156                                    | 52030                   | 882                     | *                      | *                         | *                            | *                            | 388                           |                               | *                        | *                            | *                            | 482                           |                               |
| HDO 130 2   | 8.8   | 137                                    | 53860                   | 803                     | *                      | *                         | *                            | *                            | 393                           |                               | *                        | *                            | 327                          | 487                           |                               |
| HDO 130 2   | 9.6   | 124                                    | 54590                   | 741                     | *                      | 301                       | *                            | *                            | 417                           |                               | *                        | *                            | 351                          | 511                           |                               |
| HDO 130 2   | 11.0  | 109                                    | 56600                   | 675                     | *                      | 305                       | *                            | 286                          | 421                           |                               | *                        | *                            | 355                          | 515                           |                               |
| HDO 130 2   | 12.0  | 100                                    | 57380                   | 628                     | *                      | 320                       | 257                          | 301                          | 436                           |                               | 267                      | 276                          | 370                          | 530                           |                               |
| HDO 130 2   | 13.6  | 88                                     | 59580                   | 573                     | *                      | 323                       | 260                          | 304                          | 439                           |                               | 270                      | 279                          | 373                          | 533                           |                               |
| HDO 130 3   | 15.2  | 79                                     | 58850                   | 517                     | *                      | *                         | *                            | *                            | 261                           | 331                           | *                        | *                            | 213                          | 329                           | 551                           |
| HDO 130 3   | 18.3  | 66                                     | 64610                   | 472                     | *                      | 213                       | *                            | 205                          | 303                           | 373                           | 205                      | *                            | 255                          | 371                           | 593                           |
| HDO 130 3   | 19.9  | 60                                     | 63370                   | 424                     | *                      | 214                       | 175                          | 206                          | 304                           | 374                           | 206                      | 188                          | 256                          | 372                           | 594                           |
| HDO 130 3   | 22.6  | 53                                     | 65610                   | 387                     | *                      | 230                       | 191                          | 222                          | 320                           | 390                           | 222                      | 204                          | 272                          | 388                           | —                             |
| HDO 130 3   | 24.7  | 49                                     | 63010                   | 341                     | *                      | 231                       | 192                          | 223                          | 321                           | 391                           | 223                      | 205                          | 273                          | 389                           | —                             |
| HDO 130 3   | 28.3  | 42                                     | 65450                   | 309                     | 127                    | 237                       | 198                          | 229                          | 327                           | —                             | 229                      | 211                          | 279                          | 395                           | —                             |
| HDO 130 3   | 30.9  | 39                                     | 62670                   | 271                     | 128                    | 238                       | 199                          | 230                          | 328                           | —                             | 230                      | 212                          | 280                          | —                             | —                             |
| HDO 130 3   | 34.9  | 34                                     | 65130                   | 249                     | 133                    | 243                       | 204                          | 235                          | 333                           | —                             | 235                      | 217                          | 285                          | —                             | —                             |
| HDO 130 3   | 38.3  | 31                                     | 62370                   | 218                     | 147                    | 257                       | 218                          | 249                          | —                             | —                             | 249                      | 231                          | —                            | —                             | —                             |
| HDO 130 3   | 43.8  | 27.4                                   | 64820                   | 198                     | 151                    | 261                       | 222                          | —                            | —                             | —                             | 253                      | 235                          | —                            | —                             | —                             |
| HDO 130 3   | 47.8  | 25.1                                   | 62090                   | 173                     | 151                    | 261                       | 222                          | —                            | —                             | —                             | 253                      | 235                          | —                            | —                             | —                             |
| HDO 130 3   | 54.0  | 22.2                                   | 65210                   | 161                     | 154                    | 264                       | 225                          | —                            | —                             | —                             | 256                      | 238                          | —                            | —                             | —                             |
| HDO 130 3   | 59.0  | 20.3                                   | 62470                   | 141                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 3   | 67.1  | 17.9                                   | 62800                   | 125                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 71.5  | 16.8                                   | 68000                   | 130                     | 119                    | 203                       | 174                          | —                            | —                             | —                             | 197                      | 185                          | —                            | —                             | —                             |
| HDO 130 4   | 78.1  | 15.4                                   | 65160                   | 114                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 88.2  | 13.6                                   | 69570                   | 107                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 96.3  | 12.5                                   | 66770                   | 94                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 111.2 | 10.8                                   | 69570                   | 85                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 121.4 | 9.9                                    | 66770                   | 75                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 141.3 | 8.5                                    | 69570                   | 67                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 154.3 | 7.8                                    | 66770                   | 59                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 174.3 | 6.9                                    | 69570                   | 54                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 190.3 | 6.3                                    | 66770                   | 48                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 219.1 | 5.5                                    | 69570                   | 43                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 239.1 | 5.0                                    | 66770                   | 38                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 270.2 | 4.4                                    | 69570                   | 35                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 294.9 | 4.1                                    | 66770                   | 31                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 335.6 | 3.6                                    | 63140                   | 26                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |

\*  BONFIGLIOLI TECHNICAL SERVICE

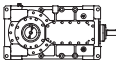
— Thermal verification not necessary





# HDO 130

$n_1 = 1000 \text{ min}^{-1}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                    |                       |                       |                        |                        |                   |                       |                       |                        |                        |
|---|-------|-------------------------------|----------------|----------------|--------------------------|--------------------|-----------------------|-----------------------|------------------------|------------------------|-------------------|-----------------------|-----------------------|------------------------|------------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TMCR A5}$<br>[kW] | $P_{TMCR A9}$<br>[kW] | $P_{TMCR A21}$<br>[kW] | $P_{TMCR A34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCR W5}$<br>[kW] | $P_{TMCR W9}$<br>[kW] | $P_{TMCR W21}$<br>[kW] | $P_{TMCR W34}$<br>[kW] |
| HDO 130 2   | 5.7   | 175                           | 49480          | 945            | *                        | *                  | 378                   | 456                   | 699                    | ●                      | *                 | *                     | 413                   | 573                    | ●                      |
| HDO 130 2   | 6.2   | 160                           | 51240          | 897            | *                        | 378                | 383                   | 461                   | 704                    |                        | *                 | *                     | 418                   | 578                    |                        |
| HDO 130 2   | 7.1   | 141                           | 53080          | 816            | *                        | 384                | 389                   | 467                   | 710                    |                        | *                 | 330                   | 424                   | 584                    |                        |
| HDO 130 2   | 7.7   | 130                           | 54940          | 776            | *                        | 386                | 391                   | 469                   | 712                    |                        | 323               | 332                   | 426                   | 586                    |                        |
| HDO 130 2   | 8.8   | 114                           | 56890          | 707            | *                        | 390                | 395                   | 473                   | 716                    |                        | 327               | 336                   | 430                   | 590                    |                        |
| HDO 130 2   | 9.6   | 104                           | 57650          | 652            | *                        | 409                | 414                   | 492                   | 735                    |                        | 346               | 355                   | 449                   | 609                    |                        |
| HDO 130 2   | 11.0  | 91                            | 59790          | 594            | 242                      | 412                | 417                   | 495                   | 738                    |                        | 349               | 358                   | 452                   | 612                    |                        |
| HDO 130 2   | 12.0  | 84                            | 59760          | 545            | 254                      | 424                | 429                   | 507                   | 750                    |                        | 361               | 370                   | 464                   | 624                    |                        |
| HDO 130 2   | 13.6  | 73                            | 62940          | 504            | 257                      | 427                | 432                   | 510                   | —                      |                        | 364               | 373                   | 467                   | 627                    |                        |
| HDO 130 3   | 15.2  | 66                            | 58850          | 431            | *                        | 263                | 274                   | 331                   | 507                    | —                      | 249               | 231                   | 299                   | 415                    | 637                    |
| HDO 130 3   | 18.3  | 55                            | 65100          | 397            | 181                      | 297                | 308                   | 365                   | 541                    | —                      | 283               | 265                   | 333                   | 449                    | —                      |
| HDO 130 3   | 19.9  | 50                            | 63060          | 352            | 181                      | 297                | 308                   | 365                   | —                      | —                      | 283               | 265                   | 333                   | 449                    | —                      |
| HDO 130 3   | 22.6  | 44                            | 65510          | 322            | 195                      | 311                | 322                   | 379                   | —                      | —                      | 297               | 279                   | 347                   | —                      | —                      |
| HDO 130 3   | 24.7  | 41                            | 62730          | 283            | 195                      | 311                | 322                   | —                     | —                      | —                      | 297               | 279                   | 347                   | —                      | —                      |
| HDO 130 3   | 28.3  | 35                            | 65170          | 257            | 201                      | 317                | 328                   | —                     | —                      | —                      | 303               | 285                   | —                     | —                      | —                      |
| HDO 130 3   | 30.9  | 32                            | 62410          | 225            | 201                      | 317                | 328                   | —                     | —                      | —                      | 303               | 285                   | —                     | —                      | —                      |
| HDO 130 3   | 34.9  | 28.7                          | 64880          | 207            | 205                      | 321                | 332                   | —                     | —                      | —                      | 307               | 289                   | —                     | —                      | —                      |
| HDO 130 3   | 38.3  | 26.1                          | 62140          | 181            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 43.8  | 22.8                          | 64950          | 165            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 47.8  | 20.9                          | 62210          | 145            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 54.0  | 18.5                          | 67010          | 138            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 59.0  | 17.0                          | 64200          | 121            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 3   | 67.1  | 14.9                          | 63140          | 105            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 71.5  | 14.0                          | 69570          | 110            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 78.1  | 12.8                          | 66770          | 97             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 88.2  | 11.3                          | 69570          | 90             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 96.3  | 10.4                          | 66770          | 79             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 111.2 | 9.0                           | 69570          | 71             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 121.4 | 8.2                           | 66770          | 62             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 141.3 | 7.1                           | 69570          | 56             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 154.3 | 6.5                           | 66770          | 49             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 174.3 | 5.7                           | 69570          | 45             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 190.3 | 5.3                           | 66770          | 40             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 219.1 | 4.6                           | 69570          | 36             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 239.1 | 4.2                           | 66770          | 32             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 270.2 | 3.7                           | 69570          | 29             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 294.9 | 3.4                           | 66770          | 26             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 130 4   | 335.6 | 3.0                           | 63140          | 21             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

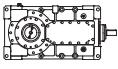
— Thermal verification not necessary





**HDO**

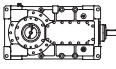
**HDO 130** **n<sub>1</sub> = 1000 min<sup>-1</sup>**

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                              |                              |                               |                               |                          |                              |                              |                               |                               |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|--------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR A5</sub><br>[kW] | P <sub>TMCR A9</sub><br>[kW] | P <sub>TMCR A21</sub><br>[kW] | P <sub>TMCR A34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCR W5</sub><br>[kW] | P <sub>TMCR W9</sub><br>[kW] | P <sub>TMCR W21</sub><br>[kW] | P <sub>TMCR W34</sub><br>[kW] |
| HDO 130 2   | 5.7   | 175                                    | 49480                   | 945                     | *                      | *                         | *                            | *                            | 397                           | ●                             | *                        | *                            | *                            | 491                           | ●                             |
| HDO 130 2   | 6.2   | 160                                    | 51240                   | 897                     | *                      | *                         | *                            | *                            | 402                           |                               | *                        | *                            | *                            | 496                           |                               |
| HDO 130 2   | 7.1   | 141                                    | 53080                   | 816                     | *                      | *                         | *                            | *                            | 407                           |                               | *                        | *                            | 341                          | 501                           |                               |
| HDO 130 2   | 7.7   | 130                                    | 54940                   | 776                     | *                      | *                         | *                            | *                            | 409                           |                               | *                        | *                            | 343                          | 503                           |                               |
| HDO 130 2   | 8.8   | 114                                    | 56890                   | 707                     | *                      | *                         | *                            | *                            | 414                           |                               | *                        | *                            | 348                          | 508                           |                               |
| HDO 130 2   | 9.6   | 104                                    | 57650                   | 652                     | *                      | 281                       | *                            | 297                          | 432                           |                               | 263                      | 272                          | 366                          | 526                           |                               |
| HDO 130 2   | 11.0  | 91                                     | 59790                   | 594                     | *                      | 285                       | 257                          | 301                          | 436                           |                               | 267                      | 276                          | 370                          | 530                           |                               |
| HDO 130 2   | 12.0  | 84                                     | 59760                   | 545                     | *                      | 297                       | 269                          | 313                          | 448                           |                               | 279                      | 288                          | 382                          | 542                           |                               |
| HDO 130 2   | 13.6  | 73                                     | 62940                   | 504                     | *                      | 299                       | 271                          | 315                          | 450                           |                               | 281                      | 290                          | 384                          | 544                           |                               |
| HDO 130 3   | 15.2  | 66                                     | 58850                   | 431                     | *                      | *                         | *                            | 185                          | 283                           | 353                           | 185                      | *                            | 235                          | 351                           | 573                           |
| HDO 130 3   | 18.3  | 55                                     | 65100                   | 397                     | *                      | 201                       | 187                          | 218                          | 316                           | 386                           | 218                      | 200                          | 268                          | 384                           | 606                           |
| HDO 130 3   | 19.9  | 50                                     | 63060                   | 352                     | *                      | 202                       | 188                          | 219                          | 317                           | 387                           | 219                      | 201                          | 269                          | 385                           | —                             |
| HDO 130 3   | 22.6  | 44                                     | 65510                   | 322                     | 130                    | 215                       | 201                          | 232                          | 330                           | —                             | 232                      | 214                          | 282                          | 398                           | —                             |
| HDO 130 3   | 24.7  | 41                                     | 62730                   | 283                     | 131                    | 216                       | 202                          | 233                          | 331                           | —                             | 233                      | 215                          | 283                          | —                             | —                             |
| HDO 130 3   | 28.3  | 35                                     | 65170                   | 257                     | 136                    | 221                       | 207                          | 238                          | 336                           | —                             | 238                      | 220                          | 288                          | —                             | —                             |
| HDO 130 3   | 30.9  | 32                                     | 62410                   | 225                     | 137                    | 222                       | 208                          | 239                          | —                             | —                             | 239                      | 221                          | 289                          | —                             | —                             |
| HDO 130 3   | 34.9  | 28.7                                   | 64880                   | 207                     | 141                    | 226                       | 212                          | —                            | —                             | —                             | 243                      | 225                          | —                            | —                             | —                             |
| HDO 130 3   | 38.3  | 26.1                                   | 62140                   | 181                     | 152                    | 237                       | 223                          | —                            | —                             | —                             | 254                      | 236                          | —                            | —                             | —                             |
| HDO 130 3   | 43.8  | 22.8                                   | 64950                   | 165                     | 155                    | 240                       | 226                          | —                            | —                             | —                             | 257                      | 239                          | —                            | —                             | —                             |
| HDO 130 3   | 47.8  | 20.9                                   | 62210                   | 145                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 3   | 54.0  | 18.5                                   | 67010                   | 138                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 3   | 59.0  | 17.0                                   | 64200                   | 121                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 3   | 67.1  | 14.9                                   | 63140                   | 105                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 71.5  | 14.0                                   | 69570                   | 110                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 78.1  | 12.8                                   | 66770                   | 97                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 88.2  | 11.3                                   | 69570                   | 90                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 96.3  | 10.4                                   | 66770                   | 79                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 111.2 | 9.0                                    | 69570                   | 71                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 121.4 | 8.2                                    | 66770                   | 62                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 141.3 | 7.1                                    | 69570                   | 56                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 154.3 | 6.5                                    | 66770                   | 49                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 174.3 | 5.7                                    | 69570                   | 45                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 190.3 | 5.3                                    | 66770                   | 40                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 219.1 | 4.6                                    | 69570                   | 36                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 239.1 | 4.2                                    | 66770                   | 32                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 270.2 | 3.7                                    | 69570                   | 29                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 294.9 | 3.4                                    | 66770                   | 26                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 130 4   | 335.6 | 3.0                                    | 63140                   | 21                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDO 140   |       |                               |                |                | $n_1 = 1800 \text{ min}^{-1}$ |                    |                       |                       |                        |                        |                   |                       |                       |                        |                        |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|--------------------|-----------------------|-----------------------|------------------------|------------------------|-------------------|-----------------------|-----------------------|------------------------|------------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                    |                       |                       |                        |                        |                   |                       |                       |                        |                        |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCR A5}$<br>[kW] | $P_{TMCR A9}$<br>[kW] | $P_{TMCR A21}$<br>[kW] | $P_{TMCR A34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCR W5}$<br>[kW] | $P_{TMCR W9}$<br>[kW] | $P_{TMCR W21}$<br>[kW] | $P_{TMCR W34}$<br>[kW] |
| HDO 140 2   | 6.6   | 274                           | 49490          | 1478           | *                             | *                  | *                     | *                     | *                      | ●                      | *                 | *                     | *                     | *                      | ●                      |
| HDO 140 2   | 7.3   | 248                           | 54750          | 1478           | *                             | *                  | *                     | *                     | 600                    |                        | *                 | *                     | *                     | *                      |                        |
| HDO 140 2   | 8.2   | 220                           | 61300          | 1473           | *                             | *                  | *                     | *                     | 613                    |                        | *                 | *                     | *                     | *                      |                        |
| HDO 140 2   | 9.0   | 200                           | 64270          | 1401           | *                             | *                  | *                     | *                     | 620                    |                        | *                 | *                     | *                     | *                      |                        |
| HDO 140 2   | 10.1  | 178                           | 65720          | 1276           | *                             | *                  | *                     | *                     | 629                    |                        | *                 | *                     | *                     | *                      |                        |
| HDO 140 2   | 11.3  | 160                           | 67420          | 1176           | *                             | *                  | *                     | *                     | 670                    |                        | *                 | *                     | *                     | 544                    |                        |
| HDO 140 2   | 12.6  | 142                           | 69060          | 1072           | *                             | 460                | *                     | 434                   | 677                    |                        | *                 | *                     | *                     | 551                    |                        |
| HDO 140 2   | 14.0  | 129                           | 66760          | 939            | *                             | 487                | 383                   | 461                   | 704                    |                        | *                 | *                     | 418                   | 578                    |                        |
| HDO 140 2   | 15.7  | 115                           | 72680          | 910            | *                             | 492                | 388                   | 466                   | 709                    |                        | *                 | *                     | 423                   | 583                    |                        |
| HDO 140 3   | 17.7  | 102                           | 64350          | 727            | *                             | *                  | *                     | *                     | 404                    | 530                    | *                 | *                     | *                     | 312                    | 534                    |
| HDO 140 3   | 19.9  | 90                            | 72270          | 727            | *                             | *                  | *                     | *                     | 407                    | 533                    | *                 | *                     | *                     | 315                    | 537                    |
| HDO 140 3   | 23.3  | 77                            | 72600          | 625            | *                             | 310                | *                     | 303                   | 479                    | 605                    | *                 | *                     | 271                   | 387                    | 609                    |
| HDO 140 3   | 26.0  | 69                            | 69020          | 531            | *                             | 337                | 273                   | 330                   | 506                    | 632                    | 248               | 230                   | 298                   | 414                    | 636                    |
| HDO 140 3   | 28.8  | 63                            | 76390          | 531            | *                             | 339                | 275                   | 332                   | 508                    | 634                    | 250               | 232                   | 300                   | 416                    | 638                    |
| HDO 140 3   | 32.5  | 55                            | 76280          | 470            | *                             | 352                | 288                   | 345                   | 521                    | —                      | 263               | 245                   | 313                   | 429                    | 651                    |
| HDO 140 3   | 36.0  | 50                            | 80850          | 450            | *                             | 354                | 290                   | 347                   | 523                    | —                      | 265               | 247                   | 315                   | 431                    | 653                    |
| HDO 140 3   | 40.1  | 45                            | 74300          | 371            | 172                           | 363                | 299                   | 356                   | 532                    | —                      | 274               | 256                   | 324                   | 440                    | —                      |
| HDO 140 3   | 44.4  | 41                            | 80850          | 365            | 173                           | 364                | 300                   | 357                   | 533                    | —                      | 275               | 257                   | 325                   | 441                    | —                      |
| HDO 140 3   | 50.4  | 36                            | 81510          | 324            | 203                           | 394                | 330                   | —                     | —                      | —                      | 305               | 287                   | 355                   | —                      | —                      |
| HDO 140 3   | 55.8  | 32                            | 80850          | 290            | 204                           | 395                | 331                   | —                     | —                      | —                      | 306               | 288                   | 356                   | —                      | —                      |
| HDO 140 3   | 62.2  | 28.9                          | 74300          | 239            | 210                           | 401                | 337                   | —                     | —                      | —                      | 312               | 294                   | —                     | —                      | —                      |
| HDO 140 3   | 68.8  | 26.2                          | 80850          | 235            | 211                           | 402                | 338                   | —                     | —                      | —                      | 313               | 295                   | —                     | —                      | —                      |
| HDO 140 3   | 77.3  | 23.3                          | 73920          | 191            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 82.3  | 21.9                          | 76010          | 189            | 164                           | 310                | 264                   | —                     | —                      | —                      | 242               | 230                   | —                     | —                      | —                      |
| HDO 140 4   | 91.1  | 19.8                          | 80850          | 181            | 165                           | 311                | 265                   | —                     | —                      | —                      | 243               | 231                   | —                     | —                      | —                      |
| HDO 140 4   | 101.5 | 17.7                          | 74300          | 150            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 112.3 | 16.0                          | 80850          | 147            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 128.0 | 14.1                          | 81510          | 130            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 141.6 | 12.7                          | 80850          | 117            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 162.7 | 11.1                          | 81510          | 102            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 180.0 | 10.0                          | 80850          | 92             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 198.3 | 9.1                           | 81510          | 84             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 219.5 | 8.2                           | 80850          | 75             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 252.1 | 7.1                           | 81510          | 66             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 279.0 | 6.5                           | 87060          | 64             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 311.0 | 5.8                           | 81180          | 53             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 344.1 | 5.2                           | 87060          | 52             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 386.6 | 4.7                           | 78870          | 42             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |

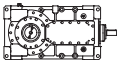
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDO**

**HDO 140** **n<sub>1</sub> = 1800 min<sup>-1</sup>**

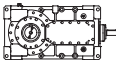
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                              |                              |                               |                               |                          |                              |                              |                               |                               |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|--------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR A5</sub><br>[kW] | P <sub>TMCR A9</sub><br>[kW] | P <sub>TMCR A21</sub><br>[kW] | P <sub>TMCR A34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCR W5</sub><br>[kW] | P <sub>TMCR W9</sub><br>[kW] | P <sub>TMCR W21</sub><br>[kW] | P <sub>TMCR W34</sub><br>[kW] |
| HDO 140 2   | 6.6   | 274                                    | 49490                   | 1478                    | *                      | *                         | *                            | *                            | *                             | ●                             | *                        | *                            | *                            | *                             | ●                             |
| HDO 140 2   | 7.3   | 248                                    | 54750                   | 1478                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |
| HDO 140 2   | 8.2   | 220                                    | 61300                   | 1473                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |
| HDO 140 2   | 9.0   | 200                                    | 64270                   | 1401                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |
| HDO 140 2   | 10.1  | 178                                    | 65720                   | 1276                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |
| HDO 140 2   | 11.3  | 160                                    | 67420                   | 1176                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |
| HDO 140 2   | 12.6  | 142                                    | 69060                   | 1072                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 465                           |                               |
| HDO 140 2   | 14.0  | 129                                    | 66760                   | 939                     | *                      | *                         | *                            | *                            | 398                           |                               | *                        | *                            | *                            | 492                           |                               |
| HDO 140 2   | 15.7  | 115                                    | 72680                   | 910                     | *                      | *                         | *                            | *                            | 403                           |                               | *                        | *                            | *                            | 497                           |                               |
| HDO 140 3   | 17.7  | 102                                    | 64350                   | 727                     | *                      | *                         | *                            | *                            | *                             | *                             | *                        | *                            | *                            | 467                           |                               |
| HDO 140 3   | 19.9  | 90                                     | 72270                   | 727                     | *                      | *                         | *                            | *                            | *                             | *                             | *                        | *                            | *                            | 471                           |                               |
| HDO 140 3   | 23.3  | 77                                     | 72600                   | 625                     | *                      | *                         | *                            | *                            | 252                           | 322                           | *                        | *                            | *                            | 320                           | 542                           |
| HDO 140 3   | 26.0  | 69                                     | 69020                   | 531                     | *                      | 220                       | *                            | *                            | 280                           | 350                           | *                        | *                            | 232                          | 348                           | 570                           |
| HDO 140 3   | 28.8  | 63                                     | 76390                   | 531                     | *                      | 221                       | *                            | *                            | 281                           | 351                           | *                        | *                            | 233                          | 349                           | 571                           |
| HDO 140 3   | 32.5  | 55                                     | 76280                   | 470                     | *                      | 235                       | *                            | 197                          | 295                           | 365                           | 197                      | *                            | 247                          | 363                           | 585                           |
| HDO 140 3   | 36.0  | 50                                     | 80850                   | 450                     | *                      | 236                       | *                            | 198                          | 296                           | 366                           | 198                      | *                            | 248                          | 364                           | 586                           |
| HDO 140 3   | 40.1  | 45                                     | 74300                   | 371                     | *                      | 246                       | 177                          | 208                          | 306                           | 376                           | 208                      | 190                          | 258                          | 374                           | —                             |
| HDO 140 3   | 44.4  | 41                                     | 80850                   | 365                     | *                      | 247                       | 178                          | 209                          | 307                           | 377                           | 209                      | 191                          | 259                          | 375                           | —                             |
| HDO 140 3   | 50.4  | 36                                     | 81510                   | 324                     | 137                    | 277                       | 208                          | 239                          | 337                           | —                             | 239                      | 221                          | 289                          | 405                           | —                             |
| HDO 140 3   | 55.8  | 32                                     | 80850                   | 290                     | 137                    | 277                       | 208                          | 239                          | 337                           | —                             | 239                      | 221                          | 289                          | 405                           | —                             |
| HDO 140 3   | 62.2  | 28.9                                   | 74300                   | 239                     | 143                    | 283                       | 214                          | 245                          | —                             | —                             | 245                      | 227                          | 295                          | —                             | —                             |
| HDO 140 3   | 68.8  | 26.2                                   | 80850                   | 235                     | 144                    | 284                       | 215                          | 246                          | —                             | —                             | 246                      | 228                          | 296                          | —                             | —                             |
| HDO 140 3   | 77.3  | 23.3                                   | 73920                   | 191                     | 145                    | 285                       | 216                          | —                            | —                             | —                             | 247                      | 229                          | —                            | —                             | —                             |
| HDO 140 4   | 82.3  | 21.9                                   | 76010                   | 189                     | 114                    | 221                       | 169                          | 194                          | —                             | —                             | 192                      | 180                          | 233                          | —                             | —                             |
| HDO 140 4   | 91.1  | 19.8                                   | 80850                   | 181                     | 114                    | 221                       | 169                          | 194                          | —                             | —                             | 192                      | 180                          | 233                          | —                             | —                             |
| HDO 140 4   | 101.5 | 17.7                                   | 74300                   | 150                     | 115                    | 222                       | 170                          | —                            | —                             | —                             | 193                      | 181                          | —                            | —                             | —                             |
| HDO 140 4   | 112.3 | 16.0                                   | 80850                   | 147                     | 116                    | 223                       | 171                          | —                            | —                             | —                             | 194                      | 182                          | —                            | —                             | —                             |
| HDO 140 4   | 128.0 | 14.1                                   | 81510                   | 130                     | 120                    | 227                       | 175                          | —                            | —                             | —                             | 198                      | 186                          | —                            | —                             | —                             |
| HDO 140 4   | 141.6 | 12.7                                   | 80850                   | 117                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4   | 162.7 | 11.1                                   | 81510                   | 102                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4   | 180.0 | 10.0                                   | 80850                   | 92                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4   | 198.3 | 9.1                                    | 81510                   | 84                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4   | 219.5 | 8.2                                    | 80850                   | 75                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4   | 252.1 | 7.1                                    | 81510                   | 66                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4   | 279.0 | 6.5                                    | 87060                   | 64                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4   | 311.0 | 5.8                                    | 81180                   | 53                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4   | 344.1 | 5.2                                    | 87060                   | 52                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4   | 386.6 | 4.7                                    | 78870                   | 42                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



HDO

| HDO 140   |       |  |                         |                         | n <sub>1</sub> = 1500 min <sup>-1</sup> |                           |                              |                              |                               |                               |                           |                              |                              |                               |                               |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|---------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
|   |       |  |                         |                         | t <sub>a</sub> = 20°C                   |                           |                              |                              |                               |                               |                           |                              |                              |                               |                               |
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR A5</sub><br>[kW] | P <sub>TMCR A9</sub><br>[kW] | P <sub>TMCR A21</sub><br>[kW] | P <sub>TMCR A34</sub><br>[kW] | P <sub>T SR</sub><br>[kW] | P <sub>TMCR W5</sub><br>[kW] | P <sub>TMCR W9</sub><br>[kW] | P <sub>TMCR W21</sub><br>[kW] | P <sub>TMCR W34</sub><br>[kW] |
| HDO 140 2   | 6.6   | 228                                    | 52260                   | 1301                    | *                                       | *                         | *                            | *                            | 640                           | ●                             | *                         | *                            | *                            | *                             | ●                             |
| HDO 140 2   | 7.3   | 206                                    | 57840                   | 1301                    | *                                       | *                         | *                            | *                            | 650                           |                               | *                         | *                            | *                            | 524                           |                               |
| HDO 140 2   | 8.2   | 184                                    | 64740                   | 1296                    | *                                       | *                         | *                            | *                            | 659                           |                               | *                         | *                            | *                            | 533                           |                               |
| HDO 140 2   | 9.0   | 167                                    | 67890                   | 1234                    | *                                       | *                         | *                            | *                            | 665                           |                               | *                         | *                            | *                            | 539                           |                               |
| HDO 140 2   | 10.1  | 148                                    | 69410                   | 1123                    | *                                       | *                         | *                            | *                            | 672                           |                               | *                         | *                            | *                            | 546                           |                               |
| HDO 140 2   | 11.3  | 133                                    | 71210                   | 1035                    | *                                       | 450                       | *                            | 460                          | 703                           |                               | *                         | *                            | 417                          | 577                           |                               |
| HDO 140 2   | 12.6  | 119                                    | 72940                   | 944                     | *                                       | 456                       | 388                          | 466                          | 709                           |                               | *                         | *                            | 423                          | 583                           |                               |
| HDO 140 2   | 14.0  | 108                                    | 69190                   | 811                     | *                                       | 476                       | 408                          | 486                          | 729                           |                               | 340                       | 349                          | 443                          | 603                           |                               |
| HDO 140 2   | 15.7  | 96                                     | 76770                   | 801                     | *                                       | 480                       | 412                          | 490                          | 733                           |                               | 344                       | 353                          | 447                          | 607                           |                               |
| HDO 140 3   | 17.7  | 85                                     | 68210                   | 642                     | *                                       | *                         | *                            | 275                          | 451                           | 577                           | *                         | *                            | *                            | 359                           | 581                           |
| HDO 140 3   | 19.9  | 75                                     | 76630                   | 642                     | *                                       | 259                       | *                            | 277                          | 453                           | 579                           | *                         | *                            | *                            | 361                           | 583                           |
| HDO 140 3   | 23.3  | 64                                     | 76960                   | 552                     | *                                       | 314                       | 275                          | 332                          | 508                           | 634                           | 250                       | 232                          | 300                          | 416                           | 638                           |
| HDO 140 3   | 26.0  | 58                                     | 73170                   | 469                     | *                                       | 336                       | 297                          | 354                          | 530                           | —                             | 272                       | 254                          | 322                          | 438                           | 660                           |
| HDO 140 3   | 28.8  | 52                                     | 80970                   | 469                     | *                                       | 337                       | 298                          | 355                          | 531                           | —                             | 273                       | 255                          | 323                          | 439                           | 661                           |
| HDO 140 3   | 32.5  | 46                                     | 80860                   | 415                     | 181                                     | 347                       | 308                          | 365                          | 541                           | —                             | 283                       | 265                          | 333                          | 449                           | —                             |
| HDO 140 3   | 36.0  | 42                                     | 82360                   | 382                     | 182                                     | 348                       | 309                          | 366                          | 542                           | —                             | 284                       | 266                          | 334                          | 450                           | —                             |
| HDO 140 3   | 40.1  | 37                                     | 79400                   | 330                     | 190                                     | 356                       | 317                          | 374                          | —                             | —                             | 292                       | 274                          | 342                          | —                             | —                             |
| HDO 140 3   | 44.4  | 34                                     | 81940                   | 308                     | 190                                     | 356                       | 317                          | —                            | —                             | —                             | 292                       | 274                          | 342                          | —                             | —                             |
| HDO 140 3   | 50.4  | 29.7                                   | 82500                   | 273                     | 213                                     | 379                       | 340                          | —                            | —                             | —                             | 315                       | 297                          | —                            | —                             | —                             |
| HDO 140 3   | 55.8  | 26.9                                   | 81520                   | 244                     | 214                                     | 380                       | 341                          | —                            | —                             | —                             | 316                       | 298                          | —                            | —                             | —                             |
| HDO 140 3   | 62.2  | 24.1                                   | 82170                   | 220                     | 219                                     | 385                       | 346                          | —                            | —                             | —                             | 321                       | 303                          | —                            | —                             | —                             |
| HDO 140 3   | 68.8  | 21.8                                   | 81170                   | 197                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 3   | 77.3  | 19.4                                   | 78870                   | 170                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 82.3  | 18.2                                   | 80550                   | 167                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 91.1  | 16.5                                   | 82350                   | 154                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 101.5 | 14.8                                   | 82170                   | 138                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 112.3 | 13.4                                   | 85000                   | 129                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 128.0 | 11.7                                   | 84810                   | 113                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 141.6 | 10.6                                   | 87060                   | 105                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 162.7 | 9.2                                    | 84810                   | 89                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 180.0 | 8.3                                    | 87060                   | 82                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 198.3 | 7.6                                    | 84810                   | 73                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 219.5 | 6.8                                    | 87060                   | 68                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 252.1 | 5.9                                    | 84810                   | 57                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 279.0 | 5.4                                    | 87060                   | 53                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 311.0 | 4.8                                    | 80940                   | 44                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 344.1 | 4.4                                    | 87060                   | 43                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |
| HDO 140 4   | 386.6 | 3.9                                    | 78870                   | 35                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                         | —                            | —                            | —                             | —                             |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



**HDO**

# HDO 140 n<sub>1</sub> = 1500 min<sup>-1</sup>

|           | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                              |                              |                               |                               |                          |                              |                              |                               |                               |     |
|-----------|-------|--|-------------------------|-------------------------|------------------------|---------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|--------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|-----|
|           |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR A5</sub><br>[kW] | P <sub>TMCR A9</sub><br>[kW] | P <sub>TMCR A21</sub><br>[kW] | P <sub>TMCR A34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCR W5</sub><br>[kW] | P <sub>TMCR W9</sub><br>[kW] | P <sub>TMCR W21</sub><br>[kW] | P <sub>TMCR W34</sub><br>[kW] |     |
| HDO 140 2 | 6.6   | 228                                    | 52260                   | 1301                    | *                      | *                         | *                            | *                            | *                             | ●                             | *                        | *                            | *                            | *                             | ●                             |     |
| HDO 140 2 | 7.3   | 206                                    | 57840                   | 1301                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |     |
| HDO 140 2 | 8.2   | 184                                    | 64740                   | 1296                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |     |
| HDO 140 2 | 9.0   | 167                                    | 67890                   | 1234                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | *                             |                               |     |
| HDO 140 2 | 10.1  | 148                                    | 69410                   | 1123                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 460                           |                               |     |
| HDO 140 2 | 11.3  | 133                                    | 71210                   | 1035                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 491                           |                               |     |
| HDO 140 2 | 12.6  | 119                                    | 72940                   | 944                     | *                      | *                         | *                            | *                            | 403                           |                               | *                        | *                            | *                            | 497                           |                               |     |
| HDO 140 2 | 14.0  | 108                                    | 69190                   | 811                     | *                      | 325                       | *                            | *                            | 423                           |                               | *                        | *                            | 357                          | 517                           |                               |     |
| HDO 140 2 | 15.7  | 96                                     | 76770                   | 801                     | *                      | 329                       | *                            | *                            | 427                           |                               | *                        | *                            | 361                          | 521                           |                               |     |
| HDO 140 3 | 17.7  | 85                                     | 68210                   | 642                     | *                      | *                         | *                            | *                            | *                             | 294                           | *                        | *                            | *                            | 292                           | 514                           |     |
| HDO 140 3 | 19.9  | 75                                     | 76630                   | 642                     | *                      | *                         | *                            | *                            | *                             | 297                           | *                        | *                            | *                            | 295                           | 517                           |     |
| HDO 140 3 | 23.3  | 64                                     | 76960                   | 552                     | *                      | *                         | *                            | *                            | *                             | 282                           | 352                      | *                            | *                            | 234                           | 350                           | 572 |
| HDO 140 3 | 26.0  | 58                                     | 73170                   | 469                     | *                      | 225                       | *                            | 205                          | 303                           | 373                           | 205                      | *                            | 255                          | 371                           | 593                           |     |
| HDO 140 3 | 28.8  | 52                                     | 80970                   | 469                     | *                      | 226                       | *                            | 206                          | 304                           | 374                           | 206                      | 188                          | 256                          | 372                           | 594                           |     |
| HDO 140 3 | 32.5  | 46                                     | 80860                   | 415                     | *                      | 236                       | 185                          | 216                          | 314                           | 384                           | 216                      | 198                          | 266                          | 382                           | 604                           |     |
| HDO 140 3 | 36.0  | 42                                     | 82360                   | 382                     | *                      | 237                       | 186                          | 217                          | 315                           | 385                           | 217                      | 199                          | 267                          | 383                           | —                             |     |
| HDO 140 3 | 40.1  | 37                                     | 79400                   | 330                     | *                      | 245                       | 194                          | 225                          | 323                           | 393                           | 225                      | 207                          | 275                          | 391                           | —                             |     |
| HDO 140 3 | 44.4  | 34                                     | 81940                   | 308                     | 124                    | 246                       | 195                          | 226                          | 324                           | —                             | 226                      | 208                          | 276                          | 392                           | —                             |     |
| HDO 140 3 | 50.4  | 29.7                                   | 82500                   | 273                     | 147                    | 269                       | 218                          | 249                          | 347                           | —                             | 249                      | 231                          | 299                          | —                             | —                             |     |
| HDO 140 3 | 55.8  | 26.9                                   | 81520                   | 244                     | 147                    | 269                       | 218                          | 249                          | —                             | —                             | 249                      | 231                          | 299                          | —                             | —                             |     |
| HDO 140 3 | 62.2  | 24.1                                   | 82170                   | 220                     | 152                    | 274                       | 223                          | —                            | —                             | —                             | 254                      | 236                          | —                            | —                             | —                             |     |
| HDO 140 3 | 68.8  | 21.8                                   | 81170                   | 197                     | 152                    | 274                       | 223                          | —                            | —                             | —                             | 254                      | 236                          | —                            | —                             | —                             |     |
| HDO 140 3 | 77.3  | 19.4                                   | 78870                   | 170                     | 153                    | 275                       | 224                          | —                            | —                             | —                             | 255                      | 237                          | —                            | —                             | —                             |     |
| HDO 140 4 | 82.3  | 18.2                                   | 80550                   | 167                     | 119                    | 212                       | 174                          | —                            | —                             | —                             | 197                      | 185                          | —                            | —                             | —                             |     |
| HDO 140 4 | 91.1  | 16.5                                   | 82350                   | 154                     | 119                    | 212                       | 174                          | —                            | —                             | —                             | 197                      | 185                          | —                            | —                             | —                             |     |
| HDO 140 4 | 101.5 | 14.8                                   | 82170                   | 138                     | 120                    | 213                       | 175                          | —                            | —                             | —                             | 198                      | 186                          | —                            | —                             | —                             |     |
| HDO 140 4 | 112.3 | 13.4                                   | 85000                   | 129                     | 121                    | 214                       | 176                          | —                            | —                             | —                             | 199                      | 187                          | —                            | —                             | —                             |     |
| HDO 140 4 | 128.0 | 11.7                                   | 84810                   | 113                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |
| HDO 140 4 | 141.6 | 10.6                                   | 87060                   | 105                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |
| HDO 140 4 | 162.7 | 9.2                                    | 84810                   | 89                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |
| HDO 140 4 | 180.0 | 8.3                                    | 87060                   | 82                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |
| HDO 140 4 | 198.3 | 7.6                                    | 84810                   | 73                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |
| HDO 140 4 | 219.5 | 6.8                                    | 87060                   | 68                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |
| HDO 140 4 | 252.1 | 5.9                                    | 84810                   | 57                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |
| HDO 140 4 | 279.0 | 5.4                                    | 87060                   | 53                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |
| HDO 140 4 | 311.0 | 4.8                                    | 80940                   | 44                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |
| HDO 140 4 | 344.1 | 4.4                                    | 87060                   | 43                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |
| HDO 140 4 | 386.6 | 3.9                                    | 78870                   | 35                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |     |

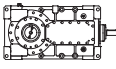
\* BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 140

$n_1 = 1200 \text{ min}^{-1}$

|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$ |                    |                       |                       |                        |                        |                   |                       |                       |                        |                        |
|---|-------|-------------------------------|----------------|----------------|--------------------------|--------------------|-----------------------|-----------------------|------------------------|------------------------|-------------------|-----------------------|-----------------------|------------------------|------------------------|
|   |       |                               |                |                | $P_T$<br>[kW]            | $P_{TFAN}$<br>[kW] | $P_{TMCR A5}$<br>[kW] | $P_{TMCR A9}$<br>[kW] | $P_{TMCR A21}$<br>[kW] | $P_{TMCR A34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCR W5}$<br>[kW] | $P_{TMCR W9}$<br>[kW] | $P_{TMCR W21}$<br>[kW] | $P_{TMCR W34}$<br>[kW] |
| HDO 140 2   | 6.6   | 183                           | 55900          | 1113           | *                        | *                  | *                     | *                     | 678                    | ●                      | *                 | *                     | *                     | 552                    | ●                      |
| HDO 140 2   | 7.3   | 165                           | 61830          | 1113           | *                        | *                  | *                     | *                     | 686                    |                        | *                 | *                     | *                     | 560                    |                        |
| HDO 140 2   | 8.2   | 147                           | 69240          | 1109           | *                        | *                  | *                     | 450                   | 693                    |                        | *                 | *                     | *                     | 567                    |                        |
| HDO 140 2   | 9.0   | 133                           | 72580          | 1055           | *                        | *                  | *                     | 455                   | 698                    |                        | *                 | *                     | *                     | 572                    |                        |
| HDO 140 2   | 10.1  | 119                           | 74230          | 961            | *                        | 425                | *                     | 460                   | 703                    |                        | *                 | *                     | 417                   | 577                    |                        |
| HDO 140 2   | 11.3  | 107                           | 73570          | 856            | *                        | 450                | 407                   | 485                   | 728                    |                        | *                 | 348                   | 442                   | 602                    |                        |
| HDO 140 2   | 12.6  | 95                            | 78000          | 807            | *                        | 454                | 411                   | 489                   | 732                    |                        | 343               | 352                   | 446                   | 606                    |                        |
| HDO 140 2   | 14.0  | 86                            | 69510          | 652            | *                        | 470                | 427                   | 505                   | 748                    |                        | 359               | 368                   | 462                   | 622                    |                        |
| HDO 140 2   | 15.7  | 77                            | 78080          | 652            | *                        | 473                | 430                   | 508                   | 751                    |                        | 362               | 371                   | 465                   | 625                    |                        |
| HDO 140 3   | 17.7  | 68                            | 68660          | 517            | *                        | 275                | 252                   | 309                   | 485                    | 611                    | 227               | 209                   | 277                   | 393                    | 615                    |
| HDO 140 3   | 19.9  | 60                            | 77140          | 517            | *                        | 277                | 254                   | 311                   | 487                    | 613                    | 229               | 211                   | 279                   | 395                    | 617                    |
| HDO 140 3   | 23.3  | 52                            | 82290          | 472            | *                        | 320                | 297                   | 354                   | 530                    | —                      | 272               | 254                   | 322                   | 438                    | 660                    |
| HDO 140 3   | 26.0  | 46                            | 75510          | 387            | 187                      | 337                | 314                   | 371                   | 547                    | —                      | 289               | 271                   | 339                   | 455                    | —                      |
| HDO 140 3   | 28.8  | 42                            | 82360          | 382            | 188                      | 338                | 315                   | 372                   | 548                    | —                      | 290               | 272                   | 340                   | 456                    | —                      |
| HDO 140 3   | 32.5  | 37                            | 84810          | 348            | 196                      | 346                | 323                   | 380                   | —                      | —                      | 298               | 280                   | 348                   | 464                    | —                      |
| HDO 140 3   | 36.0  | 33                            | 81910          | 304            | 196                      | 346                | 323                   | —                     | —                      | —                      | 298               | 280                   | 348                   | —                      | —                      |
| HDO 140 3   | 40.1  | 29.9                          | 82170          | 273            | 202                      | 352                | 329                   | —                     | —                      | —                      | 304               | 286                   | —                     | —                      | —                      |
| HDO 140 3   | 44.4  | 27.0                          | 81530          | 245            | 203                      | 353                | 330                   | —                     | —                      | —                      | 305               | 287                   | —                     | —                      | —                      |
| HDO 140 3   | 50.4  | 23.8                          | 82500          | 218            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 3   | 55.8  | 21.5                          | 81150          | 194            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 3   | 62.2  | 19.3                          | 82170          | 176            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 3   | 68.8  | 17.4                          | 81650          | 158            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 3   | 77.3  | 15.5                          | 78870          | 136            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 82.3  | 14.6                          | 84810          | 140            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 91.1  | 13.2                          | 85170          | 127            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 101.5 | 11.8                          | 82170          | 110            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 112.3 | 10.7                          | 87060          | 106            | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 128.0 | 9.4                           | 84810          | 90             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 141.6 | 8.5                           | 87060          | 84             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 162.7 | 7.4                           | 84810          | 71             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 180.0 | 6.7                           | 87060          | 66             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 198.3 | 6.1                           | 84810          | 58             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 219.5 | 5.5                           | 87060          | 54             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 252.1 | 4.8                           | 84810          | 46             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 279.0 | 4.3                           | 87060          | 43             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 311.0 | 3.9                           | 81700          | 36             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 344.1 | 3.5                           | 87060          | 34             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 386.6 | 3.1                           | 78870          | 28             | —                        | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |

HDO



**HDO**

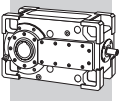
## HDO 140 n<sub>1</sub> = 1200 min<sup>-1</sup>

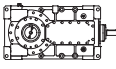
|           | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                              |                              |                               |                               |                          |                              |                              |                               |                               |
|-----------|-------|--|-------------------------|-------------------------|------------------------|---------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|--------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|
|           |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR A5</sub><br>[kW] | P <sub>TMCR A9</sub><br>[kW] | P <sub>TMCR A21</sub><br>[kW] | P <sub>TMCR A34</sub><br>[kW] | P <sub>TSR</sub><br>[kW] | P <sub>TMCR W5</sub><br>[kW] | P <sub>TMCR W9</sub><br>[kW] | P <sub>TMCR W21</sub><br>[kW] | P <sub>TMCR W34</sub><br>[kW] |
| HDO 140 2 | 6.6   | 183                                    | 55900                   | 1113                    | *                      | *                         | *                            | *                            | *                             | ●                             | *                        | *                            | *                            | 466                           | ●                             |
| HDO 140 2 | 7.3   | 165                                    | 61830                   | 1113                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 474                           |                               |
| HDO 140 2 | 8.2   | 147                                    | 69240                   | 1109                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 482                           |                               |
| HDO 140 2 | 9.0   | 133                                    | 72580                   | 1055                    | *                      | *                         | *                            | *                            | *                             |                               | *                        | *                            | *                            | 486                           |                               |
| HDO 140 2 | 10.1  | 119                                    | 74230                   | 961                     | *                      | *                         | *                            | *                            | 397                           |                               | *                        | *                            | *                            | 491                           |                               |
| HDO 140 2 | 11.3  | 107                                    | 73570                   | 856                     | *                      | *                         | *                            | *                            | 422                           |                               | *                        | *                            | 356                          | 516                           |                               |
| HDO 140 2 | 12.6  | 95                                     | 78000                   | 807                     | *                      | *                         | *                            | *                            | 426                           |                               | *                        | *                            | 360                          | 520                           |                               |
| HDO 140 2 | 14.0  | 86                                     | 69510                   | 652                     | *                      | 326                       | 263                          | 307                          | 442                           |                               | 273                      | 282                          | 376                          | 536                           |                               |
| HDO 140 2 | 15.7  | 77                                     | 78080                   | 652                     | *                      | 329                       | 266                          | 310                          | 445                           |                               | 276                      | 285                          | 379                          | 539                           |                               |
| HDO 140 3 | 17.7  | 68                                     | 68660                   | 517                     | *                      | *                         | *                            | *                            | 259                           | 329                           | *                        | *                            | 211                          | 327                           | 549                           |
| HDO 140 3 | 19.9  | 60                                     | 77140                   | 517                     | *                      | *                         | *                            | *                            | 260                           | 330                           | *                        | *                            | 212                          | 328                           | 550                           |
| HDO 140 3 | 23.3  | 52                                     | 82290                   | 472                     | *                      | 213                       | *                            | 205                          | 303                           | 373                           | 205                      | *                            | 255                          | 371                           | 593                           |
| HDO 140 3 | 26.0  | 46                                     | 75510                   | 387                     | *                      | 230                       | 191                          | 222                          | 320                           | 390                           | 222                      | 204                          | 272                          | 388                           | —                             |
| HDO 140 3 | 28.8  | 42                                     | 82360                   | 382                     | *                      | 231                       | 192                          | 223                          | 321                           | 391                           | 223                      | 205                          | 273                          | 389                           | —                             |
| HDO 140 3 | 32.5  | 37                                     | 84810                   | 348                     | *                      | 239                       | 200                          | 231                          | 329                           | 399                           | 231                      | 213                          | 281                          | 397                           | —                             |
| HDO 140 3 | 36.0  | 33                                     | 81910                   | 304                     | 130                    | 240                       | 201                          | 232                          | 330                           | —                             | 232                      | 214                          | 282                          | 398                           | —                             |
| HDO 140 3 | 40.1  | 29.9                                   | 82170                   | 273                     | 135                    | 245                       | 206                          | 237                          | 335                           | —                             | 237                      | 219                          | 287                          | —                             | —                             |
| HDO 140 3 | 44.4  | 27.0                                   | 81530                   | 245                     | 136                    | 246                       | 207                          | 238                          | 336                           | —                             | 238                      | 220                          | 288                          | —                             | —                             |
| HDO 140 3 | 50.4  | 23.8                                   | 82500                   | 218                     | 154                    | 264                       | 225                          | —                            | —                             | —                             | 256                      | 238                          | —                            | —                             | —                             |
| HDO 140 3 | 55.8  | 21.5                                   | 81150                   | 194                     | 154                    | 264                       | 225                          | —                            | —                             | —                             | 256                      | 238                          | —                            | —                             | —                             |
| HDO 140 3 | 62.2  | 19.3                                   | 82170                   | 176                     | 158                    | 268                       | 229                          | —                            | —                             | —                             | 260                      | 242                          | —                            | —                             | —                             |
| HDO 140 3 | 68.8  | 17.4                                   | 81650                   | 158                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 3 | 77.3  | 15.5                                   | 78870                   | 136                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 82.3  | 14.6                                   | 84810                   | 140                     | 123                    | 207                       | 178                          | —                            | —                             | —                             | 201                      | 189                          | —                            | —                             | —                             |
| HDO 140 4 | 91.1  | 13.2                                   | 85170                   | 127                     | 123                    | 207                       | 178                          | —                            | —                             | —                             | 201                      | 189                          | —                            | —                             | —                             |
| HDO 140 4 | 101.5 | 11.8                                   | 82170                   | 110                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 112.3 | 10.7                                   | 87060                   | 106                     | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 128.0 | 9.4                                    | 84810                   | 90                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 141.6 | 8.5                                    | 87060                   | 84                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 162.7 | 7.4                                    | 84810                   | 71                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 180.0 | 6.7                                    | 87060                   | 66                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 198.3 | 6.1                                    | 84810                   | 58                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 219.5 | 5.5                                    | 87060                   | 54                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 252.1 | 4.8                                    | 84810                   | 46                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 279.0 | 4.3                                    | 87060                   | 43                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 311.0 | 3.9                                    | 81700                   | 36                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 344.1 | 3.5                                    | 87060                   | 34                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |
| HDO 140 4 | 386.6 | 3.1                                    | 78870                   | 28                      | —                      | —                         | —                            | —                            | —                             | —                             | —                        | —                            | —                            | —                             | —                             |

\* BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary





| HDO 140   |       |                               |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                    |                       |                       |                        |                        |                   |                       |                       |                        |                        |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|--------------------|-----------------------|-----------------------|------------------------|------------------------|-------------------|-----------------------|-----------------------|------------------------|------------------------|
|   |       |                               |                |                | $t_a = 20^\circ\text{C}$      |                    |                       |                       |                        |                        |                   |                       |                       |                        |                        |
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCR A5}$<br>[kW] | $P_{TMCR A9}$<br>[kW] | $P_{TMCR A21}$<br>[kW] | $P_{TMCR A34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCR W5}$<br>[kW] | $P_{TMCR W9}$<br>[kW] | $P_{TMCR W21}$<br>[kW] | $P_{TMCR W34}$<br>[kW] |
| HDO 140 2   | 6.6   | 152                           | 59030          | 980            | *                             | *                  | *                     | 461                   | 704                    | ●                      | *                 | *                     | 418                   | 578                    | ●                      |
| HDO 140 2   | 7.3   | 138                           | 65330          | 980            | *                             | *                  | *                     | 467                   | 710                    |                        | *                 | *                     | 424                   | 584                    |                        |
| HDO 140 2   | 8.2   | 122                           | 73120          | 976            | *                             | 391                | 396                   | 474                   | 717                    |                        | *                 | *                     | 431                   | 591                    |                        |
| HDO 140 2   | 9.0   | 111                           | 76670          | 929            | *                             | 394                | 399                   | 477                   | 720                    |                        | *                 | *                     | 434                   | 594                    |                        |
| HDO 140 2   | 10.1  | 99                            | 78400          | 845            | *                             | 398                | 403                   | 481                   | 724                    |                        | *                 | 344                   | 438                   | 598                    |                        |
| HDO 140 2   | 11.3  | 89                            | 73880          | 716            | *                             | 418                | 423                   | 501                   | 744                    |                        | 355               | 364                   | 458                   | 618                    |                        |
| HDO 140 2   | 12.6  | 79                            | 80740          | 697            | *                             | 422                | 427                   | 505                   | 748                    |                        | 359               | 368                   | 462                   | 622                    |                        |
| HDO 140 2   | 14.0  | 72                            | 69720          | 545            | 265                           | 435                | 440                   | 518                   | 761                    |                        | 372               | 381                   | 475                   | 635                    |                        |
| HDO 140 2   | 15.7  | 64                            | 78320          | 545            | 267                           | 437                | 442                   | 520                   | 763                    |                        | 374               | 383                   | 477                   | 637                    |                        |
| HDO 140 3   | 17.7  | 56                            | 68660          | 431            | *                             | 265                | 276                   | 333                   | 509                    | —                      | 251               | 233                   | 301                   | 417                    | 639                    |
| HDO 140 3   | 19.9  | 50                            | 77140          | 431            | *                             | 266                | 277                   | 334                   | 510                    | —                      | 252               | 234                   | 302                   | 418                    | 640                    |
| HDO 140 3   | 23.3  | 43                            | 82420          | 394            | 185                           | 301                | 312                   | 369                   | 545                    | —                      | 287               | 269                   | 337                   | 453                    | —                      |
| HDO 140 3   | 26.0  | 38                            | 75510          | 323            | 198                           | 314                | 325                   | —                     | —                      | —                      | 300               | 282                   | 350                   | —                      | —                      |
| HDO 140 3   | 28.8  | 35                            | 81990          | 317            | 199                           | 315                | 326                   | —                     | —                      | —                      | 301               | 283                   | 351                   | —                      | —                      |
| HDO 140 3   | 32.5  | 31                            | 84810          | 290            | 205                           | 321                | 332                   | —                     | —                      | —                      | 307               | 289                   | 357                   | —                      | —                      |
| HDO 140 3   | 36.0  | 27.8                          | 81580          | 252            | 206                           | 322                | 333                   | —                     | —                      | —                      | 308               | 290                   | —                     | —                      | —                      |
| HDO 140 3   | 40.1  | 24.9                          | 82170          | 228            | 211                           | 327                | 338                   | —                     | —                      | —                      | 313               | 295                   | —                     | —                      | —                      |
| HDO 140 3   | 44.4  | 22.5                          | 81220          | 204            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 3   | 50.4  | 19.8                          | 82500          | 182            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 3   | 55.8  | 17.9                          | 81320          | 162            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 3   | 62.2  | 16.1                          | 82170          | 147            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 3   | 68.8  | 14.5                          | 83920          | 136            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 3   | 77.3  | 12.9                          | 78870          | 113            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 82.3  | 12.2                          | 84810          | 117            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 91.1  | 11.0                          | 87060          | 109            | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 101.5 | 9.9                           | 82000          | 92             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 112.3 | 8.9                           | 87060          | 88             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 128.0 | 7.8                           | 84810          | 75             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 141.6 | 7.1                           | 87060          | 70             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 162.7 | 6.1                           | 84810          | 59             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 180.0 | 5.6                           | 87060          | 55             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 198.3 | 5.0                           | 84810          | 49             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 219.5 | 4.6                           | 87060          | 45             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 252.1 | 4.0                           | 84810          | 38             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 279.0 | 3.6                           | 87060          | 35             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 311.0 | 3.2                           | 82170          | 30             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 344.1 | 2.9                           | 87060          | 29             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |
| HDO 140 4   | 386.6 | 2.6                           | 78870          | 23             | —                             | —                  | —                     | —                     | —                      | —                      | —                 | —                     | —                     | —                      | —                      |

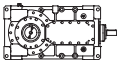
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary





**HDO**

| HDO 140   |       |                               |                |                | $n_1 = 1000 \text{ min}^{-1}$ |                    |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|---|-------|-------------------------------|----------------|----------------|-------------------------------|--------------------|----------------------|----------------------|-----------------------|-----------------------|-------------------|----------------------|----------------------|-----------------------|-----------------------|
|  | i     | $n_2$<br>[min <sup>-1</sup> ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 40^\circ\text{C}$      |                    |                      |                      |                       |                       |                   |                      |                      |                       |                       |
|   |       |                               |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCRA5}$<br>[kW] | $P_{TMCRA9}$<br>[kW] | $P_{TMCRA21}$<br>[kW] | $P_{TMCRA34}$<br>[kW] | $P_{TSR}$<br>[kW] | $P_{TMCRW5}$<br>[kW] | $P_{TMCRW9}$<br>[kW] | $P_{TMCRW21}$<br>[kW] | $P_{TMCRW34}$<br>[kW] |
| HDO 140 2   | 6.6   | 152                           | 59030          | 980            | *                             | *                  | *                    | *                    | 398                   | ●                     | *                 | *                    | *                    | 492                   | ●                     |
| HDO 140 2   | 7.3   | 138                           | 65330          | 980            | *                             | *                  | *                    | *                    | 405                   |                       | *                 | *                    | *                    | 499                   |                       |
| HDO 140 2   | 8.2   | 122                           | 73120          | 976            | *                             | *                  | *                    | *                    | 411                   |                       | *                 | *                    | *                    | 505                   |                       |
| HDO 140 2   | 9.0   | 111                           | 76670          | 929            | *                             | *                  | *                    | *                    | 414                   |                       | *                 | *                    | *                    | 508                   |                       |
| HDO 140 2   | 10.1  | 99                            | 78400          | 845            | *                             | *                  | *                    | *                    | 419                   |                       | *                 | *                    | 353                  | 513                   |                       |
| HDO 140 2   | 11.3  | 89                            | 73880          | 716            | *                             | 287                | *                    | 303                  | 438                   |                       | *                 | *                    | 372                  | 532                   |                       |
| HDO 140 2   | 12.6  | 79                            | 80740          | 697            | *                             | 291                | *                    | 307                  | 442                   |                       | *                 | 282                  | 376                  | 536                   |                       |
| HDO 140 2   | 14.0  | 72                            | 69720          | 545            | *                             | 304                | 276                  | 320                  | 455                   |                       | 286               | 295                  | 389                  | 549                   |                       |
| HDO 140 2   | 15.7  | 64                            | 78320          | 545            | *                             | 306                | 278                  | 322                  | 457                   |                       | 288               | 297                  | 391                  | 551                   |                       |
| HDO 140 3   | 17.7  | 56                            | 68660          | 431            | *                             | *                  | *                    | 184                  | 282                   | 352                   | 184               | *                    | 234                  | 350                   | 572                   |
| HDO 140 3   | 19.9  | 50                            | 77140          | 431            | *                             | *                  | *                    | 186                  | 284                   | 354                   | 186               | *                    | 236                  | 352                   | 574                   |
| HDO 140 3   | 23.3  | 43                            | 82420          | 394            | *                             | 203                | 189                  | 220                  | 318                   | 388                   | 220               | 202                  | 270                  | 386                   | 608                   |
| HDO 140 3   | 26.0  | 38                            | 75510          | 323            | 132                           | 217                | 203                  | 234                  | 332                   | —                     | 234               | 216                  | 284                  | 400                   | —                     |
| HDO 140 3   | 28.8  | 35                            | 81990          | 317            | 132                           | 217                | 203                  | 234                  | 332                   | —                     | 234               | 216                  | 284                  | 400                   | —                     |
| HDO 140 3   | 32.5  | 31                            | 84810          | 290            | 139                           | 224                | 210                  | 241                  | 339                   | —                     | 241               | 223                  | 291                  | —                     | —                     |
| HDO 140 3   | 36.0  | 27.8                          | 81580          | 252            | 139                           | 224                | 210                  | 241                  | 339                   | —                     | 241               | 223                  | 291                  | —                     | —                     |
| HDO 140 3   | 40.1  | 24.9                          | 82170          | 228            | 144                           | 229                | 215                  | 246                  | —                     | —                     | 246               | 228                  | —                    | —                     | —                     |
| HDO 140 3   | 44.4  | 22.5                          | 81220          | 204            | 145                           | 230                | 216                  | —                    | —                     | —                     | 247               | 229                  | —                    | —                     | —                     |
| HDO 140 3   | 50.4  | 19.8                          | 82500          | 182            | 159                           | 244                | 230                  | —                    | —                     | —                     | 261               | 243                  | —                    | —                     | —                     |
| HDO 140 3   | 55.8  | 17.9                          | 81320          | 162            | 159                           | 244                | 230                  | —                    | —                     | —                     | 261               | 243                  | —                    | —                     | —                     |
| HDO 140 3   | 62.2  | 16.1                          | 82170          | 147            | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 3   | 68.8  | 14.5                          | 83920          | 136            | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 3   | 77.3  | 12.9                          | 78870          | 113            | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 82.3  | 12.2                          | 84810          | 117            | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 91.1  | 11.0                          | 87060          | 109            | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 101.5 | 9.9                           | 82000          | 92             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 112.3 | 8.9                           | 87060          | 88             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 128.0 | 7.8                           | 84810          | 75             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 141.6 | 7.1                           | 87060          | 70             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 162.7 | 6.1                           | 84810          | 59             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 180.0 | 5.6                           | 87060          | 55             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 198.3 | 5.0                           | 84810          | 49             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 219.5 | 4.6                           | 87060          | 45             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 252.1 | 4.0                           | 84810          | 38             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 279.0 | 3.6                           | 87060          | 35             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 311.0 | 3.2                           | 82170          | 30             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 344.1 | 2.9                           | 87060          | 29             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |
| HDO 140 4   | 386.6 | 2.6                           | 78870          | 23             | —                             | —                  | —                    | —                    | —                     | —                     | —                 | —                    | —                    | —                     | —                     |

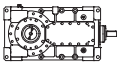
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 150

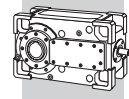
$n_1 = 1800 \text{ min}^{-1}$

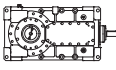
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDO 150 2   | 5.5   | 327                                    | 64090                   | 2282                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 150 2   | 6.5   | 279                                    | 75090                   | 2282                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 150 2   | 7.0   | 256                                    | 77410                   | 2160                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 150 2   | 8.1   | 221                                    | 79760                   | 1925                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 150 2   | 8.9   | 203                                    | 82270                   | 1823                    | *                      | *                         | *                           | *                           | *                            | 749                          | ⊖                            | *                           | *                           | *                            | 754                          | ⊖                            |
| HDO 150 2   | 10.0  | 180                                    | 83380                   | 1635                    | *                      | *                         | *                           | *                           | *                            | 827                          |                              | *                           | *                           | *                            | 832                          |                              |
| HDO 150 2   | 10.9  | 165                                    | 86080                   | 1550                    | *                      | *                         | *                           | *                           | 660                          | 835                          |                              | *                           | *                           | *                            | 840                          |                              |
| HDO 150 2   | 12.6  | 143                                    | 87980                   | 1370                    | *                      | 622                       | *                           | *                           | 719                          | 894                          |                              | *                           | *                           | 593                          | 899                          |                              |
| HDO 150 2   | 13.7  | 131                                    | 90900                   | 1299                    | *                      | 628                       | *                           | *                           | 725                          | 900                          |                              | *                           | *                           | 599                          | 905                          |                              |
| HDO 150 3   | 15.6  | 115                                    | 85410                   | 1095                    | *                      | *                         | *                           | *                           | 501                          | 627                          | 691                          | *                           | *                           | *                            | 631                          | 841                          |
| HDO 150 3   | 18.3  | 98                                     | 96850                   | 1060                    | *                      | *                         | *                           | *                           | 506                          | 632                          | 696                          | *                           | *                           | *                            | 636                          | 846                          |
| HDO 150 3   | 19.9  | 90                                     | 99110                   | 996                     | *                      | 421                       | *                           | *                           | 508                          | 634                          | 698                          | *                           | *                           | 416                          | 638                          | 848                          |
| HDO 150 3   | 21.7  | 83                                     | 98890                   | 913                     | *                      | 440                       | *                           | *                           | 527                          | 653                          | 717                          | *                           | *                           | 435                          | 657                          | 867                          |
| HDO 150 3   | 25.4  | 71                                     | 107800                  | 849                     | *                      | 444                       | *                           | 355                         | 531                          | 657                          | 721                          | *                           | *                           | 439                          | 661                          | 871                          |
| HDO 150 3   | 28.2  | 64                                     | 99160                   | 703                     | *                      | 509                       | 363                         | 420                         | 596                          | 722                          | —                            | 320                         | 388                         | 504                          | 726                          | —                            |
| HDO 150 3   | 30.7  | 59                                     | 93720                   | 611                     | 248                    | 521                       | 375                         | 432                         | 608                          | 734                          | —                            | 332                         | 400                         | 516                          | 738                          | —                            |
| HDO 150 3   | 36.0  | 50                                     | 109830                  | 611                     | 250                    | 523                       | 377                         | 434                         | 610                          | 736                          | —                            | 334                         | 402                         | 518                          | 740                          | —                            |
| HDO 150 3   | 40.2  | 45                                     | 94980                   | 473                     | 268                    | 541                       | 395                         | 452                         | 628                          | —                            | —                            | 352                         | 420                         | 536                          | —                            | —                            |
| HDO 150 3   | 43.8  | 41                                     | 103400                  | 473                     | 269                    | 542                       | 396                         | 453                         | 629                          | —                            | —                            | 353                         | 421                         | 537                          | —                            | —                            |
| HDO 150 3   | 47.6  | 38                                     | 104500                  | 439                     | 276                    | 549                       | 403                         | 460                         | —                            | —                            | —                            | 360                         | 428                         | 544                          | —                            | —                            |
| HDO 150 3   | 55.8  | 32                                     | 111230                  | 399                     | 278                    | 551                       | 405                         | —                           | —                            | —                            | —                            | 362                         | 430                         | —                            | —                            | —                            |
| HDO 150 3   | 60.8  | 29.6                                   | 107330                  | 354                     | 278                    | 551                       | 405                         | —                           | —                            | —                            | —                            | 362                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 66.9  | 26.9                                   | 89590                   | 274                     | 190                    | 398                       | 290                         | —                           | —                            | —                            | —                            | 256                         | 309                         | —                            | —                            | —                            |
| HDO 150 4   | 78.3  | 23.0                                   | 104990                  | 274                     | 191                    | 399                       | 291                         | —                           | —                            | —                            | —                            | 257                         | 310                         | —                            | —                            | —                            |
| HDO 150 4   | 92.9  | 19.4                                   | 117200                  | 258                     | 199                    | 407                       | 299                         | —                           | —                            | —                            | —                            | 265                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 101.8 | 17.7                                   | 111430                  | 224                     | 204                    | 412                       | 304                         | —                           | —                            | —                            | —                            | 270                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 110.9 | 16.2                                   | 108670                  | 200                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 120.8 | 14.9                                   | 117200                  | 198                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 141.5 | 12.7                                   | 117090                  | 169                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 157.9 | 11.4                                   | 107360                  | 139                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 171.9 | 10.5                                   | 114780                  | 136                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 187.2 | 9.6                                    | 117200                  | 128                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 219.3 | 8.2                                    | 117090                  | 109                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 238.8 | 7.5                                    | 114780                  | 98                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDO 150   |       |  |                         |                         | n <sub>1</sub> = 1500 min <sup>-1</sup> |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDO 150 2   | 5.5   | 272                                    | 67710                   | 2009                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 150 2   | 6.5   | 232                                    | 79310                   | 2008                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 150 2   | 7.0   | 213                                    | 81770                   | 1901                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 150 2   | 8.1   | 184                                    | 84250                   | 1694                    | *                                       | *                         | *                           | *                           | *                            | 817                          |                              | *                           | *                           | *                            | 822                          |                              |
| HDO 150 2   | 8.9   | 169                                    | 86910                   | 1605                    | *                                       | *                         | *                           | *                           | 650                          | 825                          | ⊖                            | *                           | *                           | *                            | 830                          | ⊖                            |
| HDO 150 2   | 10.0  | 150                                    | 88070                   | 1439                    | *                                       | *                         | *                           | *                           | 710                          | 885                          |                              | *                           | *                           | 584                          | 890                          |                              |
| HDO 150 2   | 10.9  | 138                                    | 90930                   | 1364                    | *                                       | 568                       | *                           | *                           | 717                          | 892                          |                              | *                           | *                           | 591                          | 897                          |                              |
| HDO 150 2   | 12.6  | 119                                    | 92930                   | 1206                    | *                                       | 613                       | *                           | 519                         | 762                          | 937                          |                              | *                           | *                           | 636                          | 942                          |                              |
| HDO 150 2   | 13.7  | 109                                    | 96020                   | 1144                    | *                                       | 618                       | *                           | 524                         | 767                          | 942                          |                              | *                           | 481                         | 641                          | 947                          |                              |
| HDO 150 3   | 15.6  | 96                                     | 90530                   | 967                     | *                                       | 419                       | *                           | *                           | 541                          | 667                          | 731                          | *                           | *                           | 449                          | 671                          | 881                          |
| HDO 150 3   | 18.3  | 82                                     | 102670                  | 936                     | *                                       | 423                       | *                           | *                           | 545                          | 671                          | 735                          | *                           | *                           | 453                          | 675                          | 885                          |
| HDO 150 3   | 19.9  | 75                                     | 105070                  | 880                     | *                                       | 425                       | *                           | 371                         | 547                          | 673                          | 737                          | *                           | *                           | 455                          | 677                          | 887                          |
| HDO 150 3   | 21.7  | 69                                     | 104840                  | 806                     | *                                       | 439                       | 328                         | 385                         | 561                          | 687                          | 751                          | *                           | 353                         | 469                          | 691                          | 901                          |
| HDO 150 3   | 25.4  | 59                                     | 113000                  | 742                     | *                                       | 442                       | 331                         | 388                         | 564                          | 690                          | 754                          | *                           | 356                         | 472                          | 694                          | 904                          |
| HDO 150 3   | 28.2  | 53                                     | 105090                  | 621                     | 254                                     | 492                       | 381                         | 438                         | 614                          | 740                          | —                            | 338                         | 406                         | 522                          | 744                          | —                            |
| HDO 150 3   | 30.7  | 49                                     | 99350                   | 539                     | 263                                     | 501                       | 390                         | 447                         | 623                          | —                            | —                            | 347                         | 415                         | 531                          | 753                          | —                            |
| HDO 150 3   | 36.0  | 42                                     | 111930                  | 519                     | 265                                     | 503                       | 392                         | 449                         | 625                          | —                            | —                            | 349                         | 417                         | 533                          | —                            | —                            |
| HDO 150 3   | 40.2  | 37                                     | 100660                  | 418                     | 279                                     | 517                       | 406                         | 463                         | —                            | —                            | —                            | 363                         | 431                         | —                            | —                            | —                            |
| HDO 150 3   | 43.8  | 34                                     | 107700                  | 411                     | 280                                     | 518                       | 407                         | 464                         | —                            | —                            | —                            | 364                         | 432                         | —                            | —                            | —                            |
| HDO 150 3   | 47.6  | 31                                     | 110750                  | 388                     | 285                                     | 523                       | 412                         | —                           | —                            | —                            | —                            | 369                         | 437                         | —                            | —                            | —                            |
| HDO 150 3   | 55.8  | 26.9                                   | 110770                  | 331                     | 286                                     | 524                       | 413                         | —                           | —                            | —                            | —                            | 370                         | —                           | —                            | —                            | —                            |
| HDO 150 3   | 60.8  | 24.7                                   | 106900                  | 293                     | 287                                     | 525                       | 414                         | —                           | —                            | —                            | —                            | 371                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 66.9  | 22.4                                   | 94970                   | 242                     | 202                                     | 383                       | 302                         | —                           | —                            | —                            | —                            | 268                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 78.3  | 19.1                                   | 111250                  | 242                     | 202                                     | 383                       | 302                         | —                           | —                            | —                            | —                            | 268                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 92.9  | 16.1                                   | 117200                  | 215                     | 208                                     | 389                       | 308                         | —                           | —                            | —                            | —                            | 274                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 101.8 | 14.7                                   | 111630                  | 187                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 110.9 | 13.5                                   | 111670                  | 171                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 120.8 | 12.4                                   | 117200                  | 165                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 141.5 | 10.6                                   | 117090                  | 141                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 157.9 | 9.5                                    | 113780                  | 123                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 171.9 | 8.7                                    | 114780                  | 114                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 187.2 | 8.0                                    | 117200                  | 107                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 219.3 | 6.8                                    | 117090                  | 91                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 238.8 | 6.3                                    | 114780                  | 82                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

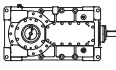
HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



HDO

| HDO 150   |       |                                |                |                | $n_1 = 1500 \text{ min}^{-1}$ |                    |                       |                       |                        |                        |                        |                       |                       |                        |                        |                        |
|---|-------|--------------------------------|----------------|----------------|-------------------------------|--------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $t_a = 20^\circ\text{C}$      |                    |                       |                       |                        |                        |                        |                       |                       |                        |                        |                        |
|   |       |                                |                |                | $P_T$<br>[kW]                 | $P_{TFAN}$<br>[kW] | $P_{TMCR A5}$<br>[kW] | $P_{TMCR A9}$<br>[kW] | $P_{TMCR A21}$<br>[kW] | $P_{TMCR A34}$<br>[kW] | $P_{TMCR A51}$<br>[kW] | $P_{TMCR W5}$<br>[kW] | $P_{TMCR W9}$<br>[kW] | $P_{TMCR W21}$<br>[kW] | $P_{TMCR W34}$<br>[kW] | $P_{TMCR W51}$<br>[kW] |
| HDO 150 2   | 5.5   | 272                            | 67710          | 2009           | *                             | *                  | *                     | *                     | *                      | *                      |                        | *                     | *                     | *                      | *                      |                        |
| HDO 150 2   | 6.5   | 232                            | 79310          | 2008           | *                             | *                  | *                     | *                     | *                      | *                      |                        | *                     | *                     | *                      | *                      |                        |
| HDO 150 2   | 7.0   | 213                            | 81770          | 1901           | *                             | *                  | *                     | *                     | *                      | *                      |                        | *                     | *                     | *                      | *                      |                        |
| HDO 150 2   | 8.1   | 184                            | 84250          | 1694           | *                             | *                  | *                     | *                     | *                      | 817                    |                        | *                     | *                     | *                      | 822                    |                        |
| HDO 150 2   | 8.9   | 169                            | 86910          | 1605           | *                             | *                  | *                     | *                     | 650                    | 825                    | ⊖                      | *                     | *                     | *                      | 830                    | ⊖                      |
| HDO 150 2   | 10.0  | 150                            | 88070          | 1439           | *                             | *                  | *                     | *                     | 710                    | 885                    |                        | *                     | *                     | 584                    | 890                    |                        |
| HDO 150 2   | 10.9  | 138                            | 90930          | 1364           | *                             | 568                | *                     | *                     | 717                    | 892                    |                        | *                     | *                     | 591                    | 897                    |                        |
| HDO 150 2   | 12.6  | 119                            | 92930          | 1206           | *                             | 613                | *                     | 519                   | 762                    | 937                    |                        | *                     | *                     | 636                    | 942                    |                        |
| HDO 150 2   | 13.7  | 109                            | 96020          | 1144           | *                             | 618                | *                     | 524                   | 767                    | 942                    |                        | *                     | 481                   | 641                    | 947                    |                        |
| HDO 150 3   | 15.6  | 96                             | 90530          | 967            | *                             | 419                | *                     | *                     | 541                    | 667                    | 731                    | *                     | *                     | 449                    | 671                    | 881                    |
| HDO 150 3   | 18.3  | 82                             | 102670         | 936            | *                             | 423                | *                     | *                     | 545                    | 671                    | 735                    | *                     | *                     | 453                    | 675                    | 885                    |
| HDO 150 3   | 19.9  | 75                             | 105070         | 880            | *                             | 425                | *                     | 371                   | 547                    | 673                    | 737                    | *                     | *                     | 455                    | 677                    | 887                    |
| HDO 150 3   | 21.7  | 69                             | 104840         | 806            | *                             | 439                | 328                   | 385                   | 561                    | 687                    | 751                    | *                     | 353                   | 469                    | 691                    | 901                    |
| HDO 150 3   | 25.4  | 59                             | 113000         | 742            | *                             | 442                | 331                   | 388                   | 564                    | 690                    | 754                    | *                     | 356                   | 472                    | 694                    | 904                    |
| HDO 150 3   | 28.2  | 53                             | 105090         | 621            | 254                           | 492                | 381                   | 438                   | 614                    | 740                    | —                      | 338                   | 406                   | 522                    | 744                    | —                      |
| HDO 150 3   | 30.7  | 49                             | 99350          | 539            | 263                           | 501                | 390                   | 447                   | 623                    | —                      | —                      | 347                   | 415                   | 531                    | 753                    | —                      |
| HDO 150 3   | 36.0  | 42                             | 111930         | 519            | 265                           | 503                | 392                   | 449                   | 625                    | —                      | —                      | 349                   | 417                   | 533                    | —                      | —                      |
| HDO 150 3   | 40.2  | 37                             | 100660         | 418            | 279                           | 517                | 406                   | 463                   | —                      | —                      | —                      | 363                   | 431                   | —                      | —                      | —                      |
| HDO 150 3   | 43.8  | 34                             | 107700         | 411            | 280                           | 518                | 407                   | 464                   | —                      | —                      | —                      | 364                   | 432                   | —                      | —                      | —                      |
| HDO 150 3   | 47.6  | 31                             | 110750         | 388            | 285                           | 523                | 412                   | —                     | —                      | —                      | —                      | 369                   | 437                   | —                      | —                      | —                      |
| HDO 150 3   | 55.8  | 26.9                           | 110770         | 331            | 286                           | 524                | 413                   | —                     | —                      | —                      | —                      | 370                   | —                     | —                      | —                      | —                      |
| HDO 150 3   | 60.8  | 24.7                           | 106900         | 293            | 287                           | 525                | 414                   | —                     | —                      | —                      | —                      | 371                   | —                     | —                      | —                      | —                      |
| HDO 150 4   | 66.9  | 22.4                           | 94970          | 242            | 202                           | 383                | 302                   | —                     | —                      | —                      | —                      | 268                   | —                     | —                      | —                      | —                      |
| HDO 150 4   | 78.3  | 19.1                           | 111250         | 242            | 202                           | 383                | 302                   | —                     | —                      | —                      | —                      | 268                   | —                     | —                      | —                      | —                      |
| HDO 150 4   | 92.9  | 16.1                           | 117200         | 215            | 208                           | 389                | 308                   | —                     | —                      | —                      | —                      | 274                   | —                     | —                      | —                      | —                      |
| HDO 150 4   | 101.8 | 14.7                           | 111630         | 187            | —                             | —                  | —                     | —                     | —                      | —                      | —                      | —                     | —                     | —                      | —                      | —                      |
| HDO 150 4   | 110.9 | 13.5                           | 111670         | 171            | —                             | —                  | —                     | —                     | —                      | —                      | —                      | —                     | —                     | —                      | —                      | —                      |
| HDO 150 4   | 120.8 | 12.4                           | 117200         | 165            | —                             | —                  | —                     | —                     | —                      | —                      | —                      | —                     | —                     | —                      | —                      | —                      |
| HDO 150 4   | 141.5 | 10.6                           | 117090         | 141            | —                             | —                  | —                     | —                     | —                      | —                      | —                      | —                     | —                     | —                      | —                      | —                      |
| HDO 150 4   | 157.9 | 9.5                            | 113780         | 123            | —                             | —                  | —                     | —                     | —                      | —                      | —                      | —                     | —                     | —                      | —                      | —                      |
| HDO 150 4   | 171.9 | 8.7                            | 114780         | 114            | —                             | —                  | —                     | —                     | —                      | —                      | —                      | —                     | —                     | —                      | —                      | —                      |
| HDO 150 4   | 187.2 | 8.0                            | 117200         | 107            | —                             | —                  | —                     | —                     | —                      | —                      | —                      | —                     | —                     | —                      | —                      | —                      |
| HDO 150 4   | 219.3 | 6.8                            | 117090         | 91             | —                             | —                  | —                     | —                     | —                      | —                      | —                      | —                     | —                     | —                      | —                      | —                      |
| HDO 150 4   | 238.8 | 6.3                            | 114780         | 82             | —                             | —                  | —                     | —                     | —                      | —                      | —                      | —                     | —                     | —                      | —                      | —                      |

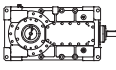
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 150

$n_1 = 1500 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDO 150 2   | 5.5   | 272                                    | 67710                   | 2009                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 150 2   | 6.5   | 232                                    | 79310                   | 2008                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 150 2   | 7.0   | 213                                    | 81770                   | 1901                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 150 2   | 8.1   | 184                                    | 84250                   | 1694                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 711                          |                              |
| HDO 150 2   | 8.9   | 169                                    | 86910                   | 1605                    | *                      | *                         | *                           | *                           | *                            | *                            | ⊖                            | *                           | *                           | *                            | 720                          | ⊖                            |
| HDO 150 2   | 10.0  | 150                                    | 88070                   | 1439                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 780                          |                              |
| HDO 150 2   | 10.9  | 138                                    | 90930                   | 1364                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 786                          |                              |
| HDO 150 2   | 12.6  | 119                                    | 92930                   | 1206                    | *                      | *                         | *                           | *                           | *                            | 529                          |                              | *                           | *                           | 526                          | 832                          |                              |
| HDO 150 2   | 13.7  | 109                                    | 96020                   | 1144                    | *                      | *                         | *                           | *                           | *                            | 533                          |                              | *                           | *                           | 530                          | 836                          |                              |
| HDO 150 3   | 15.6  | 96                                     | 90530                   | 967                     | *                      | *                         | *                           | *                           | *                            | *                            | 396                          | *                           | *                           | *                            | 586                          | 796                          |
| HDO 150 3   | 18.3  | 82                                     | 102670                  | 936                     | *                      | *                         | *                           | *                           | *                            | *                            | 400                          | *                           | *                           | *                            | 590                          | 800                          |
| HDO 150 3   | 19.9  | 75                                     | 105070                  | 880                     | *                      | *                         | *                           | *                           | *                            | *                            | 372                          | 402                         | *                           | *                            | 370                          | 592 802                      |
| HDO 150 3   | 21.7  | 69                                     | 104840                  | 806                     | *                      | *                         | *                           | *                           | *                            | *                            | 386                          | 416                         | *                           | *                            | 384                          | 606 816                      |
| HDO 150 3   | 25.4  | 59                                     | 113000                  | 742                     | *                      | *                         | *                           | *                           | 319                          | 389                          | 419                          | *                           | *                           | 387                          | 609 819                      |                              |
| HDO 150 3   | 28.2  | 53                                     | 105090                  | 621                     | *                      | 343                       | *                           | 271                         | 369                          | 439                          | 469                          | 253                         | 321                         | 437                          | 659                          | —                            |
| HDO 150 3   | 30.7  | 49                                     | 99350                   | 539                     | *                      | 352                       | 249                         | 280                         | 378                          | 448                          | 478                          | 262                         | 330                         | 446                          | 668                          | —                            |
| HDO 150 3   | 36.0  | 42                                     | 111930                  | 519                     | *                      | 354                       | 251                         | 282                         | 380                          | 450                          | 480                          | 264                         | 332                         | 448                          | 670                          | —                            |
| HDO 150 3   | 40.2  | 37                                     | 100660                  | 418                     | 194                    | 368                       | 265                         | 296                         | 394                          | 464                          | —                            | 278                         | 346                         | 462                          | —                            | —                            |
| HDO 150 3   | 43.8  | 34                                     | 107700                  | 411                     | 195                    | 369                       | 266                         | 297                         | 395                          | 465                          | —                            | 279                         | 347                         | 463                          | —                            | —                            |
| HDO 150 3   | 47.6  | 31                                     | 110750                  | 388                     | 200                    | 374                       | 271                         | 302                         | 400                          | —                            | —                            | 284                         | 352                         | 468                          | —                            | —                            |
| HDO 150 3   | 55.8  | 26.9                                   | 110770                  | 331                     | 201                    | 375                       | 272                         | 303                         | 401                          | —                            | —                            | 285                         | 353                         | —                            | —                            | —                            |
| HDO 150 3   | 60.8  | 24.7                                   | 106900                  | 293                     | 202                    | 376                       | 273                         | 304                         | —                            | —                            | —                            | 286                         | 354                         | —                            | —                            | —                            |
| HDO 150 4   | 66.9  | 22.4                                   | 94970                   | 242                     | 137                    | 270                       | 192                         | 217                         | 294                          | —                            | —                            | 203                         | 256                         | —                            | —                            | —                            |
| HDO 150 4   | 78.3  | 19.1                                   | 111250                  | 242                     | 138                    | 271                       | 193                         | 218                         | 295                          | —                            | —                            | 204                         | 257                         | —                            | —                            | —                            |
| HDO 150 4   | 92.9  | 16.1                                   | 117200                  | 215                     | 143                    | 276                       | 198                         | 223                         | —                            | —                            | —                            | 209                         | 262                         | —                            | —                            | —                            |
| HDO 150 4   | 101.8 | 14.7                                   | 111630                  | 187                     | 148                    | 281                       | 203                         | —                           | —                            | —                            | —                            | 214                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 110.9 | 13.5                                   | 111670                  | 171                     | 148                    | 281                       | 203                         | —                           | —                            | —                            | —                            | 214                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 120.8 | 12.4                                   | 117200                  | 165                     | 152                    | 285                       | 207                         | —                           | —                            | —                            | —                            | 218                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 141.5 | 10.6                                   | 117090                  | 141                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 157.9 | 9.5                                    | 113780                  | 123                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 171.9 | 8.7                                    | 114780                  | 114                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 187.2 | 8.0                                    | 117200                  | 107                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 219.3 | 6.8                                    | 117090                  | 91                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 238.8 | 6.3                                    | 114780                  | 82                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 150

$n_1 = 1200 \text{ min}^{-1}$

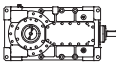
|           | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|-----------|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|           |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDO 150 2 | 5.5   | 218                                    | 72390                   | 1718                    | *                      | *                         | *                           | *                           | *                            | 797                          | ⊖                            | *                           | *                           | *                            | 802                          | ⊖                            |
| HDO 150 2 | 6.5   | 186                                    | 84810                   | 1718                    | *                      | *                         | *                           | *                           | *                            | 817                          |                              | *                           | *                           | *                            | 822                          |                              |
| HDO 150 2 | 7.0   | 171                                    | 87430                   | 1626                    | *                      | *                         | *                           | *                           | 651                          | 826                          |                              | *                           | *                           | *                            | 831                          |                              |
| HDO 150 2 | 8.1   | 148                                    | 90090                   | 1449                    | *                      | *                         | *                           | *                           | 700                          | 875                          |                              | *                           | *                           | *                            | 880                          |                              |
| HDO 150 2 | 8.9   | 135                                    | 92910                   | 1372                    | *                      | *                         | *                           | *                           | 707                          | 882                          |                              | *                           | *                           | 581                          | 887                          |                              |
| HDO 150 2 | 10.0  | 120                                    | 94180                   | 1231                    | *                      | 570                       | *                           | 511                         | 754                          | 929                          |                              | *                           | *                           | 628                          | 934                          |                              |
| HDO 150 2 | 10.9  | 110                                    | 97220                   | 1167                    | *                      | 574                       | *                           | 515                         | 758                          | 933                          |                              | *                           | 472                         | 632                          | 938                          |                              |
| HDO 150 2 | 12.6  | 95                                     | 99370                   | 1031                    | *                      | 610                       | 473                         | 551                         | 794                          | 969                          |                              | 414                         | 508                         | 668                          | 974                          |                              |
| HDO 150 2 | 13.7  | 87                                     | 102660                  | 978                     | *                      | 614                       | 477                         | 555                         | 798                          | 973                          |                              | 418                         | 512                         | 672                          | 978                          |                              |
| HDO 150 3 | 15.6  | 77                                     | 96800                   | 827                     | *                      | 424                       | 337                         | 394                         | 570                          | 696                          | 760                          | *                           | 362                         | 478                          | 700                          | 910                          |
| HDO 150 3 | 18.3  | 66                                     | 109780                  | 801                     | *                      | 427                       | 340                         | 397                         | 573                          | 699                          | 763                          | *                           | 365                         | 481                          | 703                          | 913                          |
| HDO 150 3 | 19.9  | 60                                     | 109340                  | 732                     | *                      | 429                       | 342                         | 399                         | 575                          | 701                          | 765                          | 299                         | 367                         | 483                          | 705                          | 915                          |
| HDO 150 3 | 21.7  | 55                                     | 112090                  | 690                     | *                      | 440                       | 353                         | 410                         | 586                          | 712                          | —                            | 310                         | 378                         | 494                          | 716                          | —                            |
| HDO 150 3 | 25.4  | 47                                     | 112300                  | 590                     | *                      | 442                       | 355                         | 412                         | 588                          | 714                          | —                            | 312                         | 380                         | 496                          | 718                          | —                            |
| HDO 150 3 | 28.2  | 43                                     | 108280                  | 512                     | 267                    | 481                       | 394                         | 451                         | 627                          | —                            | —                            | 351                         | 419                         | 535                          | —                            | —                            |
| HDO 150 3 | 30.7  | 39                                     | 106230                  | 461                     | 274                    | 488                       | 401                         | 458                         | 634                          | —                            | —                            | 358                         | 426                         | 542                          | —                            | —                            |
| HDO 150 3 | 36.0  | 33                                     | 111310                  | 413                     | 276                    | 490                       | 403                         | 460                         | —                            | —                            | —                            | 360                         | 428                         | —                            | —                            | —                            |
| HDO 150 3 | 40.2  | 29.9                                   | 107250                  | 356                     | 287                    | 501                       | 414                         | —                           | —                            | —                            | —                            | 371                         | —                           | —                            | —                            | —                            |
| HDO 150 3 | 43.8  | 27.4                                   | 107150                  | 327                     | 287                    | 501                       | 414                         | —                           | —                            | —                            | —                            | 371                         | —                           | —                            | —                            | —                            |
| HDO 150 3 | 47.6  | 25.2                                   | 114010                  | 319                     | 291                    | 505                       | 418                         | —                           | —                            | —                            | —                            | 375                         | —                           | —                            | —                            | —                            |
| HDO 150 3 | 55.8  | 21.5                                   | 110260                  | 264                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 3 | 60.8  | 19.7                                   | 106420                  | 234                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 66.9  | 17.9                                   | 101540                  | 207                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 78.3  | 15.3                                   | 114980                  | 200                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 92.9  | 12.9                                   | 117200                  | 172                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 101.8 | 11.8                                   | 112750                  | 151                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 110.9 | 10.8                                   | 114780                  | 141                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 120.8 | 9.9                                    | 117200                  | 132                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 141.5 | 8.5                                    | 117090                  | 113                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 157.9 | 7.6                                    | 116600                  | 101                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 171.9 | 7.0                                    | 114780                  | 91                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 187.2 | 6.4                                    | 117200                  | 85                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 219.3 | 5.5                                    | 117090                  | 73                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4 | 238.8 | 5.0                                    | 114780                  | 65                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

HDO

\* BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDO 150   |       |  |                         |                         | n <sub>1</sub> = 1200 min <sup>-1</sup> |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C                   |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR45</sub><br>[kW] | P <sub>TMCR49</sub><br>[kW] | P <sub>TMCR421</sub><br>[kW] | P <sub>TMCR434</sub><br>[kW] | P <sub>TMCR451</sub><br>[kW] | P <sub>TMCR45</sub><br>[kW] | P <sub>TMCR49</sub><br>[kW] | P <sub>TMCR421</sub><br>[kW] | P <sub>TMCR434</sub><br>[kW] | P <sub>TMCR451</sub><br>[kW] |
| HDO 150 2   | 5.5   | 218                                    | 72390                   | 1718                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 691                          |                              |
| HDO 150 2   | 6.5   | 186                                    | 84810                   | 1718                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 711                          |                              |
| HDO 150 2   | 7.0   | 171                                    | 87430                   | 1626                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 720                          |                              |
| HDO 150 2   | 8.1   | 148                                    | 90090                   | 1449                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 769                          |                              |
| HDO 150 2   | 8.9   | 135                                    | 92910                   | 1372                    | *                                       | *                         | *                           | *                           | *                            | *                            | ⊖                            | *                           | *                           | *                            | 776                          | ⊖                            |
| HDO 150 2   | 10.0  | 120                                    | 94180                   | 1231                    | *                                       | *                         | *                           | *                           | *                            | 520                          |                              | *                           | *                           | 517                          | 823                          |                              |
| HDO 150 2   | 10.9  | 110                                    | 97220                   | 1167                    | *                                       | *                         | *                           | *                           | *                            | 525                          |                              | *                           | *                           | 522                          | 828                          |                              |
| HDO 150 2   | 12.6  | 95                                     | 99370                   | 1031                    | *                                       | 416                       | *                           | *                           | 463                          | 560                          |                              | *                           | *                           | 557                          | 863                          |                              |
| HDO 150 2   | 13.7  | 87                                     | 102660                  | 978                     | *                                       | 420                       | *                           | *                           | 467                          | 564                          |                              | *                           | 401                         | 561                          | 867                          |                              |
| HDO 150 3   | 15.6  | 77                                     | 96800                   | 827                     | *                                       | *                         | *                           | *                           | *                            | 395                          | 425                          | *                           | *                           | 393                          | 615                          | 825                          |
| HDO 150 3   | 18.3  | 66                                     | 109780                  | 801                     | *                                       | *                         | *                           | *                           | 328                          | 398                          | 428                          | *                           | *                           | 396                          | 618                          | 828                          |
| HDO 150 3   | 19.9  | 60                                     | 109340                  | 732                     | *                                       | *                         | *                           | *                           | 330                          | 400                          | 430                          | *                           | *                           | 398                          | 620                          | 830                          |
| HDO 150 3   | 21.7  | 55                                     | 112090                  | 690                     | *                                       | 298                       | *                           | *                           | 341                          | 411                          | 441                          | *                           | 293                         | 409                          | 631                          | 841                          |
| HDO 150 3   | 25.4  | 47                                     | 112300                  | 590                     | *                                       | 300                       | *                           | 245                         | 343                          | 413                          | 443                          | *                           | 295                         | 411                          | 633                          | —                            |
| HDO 150 3   | 28.2  | 43                                     | 108280                  | 512                     | *                                       | 339                       | 253                         | 284                         | 382                          | 452                          | 482                          | 266                         | 334                         | 450                          | 672                          | —                            |
| HDO 150 3   | 30.7  | 39                                     | 106230                  | 461                     | 189                                     | 346                       | 260                         | 291                         | 389                          | 459                          | 489                          | 273                         | 341                         | 457                          | 679                          | —                            |
| HDO 150 3   | 36.0  | 33                                     | 111310                  | 413                     | 191                                     | 348                       | 262                         | 293                         | 391                          | 461                          | —                            | 275                         | 343                         | 459                          | —                            | —                            |
| HDO 150 3   | 40.2  | 29.9                                   | 107250                  | 356                     | 202                                     | 359                       | 273                         | 304                         | 402                          | —                            | —                            | 286                         | 354                         | 470                          | —                            | —                            |
| HDO 150 3   | 43.8  | 27.4                                   | 107150                  | 327                     | 202                                     | 359                       | 273                         | 304                         | 402                          | —                            | —                            | 286                         | 354                         | —                            | —                            | —                            |
| HDO 150 3   | 47.6  | 25.2                                   | 114010                  | 319                     | 207                                     | 364                       | 278                         | 309                         | 407                          | —                            | —                            | 291                         | 359                         | —                            | —                            | —                            |
| HDO 150 3   | 55.8  | 21.5                                   | 110260                  | 264                     | 207                                     | 364                       | 278                         | —                           | —                            | —                            | —                            | 291                         | —                           | —                            | —                            | —                            |
| HDO 150 3   | 60.8  | 19.7                                   | 106420                  | 234                     | 208                                     | 365                       | 279                         | —                           | —                            | —                            | —                            | 292                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 66.9  | 17.9                                   | 101540                  | 207                     | 145                                     | 264                       | 200                         | 225                         | —                            | —                            | —                            | 211                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 78.3  | 15.3                                   | 114980                  | 200                     | 146                                     | 265                       | 201                         | —                           | —                            | —                            | —                            | 212                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 92.9  | 12.9                                   | 117200                  | 172                     | 150                                     | 269                       | 205                         | —                           | —                            | —                            | —                            | 216                         | —                           | —                            | —                            | —                            |
| HDO 150 4   | 101.8 | 11.8                                   | 112750                  | 151                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 110.9 | 10.8                                   | 114780                  | 141                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 120.8 | 9.9                                    | 117200                  | 132                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 141.5 | 8.5                                    | 117090                  | 113                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 157.9 | 7.6                                    | 116600                  | 101                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 171.9 | 7.0                                    | 114780                  | 91                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 187.2 | 6.4                                    | 117200                  | 85                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 219.3 | 5.5                                    | 117090                  | 73                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 150 4   | 238.8 | 5.0                                    | 114780                  | 65                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

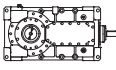
\*  BONFIGLIOLI  
TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 150

$n_1 = 1000 \text{ min}^{-1}$

|   |       |                                |                |                | $t_a = 20^\circ\text{C}$ |            |               |               |                |                |                |               |               |                |                |                |
|---|-------|--------------------------------|----------------|----------------|--------------------------|------------|---------------|---------------|----------------|----------------|----------------|---------------|---------------|----------------|----------------|----------------|
|  | i     | $n_2$<br>[ $\text{min}^{-1}$ ] | $Mn_2$<br>[Nm] | $Pn_1$<br>[kW] | $P_T$                    | $P_{TFAN}$ | $P_{TMCR A5}$ | $P_{TMCR A9}$ | $P_{TMCR A21}$ | $P_{TMCR A34}$ | $P_{TMCR A51}$ | $P_{TMCR W5}$ | $P_{TMCR W9}$ | $P_{TMCR W21}$ | $P_{TMCR W34}$ | $P_{TMCR W51}$ |
|   |       |                                |                |                | [kW]                     | [kW]       | [kW]          | [kW]          | [kW]           | [kW]           | [kW]           | [kW]          | [kW]          | [kW]           | [kW]           | [kW]           |
| HDO 150 2   | 5.5   | 181                            | 76470          | 1513           | *                        | *          | *             | *             | 677            | 852            | ⊖              | *             | *             | *              | 857            | ⊖              |
| HDO 150 2   | 6.5   | 155                            | 89570          | 1512           | *                        | *          | *             | *             | 693            | 868            |                | *             | *             | *              | 873            |                |
| HDO 150 2   | 7.0   | 142                            | 92350          | 1432           | *                        | *          | *             | *             | 700            | 875            |                | *             | *             | 574            | 880            |                |
| HDO 150 2   | 8.1   | 123                            | 95150          | 1276           | *                        | *          | *             | *             | 740            | 915            |                | *             | *             | 614            | 920            |                |
| HDO 150 2   | 8.9   | 113                            | 98150          | 1208           | *                        | 492        | *             | 502           | 745            | 920            |                | *             | *             | 619            | 925            |                |
| HDO 150 2   | 10.0  | 100                            | 99460          | 1083           | *                        | 530        | 462           | 540           | 783            | 958            |                | *             | 497           | 657            | 963            |                |
| HDO 150 2   | 10.9  | 92                             | 102690         | 1027           | *                        | 534        | 466           | 544           | 787            | 962            |                | *             | 501           | 661            | 967            |                |
| HDO 150 2   | 12.6  | 79                             | 104950         | 908            | *                        | 563        | 495           | 573           | 816            | 991            |                | 436           | 530           | 690            | 996            |                |
| HDO 150 2   | 13.7  | 73                             | 108440         | 861            | *                        | 565        | 497           | 575           | 818            | 993            |                | 438           | 532           | 692            | 998            |                |
| HDO 150 3   | 15.6  | 64                             | 98480          | 702            | *                        | 396        | 357           | 414           | 590            | 716            | —              | 314           | 382           | 498            | 720            | —              |
| HDO 150 3   | 18.3  | 55                             | 112750         | 685            | *                        | 399        | 360           | 417           | 593            | 719            | —              | 317           | 385           | 501            | 723            | —              |
| HDO 150 3   | 19.9  | 50                             | 108770         | 607            | *                        | 400        | 361           | 418           | 594            | 720            | —              | 318           | 386           | 502            | 724            | —              |
| HDO 150 3   | 21.7  | 46                             | 117200         | 601            | 243                      | 409        | 370           | 427           | 603            | —              | —              | 327           | 395           | 511            | 733            | —              |
| HDO 150 3   | 25.4  | 39                             | 111770         | 489            | 245                      | 411        | 372           | 429           | 605            | —              | —              | 329           | 397           | 513            | —              | —              |
| HDO 150 3   | 28.2  | 35                             | 107790         | 425            | 276                      | 442        | 403           | 460           | —              | —              | —              | 360           | 428           | —              | —              | —              |
| HDO 150 3   | 30.7  | 33                             | 112200         | 406            | 282                      | 448        | 409           | —             | —              | —              | —              | 366           | 434           | —              | —              | —              |
| HDO 150 3   | 36.0  | 27.8                           | 110850         | 342            | 283                      | 449        | 410           | —             | —              | —              | —              | 367           | —             | —              | —              | —              |
| HDO 150 3   | 40.2  | 24.9                           | 107250         | 297            | 292                      | 458        | 419           | —             | —              | —              | —              | 376           | —             | —              | —              | —              |
| HDO 150 3   | 43.8  | 22.9                           | 106730         | 271            | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 3   | 47.6  | 21.0                           | 114010         | 266            | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 3   | 55.8  | 17.9                           | 112350         | 224            | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 3   | 60.8  | 16.4                           | 108450         | 198            | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 66.9  | 15.0                           | 107250         | 182            | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 78.3  | 12.8                           | 117090         | 170            | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 92.9  | 10.8                           | 117200         | 143            | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 101.8 | 9.8                            | 111630         | 124            | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 110.9 | 9.0                            | 114780         | 117            | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 120.8 | 8.3                            | 117200         | 110            | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 141.5 | 7.1                            | 117090         | 94             | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 157.9 | 6.3                            | 116600         | 84             | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 171.9 | 5.8                            | 114780         | 76             | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 187.2 | 5.3                            | 117200         | 71             | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 219.3 | 4.6                            | 117090         | 61             | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |
| HDO 150 4   | 238.8 | 4.2                            | 114780         | 55             | —                        | —          | —             | —             | —              | —              | —              | —             | —             | —              | —              | —              |

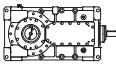
HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary





| HDO 150   |       |  |                         |                         | n <sub>1</sub> = 1000 min <sup>-1</sup> |                           |                              |                              |                               |                               |                               |                              |                              |                               |                               |                               |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C                   |                           |                              |                              |                               |                               |                               |                              |                              |                               |                               |                               |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCR A5</sub><br>[kW] | P <sub>TMCR A9</sub><br>[kW] | P <sub>TMCR A21</sub><br>[kW] | P <sub>TMCR A34</sub><br>[kW] | P <sub>TMCR A51</sub><br>[kW] | P <sub>TMCR W5</sub><br>[kW] | P <sub>TMCR W9</sub><br>[kW] | P <sub>TMCR W21</sub><br>[kW] | P <sub>TMCR W34</sub><br>[kW] | P <sub>TMCR W51</sub><br>[kW] |
| HDO 150 2   | 5.5   | 181                                    | 76470                   | 1513                    | *                                       | *                         | *                            | *                            | *                             | *                             |                               | *                            | *                            | *                             | 746                           |                               |
| HDO 150 2   | 6.5   | 155                                    | 89570                   | 1512                    | *                                       | *                         | *                            | *                            | *                             | *                             |                               | *                            | *                            | *                             | 762                           |                               |
| HDO 150 2   | 7.0   | 142                                    | 92350                   | 1432                    | *                                       | *                         | *                            | *                            | *                             | *                             |                               | *                            | *                            | *                             | 769                           |                               |
| HDO 150 2   | 8.1   | 123                                    | 95150                   | 1276                    | *                                       | *                         | *                            | *                            | *                             | *                             |                               | *                            | *                            | *                             | 809                           |                               |
| HDO 150 2   | 8.9   | 113                                    | 98150                   | 1208                    | *                                       | *                         | *                            | *                            | *                             | 511                           | ⊖                             | *                            | *                            | 508                           | 814                           | ⊖                             |
| HDO 150 2   | 10.0  | 100                                    | 99460                   | 1083                    | *                                       | *                         | *                            | *                            | 452                           | 549                           |                               | *                            | *                            | 546                           | 852                           |                               |
| HDO 150 2   | 10.9  | 92                                     | 102690                  | 1027                    | *                                       | *                         | *                            | *                            | 456                           | 553                           |                               | *                            | *                            | 550                           | 856                           |                               |
| HDO 150 2   | 12.6  | 79                                     | 104950                  | 908                     | *                                       | 387                       | *                            | *                            | 485                           | 582                           |                               | *                            | 419                          | 579                           | 885                           |                               |
| HDO 150 2   | 13.7  | 73                                     | 108440                  | 861                     | *                                       | 390                       | *                            | 353                          | 488                           | 585                           |                               | *                            | 422                          | 582                           | 888                           |                               |
| HDO 150 3   | 15.6  | 64                                     | 98480                   | 702                     | *                                       | *                         | *                            | *                            | 345                           | 415                           | 445                           | *                            | 297                          | 413                           | 635                           | 845                           |
| HDO 150 3   | 18.3  | 55                                     | 112750                  | 685                     | *                                       | *                         | *                            | *                            | 348                           | 418                           | 448                           | *                            | 300                          | 416                           | 638                           | 848                           |
| HDO 150 3   | 19.9  | 50                                     | 108770                  | 607                     | *                                       | 271                       | *                            | 251                          | 349                           | 419                           | 449                           | *                            | 301                          | 417                           | 639                           | —                             |
| HDO 150 3   | 21.7  | 46                                     | 117200                  | 601                     | *                                       | 280                       | *                            | 260                          | 358                           | 428                           | 458                           | 242                          | 310                          | 426                           | 648                           | —                             |
| HDO 150 3   | 25.4  | 39                                     | 111770                  | 489                     | *                                       | 282                       | 231                          | 262                          | 360                           | 430                           | 460                           | 244                          | 312                          | 428                           | 650                           | —                             |
| HDO 150 3   | 28.2  | 35                                     | 107790                  | 425                     | 191                                     | 313                       | 262                          | 293                          | 391                           | 461                           | —                             | 275                          | 343                          | 459                           | —                             | —                             |
| HDO 150 3   | 30.7  | 33                                     | 112200                  | 406                     | 197                                     | 319                       | 268                          | 299                          | 397                           | 467                           | —                             | 281                          | 349                          | 465                           | —                             | —                             |
| HDO 150 3   | 36.0  | 27.8                                   | 110850                  | 342                     | 198                                     | 320                       | 269                          | 300                          | 398                           | —                             | —                             | 282                          | 350                          | —                             | —                             | —                             |
| HDO 150 3   | 40.2  | 24.9                                   | 107250                  | 297                     | 207                                     | 329                       | 278                          | 309                          | —                             | —                             | —                             | 291                          | 359                          | —                             | —                             | —                             |
| HDO 150 3   | 43.8  | 22.9                                   | 106730                  | 271                     | 208                                     | 330                       | 279                          | —                            | —                             | —                             | —                             | 292                          | —                            | —                             | —                             | —                             |
| HDO 150 3   | 47.6  | 21.0                                   | 114010                  | 266                     | 211                                     | 333                       | 282                          | —                            | —                             | —                             | —                             | 295                          | —                            | —                             | —                             | —                             |
| HDO 150 3   | 55.8  | 17.9                                   | 112350                  | 224                     | 212                                     | 334                       | 283                          | —                            | —                             | —                             | —                             | 296                          | —                            | —                             | —                             | —                             |
| HDO 150 3   | 60.8  | 16.4                                   | 108450                  | 198                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |
| HDO 150 4   | 66.9  | 15.0                                   | 107250                  | 182                     | 151                                     | 244                       | 206                          | —                            | —                             | —                             | —                             | 217                          | —                            | —                             | —                             | —                             |
| HDO 150 4   | 78.3  | 12.8                                   | 117090                  | 170                     | 151                                     | 244                       | 206                          | —                            | —                             | —                             | —                             | 217                          | —                            | —                             | —                             | —                             |
| HDO 150 4   | 92.9  | 10.8                                   | 117200                  | 143                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |
| HDO 150 4   | 101.8 | 9.8                                    | 111630                  | 124                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |
| HDO 150 4   | 110.9 | 9.0                                    | 114780                  | 117                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |
| HDO 150 4   | 120.8 | 8.3                                    | 117200                  | 110                     | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |
| HDO 150 4   | 141.5 | 7.1                                    | 117090                  | 94                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |
| HDO 150 4   | 157.9 | 6.3                                    | 116600                  | 84                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |
| HDO 150 4   | 171.9 | 5.8                                    | 114780                  | 76                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |
| HDO 150 4   | 187.2 | 5.3                                    | 117200                  | 71                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |
| HDO 150 4   | 219.3 | 4.6                                    | 117090                  | 61                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |
| HDO 150 4   | 238.8 | 4.2                                    | 114780                  | 55                      | —                                       | —                         | —                            | —                            | —                             | —                             | —                             | —                            | —                            | —                             | —                             | —                             |

HDO

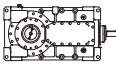
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 160

$n_1 = 1800 \text{ min}^{-1}$

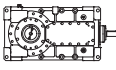
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDO 160 2   | 7.3   | 246                                    | 84950                   | 2282                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 160 2   | 7.9   | 227                                    | 89700                   | 2217                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 160 2   | 8.9   | 201                                    | 90600                   | 1990                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 160 2   | 10.4  | 173                                    | 97920                   | 1843                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 160 2   | 11.3  | 159                                    | 100750                  | 1745                    | *                      | *                         | *                           | *                           | *                            | *                            | ●                            | *                           | *                           | *                            | *                            | ●                            |
| HDO 160 2   | 12.2  | 148                                    | 92930                   | 1501                    | *                      | *                         | *                           | *                           | 638                          | 813                          |                              | *                           | *                           | *                            | 818                          |                              |
| HDO 160 2   | 14.2  | 127                                    | 104970                  | 1452                    | *                      | *                         | *                           | *                           | 653                          | 828                          |                              | *                           | *                           | *                            | 833                          |                              |
| HDO 160 2   | 15.4  | 117                                    | 108140                  | 1377                    | *                      | 564                       | *                           | *                           | 661                          | 836                          |                              | *                           | *                           | *                            | 841                          |                              |
| HDO 160 3   | 17.7  | 101                                    | 97020                   | 1096                    | *                      | *                         | *                           | *                           | 512                          | 638                          | 702                          | *                           | *                           | *                            | 642                          | 852                          |
| HDO 160 3   | 20.7  | 87                                     | 113190                  | 1095                    | *                      | *                         | *                           | *                           | 518                          | 644                          | 708                          | *                           | *                           | *                            | 648                          | 858                          |
| HDO 160 3   | 22.5  | 80                                     | 123030                  | 1095                    | *                      | *                         | *                           | *                           | 521                          | 647                          | 711                          | *                           | *                           | *                            | 651                          | 861                          |
| HDO 160 3   | 24.6  | 73                                     | 112310                  | 913                     | *                      | 454                       | *                           | *                           | 541                          | 667                          | 731                          | *                           | *                           | 449                          | 671                          | 881                          |
| HDO 160 3   | 28.8  | 63                                     | 131120                  | 913                     | *                      | 458                       | *                           | 369                         | 545                          | 671                          | 735                          | *                           | *                           | 453                          | 675                          | 885                          |
| HDO 160 3   | 31.3  | 58                                     | 138760                  | 889                     | *                      | 460                       | *                           | 371                         | 547                          | 673                          | 737                          | *                           | *                           | 455                          | 677                          | 887                          |
| HDO 160 3   | 34.9  | 52                                     | 110880                  | 636                     | 262                    | 535                       | 389                         | 446                         | 622                          | 748                          | —                            | 346                         | 414                         | 530                          | 752                          | —                            |
| HDO 160 3   | 40.7  | 44                                     | 129410                  | 636                     | 265                    | 538                       | 392                         | 449                         | 625                          | 751                          | —                            | 349                         | 417                         | 533                          | 755                          | —                            |
| HDO 160 3   | 44.3  | 41                                     | 134530                  | 608                     | 267                    | 540                       | 394                         | 451                         | 627                          | —                            | —                            | 351                         | 419                         | 535                          | 757                          | —                            |
| HDO 160 3   | 49.4  | 36                                     | 116760                  | 473                     | 285                    | 558                       | 412                         | 469                         | 645                          | —                            | —                            | 369                         | 437                         | 553                          | —                            | —                            |
| HDO 160 3   | 54.1  | 33                                     | 118630                  | 439                     | 292                    | 565                       | 419                         | 476                         | —                            | —                            | —                            | 376                         | 444                         | —                            | —                            | —                            |
| HDO 160 3   | 63.2  | 28.5                                   | 138490                  | 439                     | 294                    | 567                       | 421                         | 478                         | —                            | —                            | —                            | 378                         | 446                         | —                            | —                            | —                            |
| HDO 160 3   | 68.6  | 26.2                                   | 137580                  | 401                     | 295                    | 568                       | 422                         | —                           | —                            | —                            | —                            | 379                         | 447                         | —                            | —                            | —                            |
| HDO 160 4   | 75.9  | 23.7                                   | 101750                  | 274                     | 203                    | 411                       | 303                         | —                           | —                            | —                            | —                            | 269                         | 322                         | —                            | —                            | —                            |
| HDO 160 4   | 88.6  | 20.3                                   | 118740                  | 274                     | 204                    | 412                       | 304                         | —                           | —                            | —                            | —                            | 270                         | 323                         | —                            | —                            | —                            |
| HDO 160 4   | 96.3  | 18.7                                   | 129080                  | 274                     | 205                    | 413                       | 305                         | —                           | —                            | —                            | —                            | 271                         | 324                         | —                            | —                            | —                            |
| HDO 160 4   | 115.2 | 15.6                                   | 126060                  | 224                     | 217                    | 425                       | 317                         | —                           | —                            | —                            | —                            | 283                         | —                           | —                            | —                            | —                            |
| HDO 160 4   | 125.2 | 14.4                                   | 137000                  | 224                     | 218                    | 426                       | 318                         | —                           | —                            | —                            | —                            | 284                         | —                           | —                            | —                            | —                            |
| HDO 160 4   | 137.1 | 13.1                                   | 143080                  | 213                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 160.1 | 11.2                                   | 146300                  | 187                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 174.0 | 10.3                                   | 146330                  | 172                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 194.1 | 9.3                                    | 132000                  | 139                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 212.6 | 8.5                                    | 141660                  | 136                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 248.1 | 7.3                                    | 146300                  | 121                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 269.7 | 6.7                                    | 147070                  | 111                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDO 160   |       |  |                         |                         | n <sub>1</sub> = 1800 min <sup>-1</sup> |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |     |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C                   |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |     |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |     |
| HDO 160 2   | 7.3   | 246                                    | 84950                   | 2282                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | *                            | *   |
| HDO 160 2   | 7.9   | 227                                    | 89700                   | 2217                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | *                            | *   |
| HDO 160 2   | 8.9   | 201                                    | 90600                   | 1990                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | *                            | *   |
| HDO 160 2   | 10.4  | 173                                    | 97920                   | 1843                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | *                            | *   |
| HDO 160 2   | 11.3  | 159                                    | 100750                  | 1745                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | *                            | *   |
| HDO 160 2   | 12.2  | 148                                    | 92930                   | 1501                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | 700                          | *   |
| HDO 160 2   | 14.2  | 127                                    | 104970                  | 1452                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | 715                          | *   |
| HDO 160 2   | 15.4  | 117                                    | 108140                  | 1377                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | 723                          | *   |
| HDO 160 3   | 17.7  | 101                                    | 97020                   | 1096                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | 552                          | 762 |
| HDO 160 3   | 20.7  | 87                                     | 113190                  | 1095                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | 558                          | 768 |
| HDO 160 3   | 22.5  | 80                                     | 123030                  | 1095                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | 561                          | 771 |
| HDO 160 3   | 24.6  | 73                                     | 112310                  | 913                     | *                                       | *                         | *                           | *                           | *                            | *                            | 391                          | *                           | *                           | *                            | *                            | 581                          | 791 |
| HDO 160 3   | 28.8  | 63                                     | 131120                  | 913                     | *                                       | *                         | *                           | *                           | *                            | *                            | 395                          | *                           | *                           | *                            | *                            | 585                          | 795 |
| HDO 160 3   | 31.3  | 58                                     | 138760                  | 889                     | *                                       | *                         | *                           | *                           | *                            | 367                          | 397                          | *                           | *                           | 365                          | 587                          | 797                          | *   |
| HDO 160 3   | 34.9  | 52                                     | 110880                  | 636                     | *                                       | 374                       | *                           | 275                         | 373                          | 443                          | 473                          | 257                         | 325                         | 441                          | 663                          | —                            | *   |
| HDO 160 3   | 40.7  | 44                                     | 129410                  | 636                     | *                                       | 377                       | *                           | 278                         | 376                          | 446                          | 476                          | 260                         | 328                         | 444                          | 666                          | —                            | *   |
| HDO 160 3   | 44.3  | 41                                     | 134530                  | 608                     | *                                       | 378                       | 248                         | 279                         | 377                          | 447                          | 477                          | 261                         | 329                         | 445                          | 667                          | —                            | *   |
| HDO 160 3   | 49.4  | 36                                     | 116760                  | 473                     | 195                                     | 396                       | 266                         | 297                         | 395                          | 465                          | 495                          | 279                         | 347                         | 463                          | 685                          | —                            | *   |
| HDO 160 3   | 54.1  | 33                                     | 118630                  | 439                     | 203                                     | 404                       | 274                         | 305                         | 403                          | 473                          | —                            | 287                         | 355                         | 471                          | —                            | —                            | *   |
| HDO 160 3   | 63.2  | 28.5                                   | 138490                  | 439                     | 204                                     | 405                       | 275                         | 306                         | 404                          | 474                          | —                            | 288                         | 356                         | 472                          | —                            | —                            | *   |
| HDO 160 3   | 68.6  | 26.2                                   | 137580                  | 401                     | 205                                     | 406                       | 276                         | 307                         | 405                          | —                            | —                            | 289                         | 357                         | 473                          | —                            | —                            | *   |
| HDO 160 4   | 75.9  | 23.7                                   | 101750                  | 274                     | 135                                     | 288                       | 190                         | 215                         | 292                          | —                            | —                            | 201                         | 254                         | 345                          | —                            | —                            | *   |
| HDO 160 4   | 88.6  | 20.3                                   | 118740                  | 274                     | 136                                     | 289                       | 191                         | 216                         | 293                          | —                            | —                            | 202                         | 255                         | 346                          | —                            | —                            | *   |
| HDO 160 4   | 96.3  | 18.7                                   | 129080                  | 274                     | 137                                     | 290                       | 192                         | 217                         | 294                          | —                            | —                            | 203                         | 256                         | 347                          | —                            | —                            | *   |
| HDO 160 4   | 115.2 | 15.6                                   | 126060                  | 224                     | 149                                     | 302                       | 204                         | 229                         | —                            | —                            | —                            | 215                         | 268                         | —                            | —                            | —                            | *   |
| HDO 160 4   | 125.2 | 14.4                                   | 137000                  | 224                     | 149                                     | 302                       | 204                         | 229                         | —                            | —                            | —                            | 215                         | 268                         | —                            | —                            | —                            | *   |
| HDO 160 4   | 137.1 | 13.1                                   | 143080                  | 213                     | 155                                     | 308                       | 210                         | 235                         | —                            | —                            | —                            | 221                         | —                           | —                            | —                            | —                            | *   |
| HDO 160 4   | 160.1 | 11.2                                   | 146300                  | 187                     | 155                                     | 308                       | 210                         | —                           | —                            | —                            | —                            | 221                         | —                           | —                            | —                            | —                            | *   |
| HDO 160 4   | 174.0 | 10.3                                   | 146330                  | 172                     | 156                                     | 309                       | 211                         | —                           | —                            | —                            | —                            | 222                         | —                           | —                            | —                            | —                            | *   |
| HDO 160 4   | 194.1 | 9.3                                    | 132000                  | 139                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            | *   |
| HDO 160 4   | 212.6 | 8.5                                    | 141660                  | 136                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            | *   |
| HDO 160 4   | 248.1 | 7.3                                    | 146300                  | 121                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            | *   |
| HDO 160 4   | 269.7 | 6.7                                    | 147070                  | 111                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            | *   |

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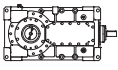
— Thermal verification not necessary

**HDO**



# HDO 160

$n_1 = 1500 \text{ min}^{-1}$

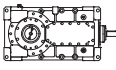
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDO 160 2   | 7.3   | 205                                    | 89730                   | 2009                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 160 2   | 7.9   | 189                                    | 94750                   | 1951                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | *                            |                              |
| HDO 160 2   | 8.9   | 168                                    | 95690                   | 1752                    | *                      | *                         | *                           | *                           | *                            | 755                          |                              | *                           | *                           | *                            | 760                          |                              |
| HDO 160 2   | 10.4  | 144                                    | 103430                  | 1622                    | *                      | *                         | *                           | *                           | *                            | 773                          |                              | *                           | *                           | *                            | 778                          |                              |
| HDO 160 2   | 11.3  | 132                                    | 106410                  | 1536                    | *                      | *                         | *                           | *                           | *                            | 781                          | ●                            | *                           | *                           | *                            | 786                          | ●                            |
| HDO 160 2   | 12.2  | 123                                    | 98150                   | 1321                    | *                      | 557                       | *                           | *                           | 706                          | 881                          |                              | *                           | *                           | 580                          | 886                          |                              |
| HDO 160 2   | 14.2  | 106                                    | 110890                  | 1279                    | *                      | 569                       | *                           | *                           | 718                          | 893                          |                              | *                           | *                           | 592                          | 898                          |                              |
| HDO 160 2   | 15.4  | 97                                     | 114230                  | 1212                    | *                      | 574                       | *                           | *                           | 723                          | 898                          |                              | *                           | *                           | 597                          | 903                          |                              |
| HDO 160 3   | 17.7  | 85                                     | 102810                  | 967                     | *                      | 431                       | *                           | *                           | 553                          | 679                          | 743                          | *                           | *                           | 461                          | 683                          | 893                          |
| HDO 160 3   | 20.7  | 72                                     | 119990                  | 967                     | *                      | 436                       | *                           | *                           | 558                          | 684                          | 748                          | *                           | *                           | 466                          | 688                          | 898                          |
| HDO 160 3   | 22.5  | 67                                     | 130430                  | 967                     | *                      | 438                       | *                           | *                           | 560                          | 686                          | 750                          | *                           | *                           | 468                          | 690                          | 900                          |
| HDO 160 3   | 24.6  | 61                                     | 119050                  | 806                     | *                      | 454                       | 343                         | 400                         | 576                          | 702                          | 766                          | *                           | 368                         | 484                          | 706                          | 916                          |
| HDO 160 3   | 28.8  | 52                                     | 138950                  | 806                     | *                      | 457                       | 346                         | 403                         | 579                          | 705                          | 769                          | *                           | 371                         | 487                          | 709                          | 919                          |
| HDO 160 3   | 31.3  | 48                                     | 139750                  | 746                     | *                      | 458                       | 347                         | 404                         | 580                          | 706                          | 770                          | 304                         | 372                         | 488                          | 710                          | 920                          |
| HDO 160 3   | 34.9  | 43                                     | 118520                  | 567                     | 278                    | 516                       | 405                         | 462                         | 638                          | —                            | —                            | 362                         | 430                         | 546                          | 768                          | —                            |
| HDO 160 3   | 40.7  | 37                                     | 138380                  | 567                     | 281                    | 519                       | 408                         | 465                         | 641                          | —                            | —                            | 365                         | 433                         | 549                          | 771                          | —                            |
| HDO 160 3   | 44.3  | 34                                     | 138440                  | 522                     | 282                    | 520                       | 409                         | 466                         | 642                          | —                            | —                            | 366                         | 434                         | 550                          | —                            | —                            |
| HDO 160 3   | 49.4  | 30                                     | 123770                  | 418                     | 296                    | 534                       | 423                         | —                           | —                            | —                            | —                            | 380                         | 448                         | —                            | —                            | —                            |
| HDO 160 3   | 54.1  | 27.7                                   | 125770                  | 388                     | 301                    | 539                       | 428                         | —                           | —                            | —                            | —                            | 385                         | 453                         | —                            | —                            | —                            |
| HDO 160 3   | 63.2  | 23.8                                   | 144850                  | 383                     | 303                    | 541                       | 430                         | —                           | —                            | —                            | —                            | 387                         | —                           | —                            | —                            | —                            |
| HDO 160 3   | 68.6  | 21.9                                   | 137030                  | 333                     | 303                    | 541                       | 430                         | —                           | —                            | —                            | —                            | 387                         | —                           | —                            | —                            | —                            |
| HDO 160 4   | 75.9  | 19.8                                   | 107850                  | 242                     | 215                    | 396                       | 315                         | —                           | —                            | —                            | —                            | 281                         | —                           | —                            | —                            | —                            |
| HDO 160 4   | 88.6  | 16.9                                   | 125870                  | 242                     | 216                    | 397                       | 316                         | —                           | —                            | —                            | —                            | 282                         | —                           | —                            | —                            | —                            |
| HDO 160 4   | 96.3  | 15.6                                   | 136820                  | 242                     | 216                    | 397                       | 316                         | —                           | —                            | —                            | —                            | 282                         | —                           | —                            | —                            | —                            |
| HDO 160 4   | 115.2 | 13.0                                   | 126280                  | 187                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 125.2 | 12.0                                   | 138630                  | 189                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 137.1 | 10.9                                   | 142460                  | 177                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 160.1 | 9.4                                    | 146300                  | 156                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 174.0 | 8.6                                    | 147070                  | 144                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 194.1 | 7.7                                    | 139890                  | 123                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 212.6 | 7.1                                    | 141140                  | 113                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 248.1 | 6.0                                    | 146300                  | 100                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 269.7 | 5.6                                    | 147070                  | 93                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



| HDO 160   |       |  |                         |                         | n <sub>1</sub> = 1500 min <sup>-1</sup> |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |     |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C                   |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |     |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |     |
| HDO 160 2   | 7.3   | 205                                    | 89730                   | 2009                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              |                             | *                           | *                            | *                            | *                            |     |
| HDO 160 2   | 7.9   | 189                                    | 94750                   | 1951                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              |                             | *                           | *                            | *                            | *                            |     |
| HDO 160 2   | 8.9   | 168                                    | 95690                   | 1752                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              |                             | *                           | *                            | *                            | *                            |     |
| HDO 160 2   | 10.4  | 144                                    | 103430                  | 1622                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              |                             | *                           | *                            | *                            | 660                          |     |
| HDO 160 2   | 11.3  | 132                                    | 106410                  | 1536                    | *                                       | *                         | *                           | *                           | *                            | *                            | ●                            |                             | *                           | *                            | *                            | 668                          | ●   |
| HDO 160 2   | 12.2  | 123                                    | 98150                   | 1321                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              |                             | *                           | *                            | *                            | 768                          |     |
| HDO 160 2   | 14.2  | 106                                    | 110890                  | 1279                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              |                             | *                           | *                            | *                            | 780                          |     |
| HDO 160 2   | 15.4  | 97                                     | 114230                  | 1212                    | *                                       | *                         | *                           | *                           | *                            | *                            |                              |                             | *                           | *                            | *                            | 785                          |     |
| HDO 160 3   | 17.7  | 85                                     | 102810                  | 967                     | *                                       | *                         | *                           | *                           | *                            | *                            | 404                          | *                           | *                           | *                            | *                            | 594                          | 804 |
| HDO 160 3   | 20.7  | 72                                     | 119990                  | 967                     | *                                       | *                         | *                           | *                           | *                            | *                            | 408                          | *                           | *                           | *                            | *                            | 598                          | 808 |
| HDO 160 3   | 22.5  | 67                                     | 130430                  | 967                     | *                                       | *                         | *                           | *                           | *                            | *                            | 411                          | *                           | *                           | *                            | *                            | 601                          | 811 |
| HDO 160 3   | 24.6  | 61                                     | 119050                  | 806                     | *                                       | *                         | *                           | *                           | 326                          | 396                          | 426                          | *                           | *                           | 394                          | 616                          | 826                          |     |
| HDO 160 3   | 28.8  | 52                                     | 138950                  | 806                     | *                                       | *                         | *                           | *                           | 329                          | 399                          | 429                          | *                           | *                           | 397                          | 619                          | 829                          |     |
| HDO 160 3   | 31.3  | 48                                     | 139750                  | 746                     | *                                       | 305                       | *                           | *                           | 331                          | 401                          | 431                          | *                           | *                           | 399                          | 621                          | 831                          |     |
| HDO 160 3   | 34.9  | 43                                     | 118520                  | 567                     | *                                       | 363                       | 260                         | 291                         | 389                          | 459                          | 489                          | 273                         | 341                         | 457                          | 679                          | —                            |     |
| HDO 160 3   | 40.7  | 37                                     | 138380                  | 567                     | *                                       | 365                       | 262                         | 293                         | 391                          | 461                          | 491                          | 275                         | 343                         | 459                          | 681                          | —                            |     |
| HDO 160 3   | 44.3  | 34                                     | 138440                  | 522                     | *                                       | 366                       | 263                         | 294                         | 392                          | 462                          | 492                          | 276                         | 344                         | 460                          | 682                          | —                            |     |
| HDO 160 3   | 49.4  | 30                                     | 123770                  | 418                     | 206                                     | 380                       | 277                         | 308                         | 406                          | 476                          | —                            | 290                         | 358                         | 474                          | —                            | —                            |     |
| HDO 160 3   | 54.1  | 27.7                                   | 125770                  | 388                     | 212                                     | 386                       | 283                         | 314                         | 412                          | —                            | —                            | 296                         | 364                         | 480                          | —                            | —                            |     |
| HDO 160 3   | 63.2  | 23.8                                   | 144850                  | 383                     | 213                                     | 387                       | 284                         | 315                         | 413                          | —                            | —                            | 297                         | 365                         | 481                          | —                            | —                            |     |
| HDO 160 3   | 68.6  | 21.9                                   | 137030                  | 333                     | 214                                     | 388                       | 285                         | 316                         | 414                          | —                            | —                            | 298                         | 366                         | —                            | —                            | —                            |     |
| HDO 160 4   | 75.9  | 19.8                                   | 107850                  | 242                     | 147                                     | 280                       | 202                         | 227                         | 304                          | —                            | —                            | 213                         | 266                         | —                            | —                            | —                            |     |
| HDO 160 4   | 88.6  | 16.9                                   | 125870                  | 242                     | 147                                     | 280                       | 202                         | 227                         | 304                          | —                            | —                            | 213                         | 266                         | —                            | —                            | —                            |     |
| HDO 160 4   | 96.3  | 15.6                                   | 136820                  | 242                     | 148                                     | 281                       | 203                         | 228                         | 305                          | —                            | —                            | 214                         | 267                         | —                            | —                            | —                            |     |
| HDO 160 4   | 115.2 | 13.0                                   | 126280                  | 187                     | 157                                     | 290                       | 212                         | —                           | —                            | —                            | —                            | 223                         | —                           | —                            | —                            | —                            |     |
| HDO 160 4   | 125.2 | 12.0                                   | 138630                  | 189                     | 158                                     | 291                       | 213                         | —                           | —                            | —                            | —                            | 224                         | —                           | —                            | —                            | —                            |     |
| HDO 160 4   | 137.1 | 10.9                                   | 142460                  | 177                     | 162                                     | 295                       | 217                         | —                           | —                            | —                            | —                            | 228                         | —                           | —                            | —                            | —                            |     |
| HDO 160 4   | 160.1 | 9.4                                    | 146300                  | 156                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |     |
| HDO 160 4   | 174.0 | 8.6                                    | 147070                  | 144                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |     |
| HDO 160 4   | 194.1 | 7.7                                    | 139890                  | 123                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |     |
| HDO 160 4   | 212.6 | 7.1                                    | 141140                  | 113                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |     |
| HDO 160 4   | 248.1 | 6.0                                    | 146300                  | 100                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |     |
| HDO 160 4   | 269.7 | 5.6                                    | 147070                  | 93                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |     |

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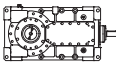
— Thermal verification not necessary

**HDO**



# HDO 160

$n_1 = 1200 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDO 160 2   | 7.3   | 164                                    | 95950                   | 1718                    | *                      | *                         | *                           | *                           | *                            | 822                          | ●                            | *                           | *                           | *                            | 827                          | ●                            |
| HDO 160 2   | 7.9   | 151                                    | 101300                  | 1669                    | *                      | *                         | *                           | *                           | *                            | 833                          |                              | *                           | *                           | *                            | 838                          |                              |
| HDO 160 2   | 8.9   | 134                                    | 102330                  | 1499                    | *                      | *                         | *                           | *                           | 657                          | 832                          |                              | *                           | *                           | *                            | 837                          |                              |
| HDO 160 2   | 10.4  | 115                                    | 110590                  | 1388                    | *                      | *                         | *                           | *                           | 672                          | 847                          |                              | *                           | *                           | *                            | 852                          |                              |
| HDO 160 2   | 11.3  | 106                                    | 113790                  | 1314                    | *                      | *                         | *                           | *                           | 678                          | 853                          |                              | *                           | *                           | 552                          | 858                          |                              |
| HDO 160 2   | 12.2  | 99                                     | 104960                  | 1130                    | *                      | 572                       | *                           | 513                         | 756                          | 931                          |                              | *                           | 470                         | 630                          | 936                          |                              |
| HDO 160 2   | 14.2  | 85                                     | 118570                  | 1094                    | *                      | 581                       | 444                         | 522                         | 765                          | 940                          |                              | *                           | 479                         | 639                          | 945                          |                              |
| HDO 160 2   | 15.4  | 78                                     | 122130                  | 1036                    | *                      | 586                       | 449                         | 527                         | 770                          | 945                          |                              | *                           | 484                         | 644                          | 950                          |                              |
| HDO 160 3   | 17.7  | 68                                     | 109930                  | 828                     | *                      | 438                       | 351                         | 408                         | 584                          | 710                          | 774                          | *                           | 376                         | 492                          | 714                          | 924                          |
| HDO 160 3   | 20.7  | 58                                     | 128300                  | 827                     | *                      | 442                       | 355                         | 412                         | 588                          | 714                          | 778                          | *                           | 380                         | 496                          | 718                          | 928                          |
| HDO 160 3   | 22.5  | 53                                     | 139460                  | 827                     | *                      | 443                       | 356                         | 413                         | 589                          | 715                          | 779                          | *                           | 381                         | 497                          | 719                          | 929                          |
| HDO 160 3   | 24.6  | 49                                     | 127290                  | 690                     | *                      | 455                       | 368                         | 425                         | 601                          | 727                          | —                            | 325                         | 393                         | 509                          | 731                          | —                            |
| HDO 160 3   | 28.8  | 42                                     | 146300                  | 679                     | *                      | 458                       | 371                         | 428                         | 604                          | 730                          | —                            | 328                         | 396                         | 512                          | 734                          | —                            |
| HDO 160 3   | 31.3  | 38                                     | 138890                  | 593                     | 245                    | 459                       | 372                         | 429                         | 605                          | —                            | —                            | 329                         | 397                         | 513                          | 735                          | —                            |
| HDO 160 3   | 34.9  | 34                                     | 127430                  | 487                     | 290                    | 504                       | 417                         | 474                         | 650                          | —                            | —                            | 374                         | 442                         | 558                          | —                            | —                            |
| HDO 160 3   | 40.7  | 29.5                                   | 145570                  | 477                     | 292                    | 506                       | 419                         | 476                         | 652                          | —                            | —                            | 376                         | 444                         | 560                          | —                            | —                            |
| HDO 160 3   | 44.3  | 27.1                                   | 137690                  | 415                     | 293                    | 507                       | 420                         | —                           | —                            | —                            | —                            | 377                         | 445                         | —                            | —                            | —                            |
| HDO 160 3   | 49.4  | 24.3                                   | 131890                  | 356                     | 304                    | 518                       | 431                         | —                           | —                            | —                            | —                            | 388                         | —                           | —                            | —                            | —                            |
| HDO 160 3   | 54.1  | 22.2                                   | 129470                  | 319                     | 308                    | 522                       | 435                         | —                           | —                            | —                            | —                            | 392                         | —                           | —                            | —                            | —                            |
| HDO 160 3   | 63.2  | 19.0                                   | 144180                  | 305                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 3   | 68.6  | 17.5                                   | 136410                  | 265                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 75.9  | 15.8                                   | 115310                  | 207                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 88.6  | 13.5                                   | 134500                  | 207                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 96.3  | 12.5                                   | 142280                  | 201                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 115.2 | 10.4                                   | 126280                  | 149                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 125.2 | 9.6                                    | 137260                  | 149                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 137.1 | 8.8                                    | 141760                  | 141                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 160.1 | 7.5                                    | 146300                  | 125                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 174.0 | 6.9                                    | 147070                  | 115                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 194.1 | 6.2                                    | 143330                  | 101                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 212.6 | 5.6                                    | 140570                  | 90                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 248.1 | 4.8                                    | 146300                  | 80                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 269.7 | 4.4                                    | 147070                  | 74                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

HDO

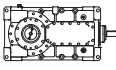
\* 

— Thermal verification not necessary



# HDO 160

$n_1 = 1200 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C  |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDO 160 2   | 7.3   | 164                                    | 95950                   | 1718                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 709                          |                              |
| HDO 160 2   | 7.9   | 151                                    | 101300                  | 1669                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 720                          |                              |
| HDO 160 2   | 8.9   | 134                                    | 102330                  | 1499                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 719                          |                              |
| HDO 160 2   | 10.4  | 115                                    | 110590                  | 1388                    | *                      | *                         | *                           | *                           | *                            | *                            |                              | *                           | *                           | *                            | 734                          |                              |
| HDO 160 2   | 11.3  | 106                                    | 113790                  | 1314                    | *                      | *                         | *                           | *                           | *                            | *                            | ●                            | *                           | *                           | *                            | 740                          | ●                            |
| HDO 160 2   | 12.2  | 99                                     | 104960                  | 1130                    | *                      | *                         | *                           | *                           | *                            | 515                          |                              | *                           | *                           | 512                          | 818                          |                              |
| HDO 160 2   | 14.2  | 85                                     | 118570                  | 1094                    | *                      | *                         | *                           | *                           | *                            | 524                          |                              | *                           | *                           | 521                          | 827                          |                              |
| HDO 160 2   | 15.4  | 78                                     | 122130                  | 1036                    | *                      | *                         | *                           | *                           | 432                          | 529                          |                              | *                           | *                           | 526                          | 832                          |                              |
| HDO 160 3   | 17.7  | 68                                     | 109930                  | 828                     | *                      | *                         | *                           | *                           | 334                          | 404                          | 434                          | *                           | *                           | 402                          | 624                          | 834                          |
| HDO 160 3   | 20.7  | 58                                     | 128300                  | 827                     | *                      | *                         | *                           | *                           | 338                          | 408                          | 438                          | *                           | *                           | 406                          | 628                          | 838                          |
| HDO 160 3   | 22.5  | 53                                     | 139460                  | 827                     | *                      | *                         | *                           | *                           | 340                          | 410                          | 440                          | *                           | *                           | 408                          | 630                          | 840                          |
| HDO 160 3   | 24.6  | 49                                     | 127290                  | 690                     | *                      | 308                       | *                           | *                           | 351                          | 421                          | 451                          | *                           | 303                         | 419                          | 641                          | 851                          |
| HDO 160 3   | 28.8  | 42                                     | 146300                  | 679                     | *                      | 311                       | *                           | *                           | 354                          | 424                          | 454                          | *                           | 306                         | 422                          | 644                          | 854                          |
| HDO 160 3   | 31.3  | 38                                     | 138890                  | 593                     | *                      | 312                       | *                           | 257                         | 355                          | 425                          | 455                          | 239                         | 307                         | 423                          | 645                          | —                            |
| HDO 160 3   | 34.9  | 34                                     | 127430                  | 487                     | 201                    | 358                       | 272                         | 303                         | 401                          | 471                          | 501                          | 285                         | 353                         | 469                          | 691                          | —                            |
| HDO 160 3   | 40.7  | 29.5                                   | 145570                  | 477                     | 202                    | 359                       | 273                         | 304                         | 402                          | 472                          | 502                          | 286                         | 354                         | 470                          | 692                          | —                            |
| HDO 160 3   | 44.3  | 27.1                                   | 137690                  | 415                     | 203                    | 360                       | 274                         | 305                         | 403                          | 473                          | —                            | 287                         | 355                         | 471                          | —                            | —                            |
| HDO 160 3   | 49.4  | 24.3                                   | 131890                  | 356                     | 214                    | 371                       | 285                         | 316                         | 414                          | —                            | —                            | 298                         | 366                         | —                            | —                            | —                            |
| HDO 160 3   | 54.1  | 22.2                                   | 129470                  | 319                     | 218                    | 375                       | 289                         | 320                         | —                            | —                            | —                            | 302                         | 370                         | —                            | —                            | —                            |
| HDO 160 3   | 63.2  | 19.0                                   | 144180                  | 305                     | 220                    | 377                       | 291                         | 322                         | —                            | —                            | —                            | 304                         | 372                         | —                            | —                            | —                            |
| HDO 160 3   | 68.6  | 17.5                                   | 136410                  | 265                     | 220                    | 377                       | 291                         | —                           | —                            | —                            | —                            | 304                         | —                           | —                            | —                            | —                            |
| HDO 160 4   | 75.9  | 15.8                                   | 115310                  | 207                     | 155                    | 274                       | 210                         | —                           | —                            | —                            | —                            | 221                         | —                           | —                            | —                            | —                            |
| HDO 160 4   | 88.6  | 13.5                                   | 134500                  | 207                     | 156                    | 275                       | 211                         | —                           | —                            | —                            | —                            | 222                         | —                           | —                            | —                            | —                            |
| HDO 160 4   | 96.3  | 12.5                                   | 142280                  | 201                     | 156                    | 275                       | 211                         | —                           | —                            | —                            | —                            | 222                         | —                           | —                            | —                            | —                            |
| HDO 160 4   | 115.2 | 10.4                                   | 126280                  | 149                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 125.2 | 9.6                                    | 137260                  | 149                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 137.1 | 8.8                                    | 141760                  | 141                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 160.1 | 7.5                                    | 146300                  | 125                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 174.0 | 6.9                                    | 147070                  | 115                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 194.1 | 6.2                                    | 143330                  | 101                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 212.6 | 5.6                                    | 140570                  | 90                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 248.1 | 4.8                                    | 146300                  | 80                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 269.7 | 4.4                                    | 147070                  | 74                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

**HDO**

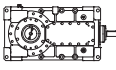
\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary



# HDO 160

$n_1 = 1000 \text{ min}^{-1}$

|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C  |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |
|---|-------|--|-------------------------|-------------------------|------------------------|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|
|   |       |  |                         |                         | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |
| HDO 160 2   | 7.3   | 137                                    | 101350                  | 1513                    | *                      | *                         | *                           | *                           | 702                          | 877                          |                              | *                           | *                           | *                            | 882                          |                              |
| HDO 160 2   | 7.9   | 126                                    | 107010                  | 1469                    | *                      | *                         | *                           | *                           | 711                          | 886                          |                              | *                           | *                           | *                            | 891                          |                              |
| HDO 160 2   | 8.9   | 112                                    | 108070                  | 1319                    | *                      | *                         | *                           | *                           | 710                          | 885                          |                              | *                           | *                           | 584                          | 890                          |                              |
| HDO 160 2   | 10.4  | 96                                     | 116810                  | 1221                    | *                      | *                         | *                           | *                           | 722                          | 897                          |                              | *                           | *                           | 596                          | 902                          |                              |
| HDO 160 2   | 11.3  | 88                                     | 120180                  | 1156                    | *                      | 474                       | *                           | 484                         | 727                          | 902                          | ●                            | *                           | *                           | 601                          | 907                          | ●                            |
| HDO 160 2   | 12.2  | 82                                     | 110850                  | 995                     | *                      | 537                       | 469                         | 547                         | 790                          | 965                          |                              | 410                         | 504                         | 664                          | 970                          |                              |
| HDO 160 2   | 14.2  | 71                                     | 125230                  | 963                     | *                      | 545                       | 477                         | 555                         | 798                          | 973                          |                              | 418                         | 512                         | 672                          | 978                          |                              |
| HDO 160 2   | 15.4  | 65                                     | 129010                  | 912                     | *                      | 548                       | 480                         | 558                         | 801                          | 976                          |                              | 421                         | 515                         | 675                          | 981                          |                              |
| HDO 160 3   | 17.7  | 56                                     | 111830                  | 702                     | *                      | 411                       | 372                         | 429                         | 605                          | 731                          | —                            | 329                         | 397                         | 513                          | 735                          | —                            |
| HDO 160 3   | 20.7  | 48                                     | 130520                  | 701                     | *                      | 414                       | 375                         | 432                         | 608                          | 734                          | —                            | 332                         | 400                         | 516                          | 738                          | —                            |
| HDO 160 3   | 22.5  | 44                                     | 139450                  | 690                     | *                      | 415                       | 376                         | 433                         | 609                          | 735                          | —                            | 333                         | 401                         | 517                          | 739                          | —                            |
| HDO 160 3   | 24.6  | 41                                     | 134450                  | 607                     | 259                    | 425                       | 386                         | 443                         | 619                          | —                            | —                            | 343                         | 411                         | 527                          | 749                          | —                            |
| HDO 160 3   | 28.8  | 35                                     | 146160                  | 565                     | 261                    | 427                       | 388                         | 445                         | 621                          | —                            | —                            | 345                         | 413                         | 529                          | 751                          | —                            |
| HDO 160 3   | 31.3  | 32                                     | 138240                  | 492                     | 262                    | 428                       | 389                         | 446                         | 622                          | —                            | —                            | 346                         | 414                         | 530                          | —                            | —                            |
| HDO 160 3   | 34.9  | 28.6                                   | 132770                  | 423                     | 298                    | 464                       | 425                         | —                           | —                            | —                            | —                            | 382                         | 450                         | —                            | —                            | —                            |
| HDO 160 3   | 40.7  | 24.5                                   | 144960                  | 396                     | 300                    | 466                       | 427                         | —                           | —                            | —                            | —                            | 384                         | 452                         | —                            | —                            | —                            |
| HDO 160 3   | 44.3  | 22.6                                   | 137130                  | 344                     | 300                    | 466                       | 427                         | —                           | —                            | —                            | —                            | 384                         | —                           | —                            | —                            | —                            |
| HDO 160 3   | 49.4  | 20.2                                   | 131890                  | 297                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 3   | 54.1  | 18.5                                   | 129470                  | 266                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 3   | 63.2  | 15.8                                   | 146300                  | 258                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 3   | 68.6  | 14.6                                   | 139010                  | 225                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 75.9  | 13.2                                   | 121800                  | 182                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 88.6  | 11.3                                   | 134500                  | 172                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 96.3  | 10.4                                   | 146200                  | 172                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 115.2 | 8.7                                    | 126280                  | 124                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 125.2 | 8.0                                    | 138630                  | 126                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 137.1 | 7.3                                    | 141230                  | 117                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 160.1 | 6.2                                    | 146300                  | 104                     | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 174.0 | 5.7                                    | 147070                  | 96                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 194.1 | 5.2                                    | 143330                  | 84                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 212.6 | 4.7                                    | 140490                  | 75                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 248.1 | 4.0                                    | 146300                  | 67                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |
| HDO 160 4   | 269.7 | 3.7                                    | 147070                  | 62                      | —                      | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |

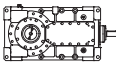
HDO

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary





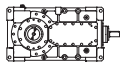
| HDO 160   |       |  |                         |                         | n <sub>1</sub> = 1000 min <sup>-1</sup> |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |   |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|---|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 40°C                   |                           |                             |                             |                              |                              |                              |                             |                             |                              |                              |                              |   |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>TMCRA5</sub><br>[kW] | P <sub>TMCRA9</sub><br>[kW] | P <sub>TMCRA21</sub><br>[kW] | P <sub>TMCRA34</sub><br>[kW] | P <sub>TMCRA51</sub><br>[kW] | P <sub>TMCRW5</sub><br>[kW] | P <sub>TMCRW9</sub><br>[kW] | P <sub>TMCRW21</sub><br>[kW] | P <sub>TMCRW34</sub><br>[kW] | P <sub>TMCRW51</sub><br>[kW] |   |
| HDO 160 2   | 7.3   | 137                                    | 101350                  | 1513                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | 764                          | * |
| HDO 160 2   | 7.9   | 126                                    | 107010                  | 1469                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | 773                          | * |
| HDO 160 2   | 8.9   | 112                                    | 108070                  | 1319                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | 772                          | * |
| HDO 160 2   | 10.4  | 96                                     | 116810                  | 1221                    | *                                       | *                         | *                           | *                           | *                            | *                            | *                            | *                           | *                           | *                            | *                            | 784                          | * |
| HDO 160 2   | 11.3  | 88                                     | 120180                  | 1156                    | *                                       | *                         | *                           | *                           | *                            | 486                          | ●                            | *                           | *                           | 483                          | 789                          | ●                            |   |
| HDO 160 2   | 12.2  | 82                                     | 110850                  | 995                     | *                                       | *                         | *                           | *                           | 452                          | 549                          | *                            | *                           | 546                         | 852                          | *                            |                              |   |
| HDO 160 2   | 14.2  | 71                                     | 125230                  | 963                     | *                                       | *                         | *                           | *                           | 460                          | 557                          | *                            | 394                         | 554                         | 860                          | *                            |                              |   |
| HDO 160 2   | 15.4  | 65                                     | 129010                  | 912                     | *                                       | 365                       | *                           | *                           | 463                          | 560                          | *                            | 397                         | 557                         | 863                          | *                            |                              |   |
| HDO 160 3   | 17.7  | 56                                     | 111830                  | 702                     | *                                       | *                         | *                           | *                           | 355                          | 425                          | 455                          | *                           | 307                         | 423                          | 645                          | 855                          |   |
| HDO 160 3   | 20.7  | 48                                     | 130520                  | 701                     | *                                       | *                         | *                           | *                           | 358                          | 428                          | 458                          | *                           | 310                         | 426                          | 648                          | 858                          |   |
| HDO 160 3   | 22.5  | 44                                     | 139450                  | 690                     | *                                       | 281                       | *                           | *                           | 359                          | 429                          | 459                          | *                           | 311                         | 427                          | 649                          | 859                          |   |
| HDO 160 3   | 24.6  | 41                                     | 134450                  | 607                     | *                                       | 291                       | *                           | 271                         | 369                          | 439                          | 469                          | 253                         | 321                         | 437                          | 659                          | —                            |   |
| HDO 160 3   | 28.8  | 35                                     | 146160                  | 565                     | *                                       | 293                       | 242                         | 273                         | 371                          | 441                          | 471                          | 255                         | 323                         | 439                          | 661                          | —                            |   |
| HDO 160 3   | 31.3  | 32                                     | 138240                  | 492                     | *                                       | 294                       | 243                         | 274                         | 372                          | 442                          | 472                          | 256                         | 324                         | 440                          | 662                          | —                            |   |
| HDO 160 3   | 34.9  | 28.6                                   | 132770                  | 423                     | 209                                     | 331                       | 280                         | 311                         | 409                          | 479                          | —                            | 293                         | 361                         | 477                          | —                            | —                            |   |
| HDO 160 3   | 40.7  | 24.5                                   | 144960                  | 396                     | 210                                     | 332                       | 281                         | 312                         | 410                          | —                            | —                            | 294                         | 362                         | 478                          | —                            | —                            |   |
| HDO 160 3   | 44.3  | 22.6                                   | 137130                  | 344                     | 211                                     | 333                       | 282                         | 313                         | 411                          | —                            | —                            | 295                         | 363                         | —                            | —                            | —                            |   |
| HDO 160 3   | 49.4  | 20.2                                   | 131890                  | 297                     | 220                                     | 342                       | 291                         | 322                         | —                            | —                            | —                            | 304                         | —                           | —                            | —                            | —                            |   |
| HDO 160 3   | 54.1  | 18.5                                   | 129470                  | 266                     | 223                                     | 345                       | 294                         | —                           | —                            | —                            | —                            | 307                         | —                           | —                            | —                            | —                            |   |
| HDO 160 3   | 63.2  | 15.8                                   | 146300                  | 258                     | 224                                     | 346                       | 295                         | —                           | —                            | —                            | —                            | 308                         | —                           | —                            | —                            | —                            |   |
| HDO 160 3   | 68.6  | 14.6                                   | 139010                  | 225                     | 224                                     | 346                       | 295                         | —                           | —                            | —                            | —                            | 308                         | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 75.9  | 13.2                                   | 121800                  | 182                     | 161                                     | 254                       | 216                         | —                           | —                            | —                            | —                            | 227                         | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 88.6  | 11.3                                   | 134500                  | 172                     | 161                                     | 254                       | 216                         | —                           | —                            | —                            | —                            | 227                         | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 96.3  | 10.4                                   | 146200                  | 172                     | 161                                     | 254                       | 216                         | —                           | —                            | —                            | —                            | 227                         | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 115.2 | 8.7                                    | 126280                  | 124                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 125.2 | 8.0                                    | 138630                  | 126                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 137.1 | 7.3                                    | 141230                  | 117                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 160.1 | 6.2                                    | 146300                  | 104                     | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 174.0 | 5.7                                    | 147070                  | 96                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 194.1 | 5.2                                    | 143330                  | 84                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 212.6 | 4.7                                    | 140490                  | 75                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 248.1 | 4.0                                    | 146300                  | 67                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |   |
| HDO 160 4   | 269.7 | 3.7                                    | 147070                  | 62                      | —                                       | —                         | —                           | —                           | —                            | —                            | —                            | —                           | —                           | —                            | —                            | —                            |   |

HDO

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— Thermal verification not necessary

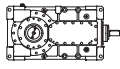


| HDO 170   |       |  |                         |                         | n <sub>1</sub> = 1500 min <sup>-1</sup> |                           |                        |                           |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|------------------------|---------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           | t <sub>a</sub> = 40°C  |                           |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] |
| HDO 170 3   | 15.9  | 94                                     | 130010                  | 1364                    | *                                       | *                         | *                      | *                         |
| HDO 170 3   | 18.5  | 81                                     | 150910                  | 1364                    | *                                       | *                         | *                      | *                         |
| HDO 170 3   | 20.0  | 75                                     | 163440                  | 1364                    | *                                       | *                         | *                      | *                         |
| HDO 170 3   | 21.7  | 69                                     | 146900                  | 1132                    | *                                       | 469                       | *                      | *                         |
| HDO 170 3   | 26.2  | 57                                     | 165080                  | 1052                    | *                                       | 554                       | *                      | *                         |
| HDO 170 3   | 28.4  | 53                                     | 178800                  | 1052                    | *                                       | 556                       | *                      | *                         |
| HDO 170 3   | 30.7  | 49                                     | 158700                  | 862                     | *                                       | 570                       | *                      | 396                       |
| HDO 170 3   | 35.7  | 42                                     | 184210                  | 862                     | *                                       | 572                       | *                      | 398                       |
| HDO 170 3   | 38.6  | 37                                     | 183140                  | 753                     | 322                                     | 596                       | *                      | 422                       |
| HDO 170 3   | 44.0  | 34                                     | 181730                  | 690                     | 323                                     | 597                       | *                      | 423                       |
| HDO 170 3   | 47.6  | 31                                     | 176740                  | 619                     | 331                                     | 605                       | *                      | 431                       |
| HDO 170 3   | 55.3  | 27.1                                   | 189370                  | 572                     | 333                                     | 607                       | 232                    | 433                       |
| HDO 170 3   | 59.9  | 25.1                                   | 180390                  | 503                     | 334                                     | 608                       | 232                    | 433                       |
| HDO 170 4   | 72.9  | 20.6                                   | 172210                  | 402                     | 251                                     | 450                       | 171                    | 317                       |
| HDO 170 4   | 84.6  | 17.7                                   | 190190                  | 383                     | 264                                     | 463                       | 184                    | 330                       |
| HDO 170 4   | 91.6  | 16.4                                   | 182320                  | 339                     | 265                                     | 464                       | 184                    | 330                       |
| HDO 170 4   | 99.3  | 15.1                                   | 188900                  | 324                     | 258                                     | 457                       | 178                    | 324                       |
| HDO 170 4   | 115.2 | 13.0                                   | 190190                  | 281                     | 268                                     | 467                       | 187                    | 333                       |
| HDO 170 4   | 124.8 | 12.0                                   | 182320                  | 249                     | —                                       | —                         | 187                    | 333                       |
| HDO 170 4   | 139.8 | 10.7                                   | 183700                  | 224                     | —                                       | —                         | 195                    | 341                       |
| HDO 170 4   | 162.3 | 9.2                                    | 190190                  | 200                     | —                                       | —                         | —                      | —                         |
| HDO 170 4   | 175.8 | 8.5                                    | 182320                  | 177                     | —                                       | —                         | —                      | —                         |
| HDO 170 4   | 190.5 | 7.9                                    | 188900                  | 169                     | —                                       | —                         | —                      | —                         |
| HDO 170 4   | 221.1 | 6.8                                    | 190190                  | 146                     | —                                       | —                         | —                      | —                         |
| HDO 170 4   | 239.5 | 6.3                                    | 182320                  | 130                     | —                                       | —                         | —                      | —                         |

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— Thermal verification not necessary



| HDO 180   |       |  |                         |                         | n <sub>1</sub> = 1500 min <sup>-1</sup> |                           |                        |                           |
|---|-------|--|-------------------------|-------------------------|---|---------------------------|------------------------|---------------------------|
|  | i     | n <sub>2</sub><br>[min <sup>-1</sup> ] | Mn <sub>2</sub><br>[Nm] | Pn <sub>1</sub><br>[kW] | t <sub>a</sub> = 20°C                   |                           | t <sub>a</sub> = 40°C  |                           |
|   |       |  |                         |                         | P <sub>T</sub><br>[kW]                  | P <sub>TFAN</sub><br>[kW] | P <sub>T</sub><br>[kW] | P <sub>TFAN</sub><br>[kW] |
| HDO 180 3   | 17.7  | 85                                     | 144460                  | 1363                    | *                                       | *                         | *                      | *                         |
| HDO 180 3   | 20.5  | 73                                     | 167160                  | 1363                    | *                                       | *                         | *                      | *                         |
| HDO 180 3   | 22.1  | 68                                     | 180780                  | 1363                    | *                                       | *                         | *                      | *                         |
| HDO 180 3   | 24.1  | 62                                     | 163220                  | 1130                    | *                                       | 498                       | *                      | *                         |
| HDO 180 3   | 27.9  | 54                                     | 188870                  | 1130                    | *                                       | 502                       | *                      | *                         |
| HDO 180 3   | 31.4  | 48                                     | 197760                  | 1052                    | *                                       | 585                       | *                      | *                         |
| HDO 180 3   | 34.1  | 44                                     | 176340                  | 862                     | *                                       | 598                       | *                      | 417                       |
| HDO 180 3   | 39.5  | 38                                     | 202450                  | 855                     | *                                       | 601                       | *                      | 419                       |
| HDO 180 3   | 42.7  | 35                                     | 198560                  | 776                     | 324                                     | 602                       | *                      | 420                       |
| HDO 180 3   | 48.6  | 31                                     | 197890                  | 679                     | 348                                     | 626                       | *                      | 444                       |
| HDO 180 3   | 52.9  | 28.3                                   | 196380                  | 619                     | 355                                     | 633                       | 248                    | 452                       |
| HDO 180 3   | 61.2  | 24.5                                   | 202450                  | 552                     | 357                                     | 635                       | 249                    | 453                       |
| HDO 180 3   | 66.2  | 22.7                                   | 196430                  | 495                     | 358                                     | 636                       | 250                    | 454                       |
| HDO 180 4   | 81.0  | 18.5                                   | 191340                  | 402                     | 270                                     | 472                       | 184                    | 332                       |
| HDO 180 4   | 93.7  | 16.0                                   | 202450                  | 368                     | 283                                     | 485                       | 197                    | 345                       |
| HDO 180 4   | 101.3 | 14.8                                   | 199380                  | 335                     | 283                                     | 485                       | 197                    | 345                       |
| HDO 180 4   | 110.3 | 13.6                                   | 209900                  | 324                     | 277                                     | 479                       | 191                    | 339                       |
| HDO 180 4   | 127.6 | 11.8                                   | 202450                  | 270                     | —                                       | —                         | 201                    | 349                       |
| HDO 180 4   | 138.0 | 10.9                                   | 207020                  | 255                     | —                                       | —                         | 201                    | 349                       |
| HDO 180 4   | 155.4 | 9.7                                    | 204100                  | 224                     | —                                       | —                         | 208                    | 356                       |
| HDO 180 4   | 179.8 | 8.3                                    | 202450                  | 192                     | —                                       | —                         | —                      | —                         |
| HDO 180 4   | 194.5 | 7.7                                    | 205480                  | 180                     | —                                       | —                         | —                      | —                         |
| HDO 180 4   | 211.6 | 7.1                                    | 209900                  | 169                     | —                                       | —                         | —                      | —                         |
| HDO 180 4   | 244.9 | 6.1                                    | 202450                  | 141                     | —                                       | —                         | —                      | —                         |

\*  BONFIGLIOLI TECHNICAL SERVICE

— Thermal verification not necessary

**HDO**



## 29 MASS MOMENT OF INERTIA




Moments of inertia listed refer to gearbox input shaft and apply exclusively for configurations with a single extension input and output shaft.

|               | $i_N$ | $J \cdot 10^{-4} \text{ [kg m}^2\text{]}$ |        |        |        |         |         |         |         |         |         |         |         |         |         |
|---------------|-------|---|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|               |       | HDO 71                                    | HDO 81 | HDO 91 | HDO 95 | HDO 100 | HDO 110 | HDO 120 | HDO 125 | HDO 130 | HDO 140 | HDO 150 | HDO 160 | HDO 170 | HDO 180 |
| <b>2x</b><br> | 5.6   | —   | —      | —      | —      | 1862    | —       | —       | —       | 8268    | —       | 23425   | —       | —       | —       |
|               | 6.3   | —   | —      | —      | —      | 1780    | 1893    | 2869    | —       | 7943    | 9161    | 21737   | —       | —       | —       |
|               | 7.1   | —   | —      | —      | —      | 1725    | 1803    | 2757    | 3116    | 10164   | 8677    | 20949   | 23848   | —       | —       |
|               | 8.0   | —   | —      | —      | —      | 1578    | 1692    | 2592    | 2991    | 6959    | 8104    | 16297   | 22841   | —       | —       |
|               | 9.0   | —   | —      | —      | —      | 1543    | 1566    | 2774    | 2922    | 8408    | 7438    | 15670   | 19669   | —       | —       |
|               | 10.0  | —   | —      | —      | —      | 1204    | 1494    | 2666    | 2920    | 5207    | 7065    | 12076   | 18609   | —       | —       |
|               | 11.2  | —   | —      | —      | —      | 1182    | 1168    | 2056    | 2206    | 6135    | 5514    | 12006   | 18114   | —       | —       |
|               | 12.5  | —   | —      | —      | —      | 967     | 1121    | 1987    | 2154    | 4070    | 5275    | 9091    | 12785   | —       | —       |
|               | 14.0  | —   | —      | —      | —      | 952     | 996     | 1572    | 1670    | 4673    | 4269    | 8884    | 12212   | —       | —       |
|               | 16.0  | —   | —      | —      | —      | —       | 966     | 1528    | 1636    | —       | 4114    | —       | 11945   | —       | —       |
| 18.0          | —     | —   | —      | —      | —      | —       | —       | 1617    | —       | —       | —       | —       | —       | —       |         |
| <b>3x</b><br> | 14.0  | —   | —      | —      | —      | 940     | —       | —       | —       | —       | —       | —       | —       | —       | —       |
|               | 16.0  | —   | —      | —      | —      | 926     | —       | —       | —       | 3156    | —       | 9690    | —       | —       | —       |
|               | 18.0  | —   | —      | 621    | —      | 836     | 849     | 1233    | —       | 2675    | 3280    | 9480    | 10012   | —       | —       |
|               | 20.0  | —   | —      | 615    | 626    | 540     | 839     | 1205    | 1273    | 2643    | 3184    | 9382    | 9743    | —       | —       |
|               | 22.4  | 119                                       | —      | 612    | 622    | 487     | 550     | 1013    | 1052    | 1913    | 2716    | 8401    | 9618    | —       | —       |
|               | 25.0  | 118                                       | 218    | 575    | 617    | 481     | 494     | 917     | 1038    | 1893    | 1970    | 8292    | 8568    | —       | —       |
|               | 28.0  | 112                                       | 216    | 569    | 577    | 443     | 488     | 592     | 934     | 1728    | 1940    | 5067    | 8428    | —       | —       |
|               | 31.5  | 111                                       | 206    | 548    | 572    | 440     | 448     | 534     | 920     | 1714    | 1764    | 4578    | 8363    | —       | —       |
|               | 35.5  | 107                                       | 204    | 355    | 549    | 415     | 444     | 530     | 808     | 1612    | 1744    | 4524    | 4661    | —       | —       |
|               | 40.0  | 103                                       | 197    | 354    | 546    | 413     | 418     | 464     | 540     | 1137    | 1636    | 3114    | 4592    | —       | —       |
|               | 45.0  | 103                                       | 156    | 343    | 356    | 240     | 415     | 461     | 537     | 1069    | 1623    | 3093    | 4559    | —       | —       |
|               | 50.0  | 87  | 196    | 341    | 343    | 239     | 242     | 278     | 467     | 1063    | 1084    | 2890    | 3142    | —       | —       |
|               | 56.0  | 87  | 151    | 334    | 342    | 228     | 241     | 276     | 465     | 1021    | 1076    | 2867    | 2924    | —       | —       |
|               | 63.0  | 85  | 148    | 334    | 335    | 227     | 230     | 249     | 280     | 1017    | 1031    | 2857    | 2895    | —       | —       |
| 71.0          | 85    | 147                                       | 333    | 334    | 227    | 229     | 248     | 251     | 1042    | 1025    | —       | 2882    | —       | —       |         |
| 80.0          | —     | —   | —      | —      | —      | 227     | 246     | 250     | —       | 1019    | —       | —       | —       | —       | —       |
| 90.0          | —     | —   | —      | —      | —      | —       | —       | 249     | —       | —       | —       | —       | —       | —       | —       |
| <b>4x</b><br> | 71.0  | —   | —      | —      | —      | 168     | —       | —       | —       | 553     | —       | 1023    | —       | —       | —       |
|               | 80.0  | 26  | 76     | 120    | 132    | 167     | 169     | —       | —       | 551     | 558     | 1011    | 1040    | —       | —       |
|               | 90.0  | 26  | 75     | 120    | 120    | 163     | 168     | 182     | —       | 535     | 555     | 952     | 1025    | —       | —       |
|               | 100.0 | 26  | 75     | 130    | 130    | 163     | 143     | 171     | 183     | 533     | 538     | 589     | 1019    | —       | —       |
|               | 112.0 | 26  | 70     | 118    | 130    | 139     | 163     | 171     | 172     | 447     | 536     | 586     | 597     | —       | —       |
|               | 125.0 | 26  | 69     | 118    | 118    | 139     | 140     | 145     | 172     | 446     | 449     | 554     | 593     | —       | —       |
|               | 140.0 | —   | 69     | 113    | 118    | 132     | 70      | 145     | 146     | 410     | 448     | 550     | 559     | —       | —       |
|               | 160.0 | 22  | 69     | 112    | 117    | 68      | 60      | 141     | 146     | 410     | 412     | 301     | 555     | —       | —       |
|               | 180.0 | 22  | 67     | 112    | 112    | 59      | 68      | 71      | 136     | 406     | 411     | 300     | 553     | —       | —       |
|               | 200.0 | 22  | 48     | 112    | 112    | 59      | 59      | 61      | 72      | 405     | 243     | 287     | 303     | —       | —       |
|               | 224.0 | 16  | 66     | 112    | 112    | 56      | 59      | 61      | 62      | 227     | 242     | 285     | 289     | —       | —       |
|               | 250.0 | 22  | 47     | 77     | 77     | 56      | 56      | 58      | 62      | 226     | 227     | 284     | 287     | —       | —       |
|               | 280.0 | —   | 47     | 77     | 77     | 56      | 58      | 60      | 58      | 225     | 227     | —       | 286     | —       | —       |
|               | 315.0 | 15  | 47     | 76     | 76     | 56      | 56      | 57      | 58      | 225     | 225     | —       | —       | —       | —       |
|               | 355.0 | —   | 46     | 76     | 76     | 56      | 56      | 57      | 57      | 226     | 225     | —       | —       | —       | —       |
|               | 400.0 | 15  | 46     | 76     | 76     | —       | 56      | 56      | 57      | —       | 225     | —       | —       | —       | —       |
|               | 450.0 | 15  | 46     | 76     | 76     | —       | —       | —       | 57      | —       | —       | —       | —       | —       | —       |
| 500.0         | 15    | 46  | 76     | 76     | —      | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       |

BONFIGLIOLI TECHNICAL SERVICE



30 EXACT RATIOS

|  | i <sub>N</sub> | i       |         |         |         |         |         |         |         |         |         |         |         |         |         |
|--|----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|  |                | HDO 71  | HDO 81  | HDO 91  | HDO 95  | HDO 100 | HDO 110 | HDO 120 | HDO 125 | HDO 130 | HDO 140 | HDO 150 | HDO 160 | HDO 170 | HDO 180 |
| <b>2x</b><br>   | 5.6            | —       | —       | —       | —       | 5.815   | —       | —       | —       | 5.708   | —       | 5.512   | —       | —       | —       |
|  | 6.3            | —       | —       | —       | —       | 6.462   | 6.354   | 6.569   | —       | 6.231   | 6.569   | 6.459   | —       | —       | —       |
|  | 7.1            | —       | —       | —       | —       | 7.038   | 7.038   | 7.154   | 7.412   | 7.090   | 7.269   | 7.034   | 7.306   | —       | —       |
|  | 8.0            | —       | —       | —       | —       | 8.000   | 8.077   | 8.077   | 7.976   | 7.714   | 8.167   | 8.133   | 7.941   | —       | —       |
|  | 9.0            | —       | —       | —       | —       | 8.714   | 8.714   | 8.857   | 8.831   | 8.778   | 9.000   | 8.857   | 8.933   | —       | —       |
|  | 10.0           | —       | —       | —       | —       | 10.000  | 10.000  | 10.000  | 9.875   | 9.643   | 10.111  | 10.010  | 10.427  | —       | —       |
|  | 11.2           | —       | —       | —       | —       | 10.893  | 10.893  | 11.071  | 11.471  | 10.972  | 11.250  | 10.901  | 11.333  | —       | —       |
|  | 12.5           | —       | —       | —       | —       | 12.400  | 12.500  | 12.500  | 12.344  | 11.957  | 12.639  | 12.607  | 12.152  | —       | —       |
|  | 14.0           | —       | —       | —       | —       | 13.507  | 13.507  | 13.729  | 14.224  | 13.606  | 13.950  | 13.729  | 14.183  | —       | —       |
|  | 16.0           | —       | —       | —       | —       | —       | 15.500  | 15.500  | 15.306  | —       | 15.672  | —       | 15.417  | —       | —       |
| 18.0   | —              | —       | —       | —       | —       | —       | —       | 16.947  | —       | —       | —       | —       | —       | —       |         |
| <b>3x</b><br> | 14.0           | —       | —       | —       | —       | 14.009  | —       | —       | —       | —       | —       | —       | —       | —       | —       |
|  | 16.0           | —       | —       | —       | —       | 15.566  | —       | —       | —       | 15.188  | —       | 15.618  | —       | 15.902  | —       |
|  | 18.0           | —       | —       | 18.587  | —       | 17.308  | 18.910  | 17.260  | —       | 18.265  | 17.719  | 18.300  | 17.735  | 18.457  | 17.691  |
|  | 20.0           | —       | —       | 20.696  | 21.215  | 20.235  | 20.948  | 19.487  | 19.244  | 19.938  | 19.906  | 19.929  | 20.700  | 19.991  | 20.471  |
|  | 22.4           | 21.773  | —       | 22.522  | 22.541  | 22.500  | 22.042  | 21.802  | 22.588  | 22.613  | 23.262  | 21.698  | 22.500  | 21.659  | 22.139  |
|  | 25.0           | 25.278  | 25.863  | 24.054  | 24.652  | 25.000  | 24.583  | 24.579  | 24.308  | 24.686  | 26.027  | 25.425  | 24.641  | 26.181  | 24.096  |
|  | 28.0           | 27.083  | 30.027  | 29.146  | 27.454  | 28.320  | 27.232  | 28.343  | 27.731  | 28.267  | 28.800  | 28.232  | 28.760  | 28.356  | 27.882  |
|  | 31.5           | 31.444  | 31.790  | 30.565  | 31.903  | 31.467  | 30.942  | 31.952  | 33.040  | 30.857  | 32.533  | 30.739  | 31.261  | 30.722  | 31.363  |
|  | 35.5           | 38.143  | 36.908  | 36.914  | 34.887  | 36.000  | 34.276  | 34.796  | 35.798  | 34.862  | 36.000  | 36.019  | 34.908  | 35.660  | 34.136  |
|  | 40.0           | 41.917  | 39.906  | 40.171  | 40.539  | 40.000  | 39.333  | 41.248  | 38.795  | 38.263  | 40.124  | 40.184  | 40.743  | 38.622  | 39.500  |
|  | 45.0           | 48.666  | 44.861  | 42.904  | 43.971  | 43.896  | 43.571  | 44.918  | 42.952  | 43.813  | 44.400  | 43.760  | 44.286  | 43.951  | 42.719  |
|  | 50.0           | 54.207  | 48.141  | 51.987  | 48.970  | 48.773  | 47.960  | 49.526  | 50.080  | 47.829  | 50.427  | 47.646  | 49.406  | 47.619  | 48.613  |
|  | 56.0           | 56.324  | 55.142  | 54.518  | 56.904  | 55.800  | 53.128  | 53.934  | 55.448  | 54.036  | 55.800  | 55.830  | 54.107  | 55.273  | 52.910  |
|  | 63.0           | 69.161  | 59.620  | 60.703  | 62.226  | 62.000  | 60.967  | 63.934  | 60.132  | 58.989  | 62.193  | 60.798  | 63.151  | 59.864  | 61.225  |
| 71.0   | 71.862         | 71.923  | 66.060  | 72.309  | 67.536  | 67.536  | 69.623  | 72.134  | 67.121  | 68.820  | —       | 68.643  | —       | 66.214  |         |
| 80.0   | —              | —       | —       | —       | —       | 77.500  | 78.607  | 77.625  | —       | 77.316  | —       | —       | —       | —       |         |
| 90.0   | —              | —       | —       | —       | —       | —       | —       | 85.944  | —       | —       | —       | —       | —       | —       |         |
| <b>4x</b><br> | 71.0           | —       | —       | —       | —       | 70.800  | —       | —       | —       | 71.498  | —       | 66.861  | —       | 72.872  | —       |
|  | 80.0           | 77.021  | 78.252  | 81.978  | 81.642  | 78.667  | 77.356  | —       | —       | 78.050  | 82.290  | 78.345  | 75.927  | 84.583  | 80.969  |
|  | 90.0           | 89.421  | 94.536  | 91.278  | 93.568  | 90.000  | 85.690  | 86.990  | —       | 88.181  | 91.059  | 92.894  | 88.620  | 91.610  | 93.692  |
|  | 100.0          | 98.268  | 98.229  | 95.251  | 103.743 | 100.000 | 96.694  | 103.119 | 96.987  | 96.262  | 101.491 | 101.848 | 96.326  | 99.256  | 101.326 |
|  | 112.0          | 114.089 | 105.597 | 118.125 | 113.461 | 111.392 | 108.929 | 112.296 | 116.345 | 111.182 | 112.306 | 110.912 | 115.205 | 115.208 | 110.285 |
|  | 125.0          | 118.545 | 127.386 | 128.548 | 128.656 | 123.769 | 121.706 | 125.679 | 125.201 | 121.371 | 127.964 | 120.762 | 125.223 | 124.779 | 127.615 |
|  | 140.0          | ---     | 132.555 | 137.096 | 140.708 | 139.830 | 137.105 | 136.864 | 141.798 | 141.333 | 141.600 | 141.503 | 137.137 | 139.844 | 138.014 |
|  | 160.0          | 154.425 | 159.908 | 159.341 | 163.484 | 160.000 | 154.711 | 162.241 | 152.592 | 154.286 | 162.667 | 157.865 | 160.061 | 162.319 | 155.383 |
|  | 180.0          | 179.287 | 181.444 | 177.418 | 181.869 | 178.227 | 174.286 | 179.673 | 177.999 | 174.311 | 180.000 | 171.914 | 173.980 | 175.804 | 179.800 |
|  | 200.0          | 197.025 | 196.458 | 202.476 | 211.337 | 198.030 | 194.730 | 201.087 | 200.321 | 190.286 | 198.345 | 187.182 | 194.096 | 190.478 | 194.450 |
|  | 225.0          | 228.177 | 227.766 | 225.447 | 231.102 | 223.728 | 215.711 | 218.982 | 226.877 | 219.067 | 219.480 | 219.330 | 212.562 | 221.090 | 211.642 |
|  | 250.0          | 237.681 | 254.773 | 256.348 | 256.564 | 248.587 | 244.444 | 252.424 | 244.148 | 239.143 | 252.133 | 238.849 | 248.095 | 239.458 | 244.900 |
|  | 280.0          | —       | 265.110 | 268.832 | 280.597 | 284.400 | 274.210 | 282.686 | 284.798 | 270.182 | 279.000 | —       | 269.668 | —       | —       |
|  | 315.0          | 308.850 | 312.566 | 317.756 | 325.662 | 316.000 | 310.733 | 325.856 | 315.172 | 294.943 | 310.964 | —       | —       | —       | —       |
|  | 355.0          | —       | 362.888 | 353.805 | 362.681 | 344.214 | 344.214 | 354.855 | 367.649 | 335.604 | 344.100 | —       | —       | —       | —       |
|  | 400.0          | 394.050 | 392.363 | 403.774 | 421.444 | —       | 395.000 | 400.643 | 395.635 | —       | 386.581 | —       | —       | —       | —       |
|  | 450.0          | 457.491 | 455.532 | 449.583 | 460.861 | —       | —       | —       | 438.036 | —       | —       | —       | —       | —       | —       |
| 500.0  | 475.362        | 473.327 | 489.252 | 489.665 | —       | —       | —       | —       | —       | —       | —       | —       | —       | —       |         |

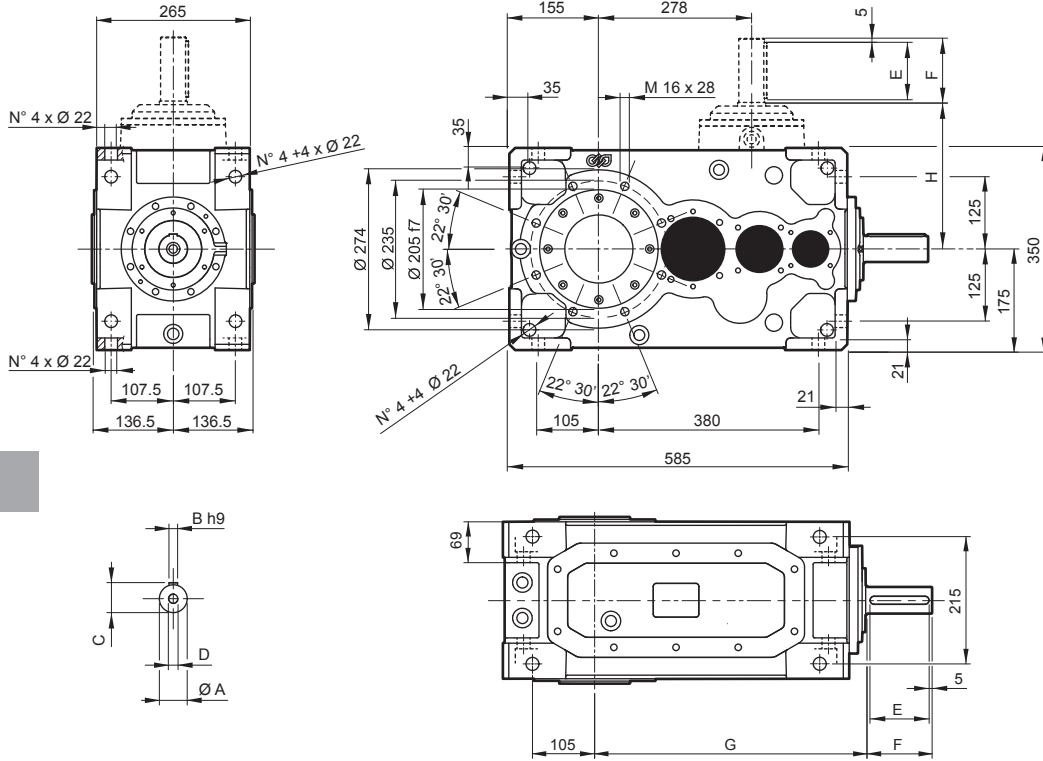
HDO



31 DIMENSIONS AND WEIGHT

**HDO 71**

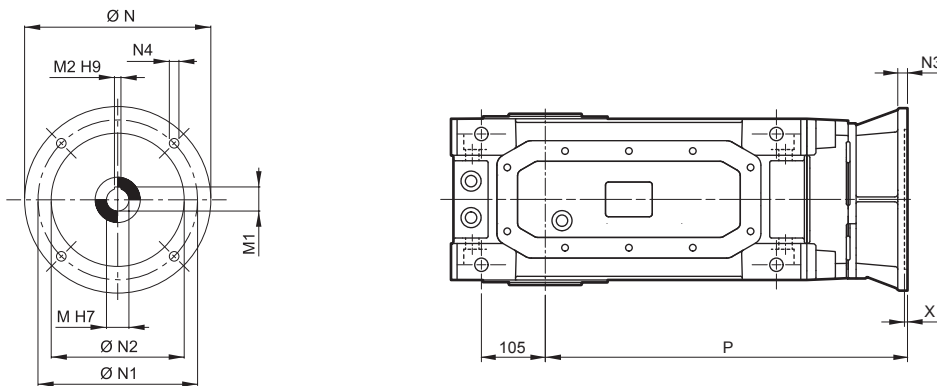
HDO



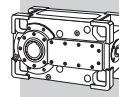
**VP**

| VP       | i =           | A     | B  | C  | D      | E  | F  | G   | H   | Kg LP |
|----------|---------------|-------|----|----|--------|----|----|-----|-----|-------|
| HDO 71 3 | 21.8 ... 71.9 | 32 k6 | 10 | 35 | M12x28 | 70 | 80 | 507 | 229 | 195   |
| HDO 71 4 | 77 ... 475.4  | 24 j6 | 8  | 27 | M8x19  | 50 | 60 | 543 | —   | 215   |

**AD**

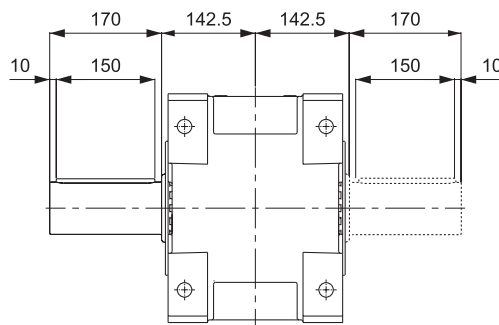
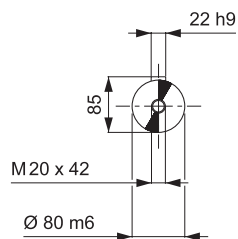


| AD           | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X | P     |
|--------------|----|------|----|-----|-----|-----|----|--------|---|-------|
| HDO 71 3_132 | 38 | 41.3 | 10 | 300 | 265 | 230 | 16 | 14     | 5 | 595.5 |
| HDO 71 3_160 | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6 | 626.5 |
| HDO 71 3_180 | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6 | 626.5 |
| HDO 71 3_200 | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7 | 651.5 |

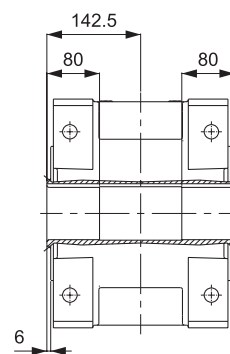
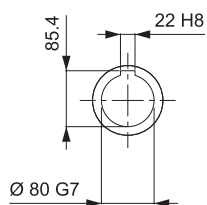


# HDO 71

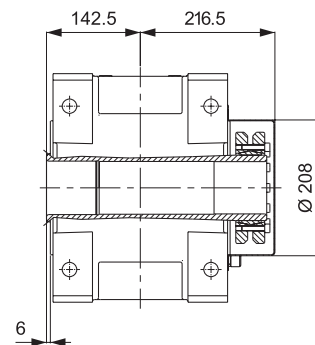
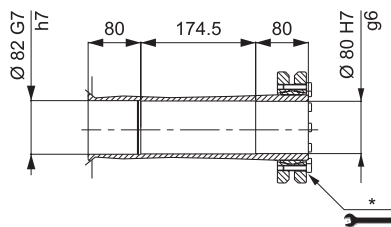
LP



H

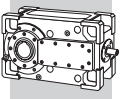


S



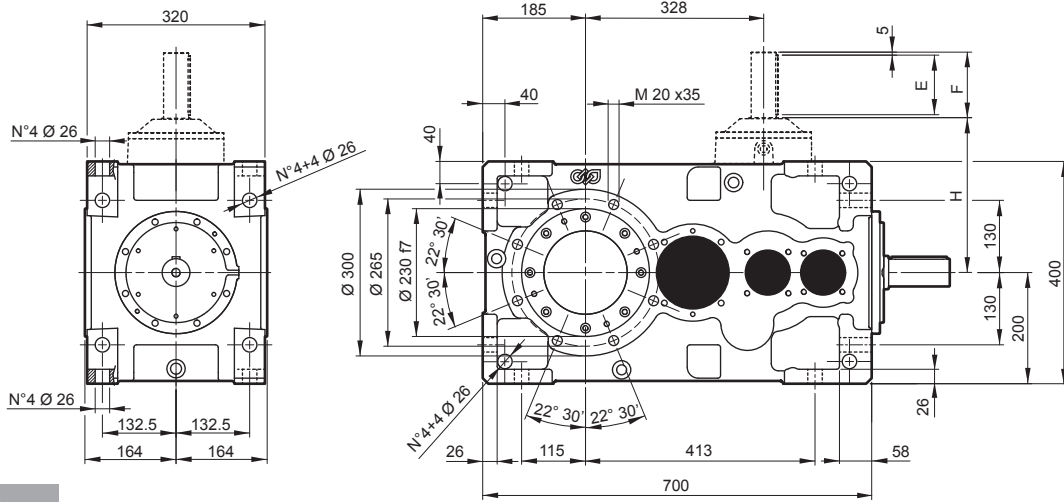
HDO

\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".

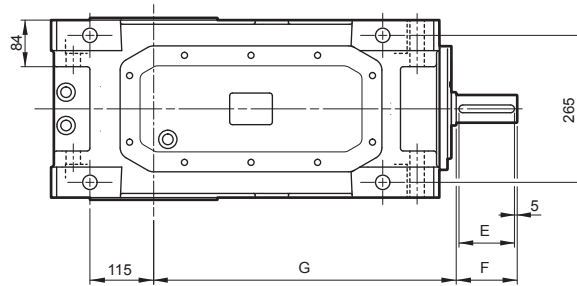
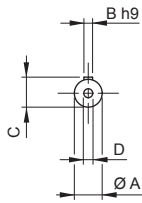


# HDO 81

HDO

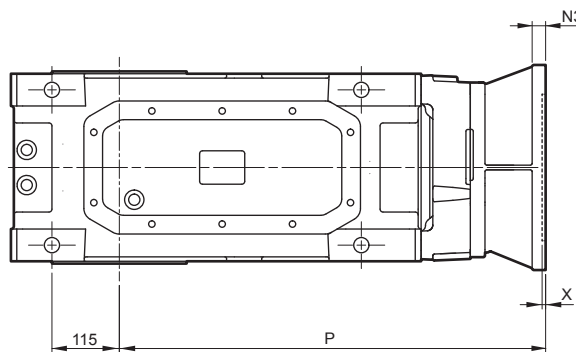
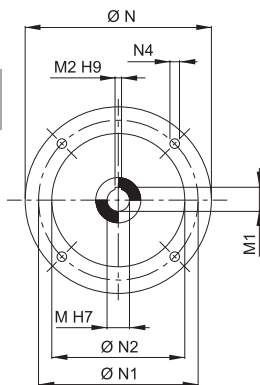


VP



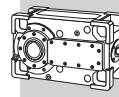
| VP       | i =            | A     | B  | C  | D      | E   | F   | G   | H   | LP  |
|----------|----------------|-------|----|----|--------|-----|-----|-----|-----|-----|
| HDO 81 3 | 25.9 ... 71.9  | 42 k6 | 12 | 45 | M16x36 | 100 | 110 | 600 | 272 | 330 |
| HDO 81 4 | 78.3 ... 473.3 | 28 j6 | 8  | 31 | M10x22 | 50  | 60  | 645 | —   | 340 |

AD



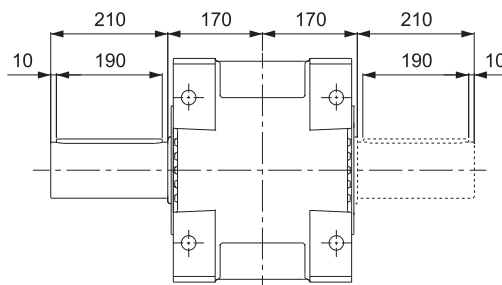
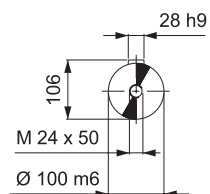
| AD           | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X | P     |
|--------------|----|------|----|-----|-----|-----|----|--------|---|-------|
| HDO 81 3_160 | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6 | 727.5 |
| HDO 81 3_180 | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6 | 727.5 |
| HDO 81 3_200 | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7 | 752.5 |



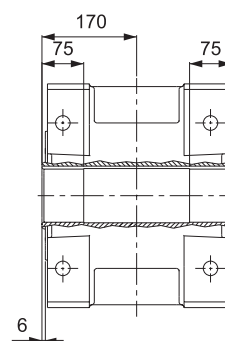
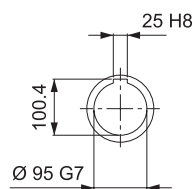


# HDO 81

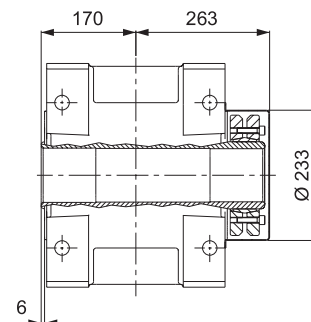
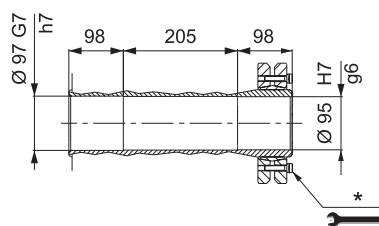
LP



H



S

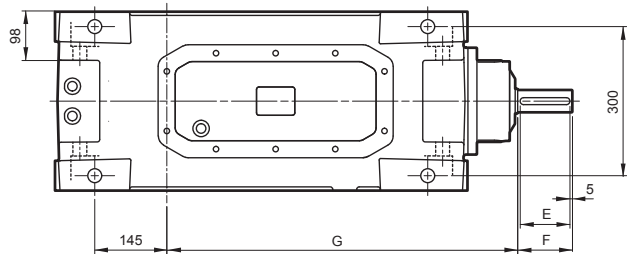
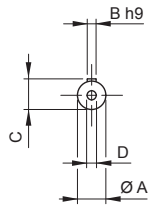
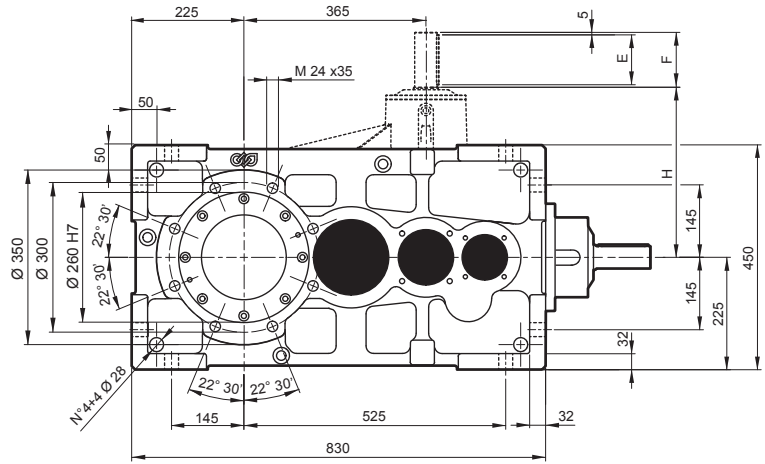
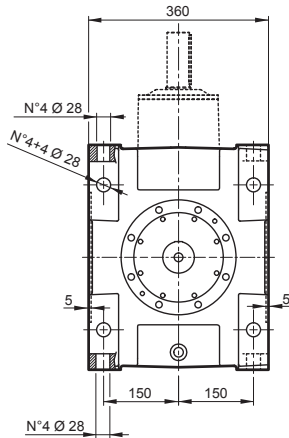


HDO

\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



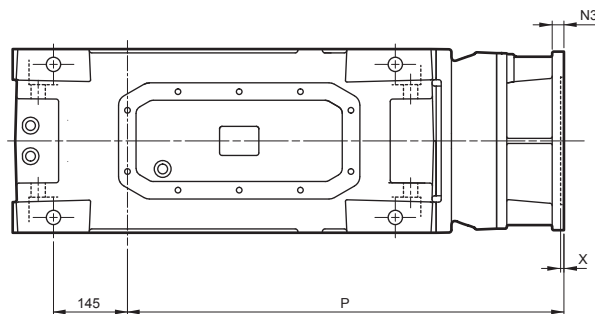
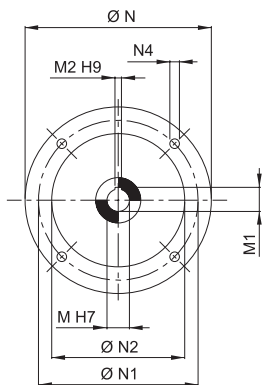
# HDO 91



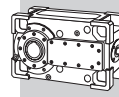
**HDO 91 3**  
**HDO 91 4**

| VP       | i =           | A     | B  | C    | D      | E   | F   | G   | H   | LP  |
|----------|---------------|-------|----|------|--------|-----|-----|-----|-----|-----|
| HDO 91 3 | 18.6 ... 66.1 | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 706 | 341 | 490 |
| HDO 91 4 | 82 ... 489.3  | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 711 | —   | 495 |

**AD**

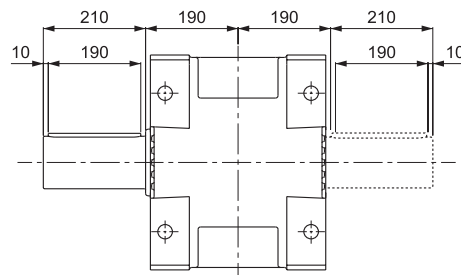
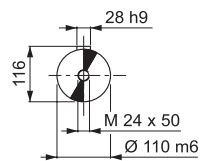


| AD           | M  | M1   | M2 | N   | N1  | N2  | N3 | N4 | X | P     |
|--------------|----|------|----|-----|-----|-----|----|----|---|-------|
| HDO 91 3_180 | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18 | 6 | 855.5 |
| HDO 91 3_200 | 48 | 51.8 | 14 | 350 | 300 | 250 | —  | 18 | 7 | 880.5 |
| HDO 91 4_160 | 38 | 41.3 | 10 | 300 | 265 | 230 | 23 | 14 | 6 | 855.5 |
| HDO 91 4_180 | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18 | 6 | 855.5 |
| HDO 91 4_200 | 48 | 51.8 | 14 | 350 | 300 | 250 | —  | 18 | 7 | 880.5 |

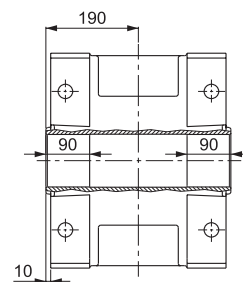
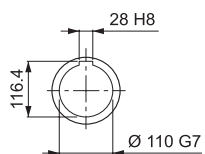


# HDO 91

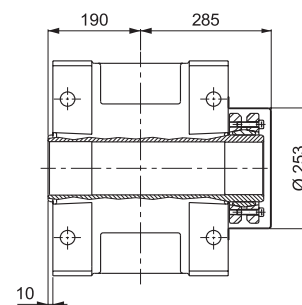
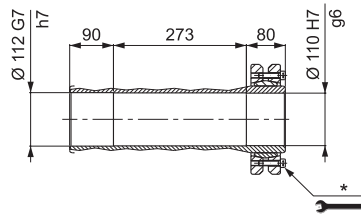
LP



H



S

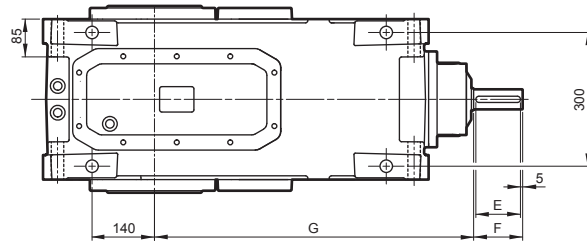
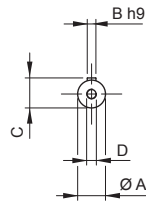
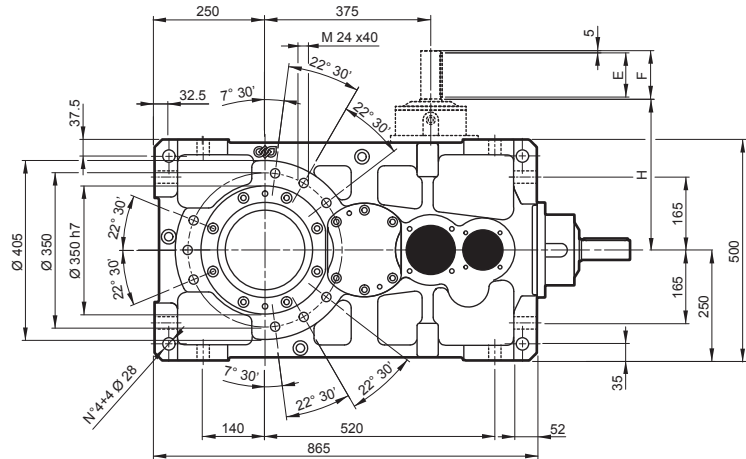
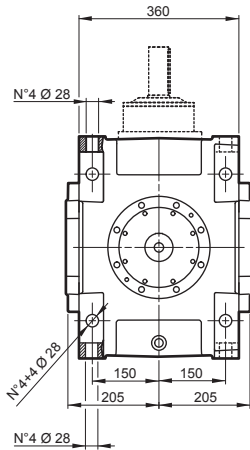


HDO

\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



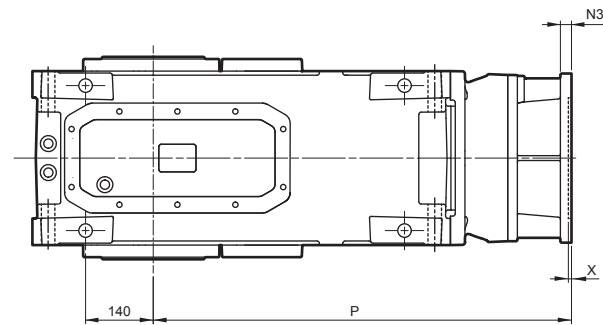
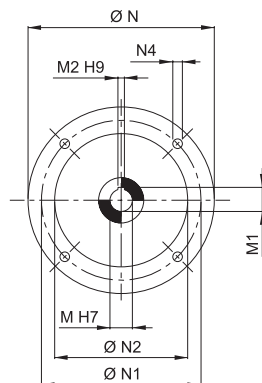
# HDO 95



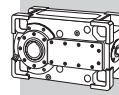
**HDO 95 3**  
**HDO 95 4**

| VP       | i =            | A     | B  | C    | D      | E   | F   | G   | H   | LP  |
|----------|----------------|-------|----|------|--------|-----|-----|-----|-----|-----|
| HDO 95 3 | 21.2 ... 72.3  | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 716 | 341 | 560 |
| HDO 95 4 | 81.6 ... 489.7 | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 711 | —   | 565 |

**AD**

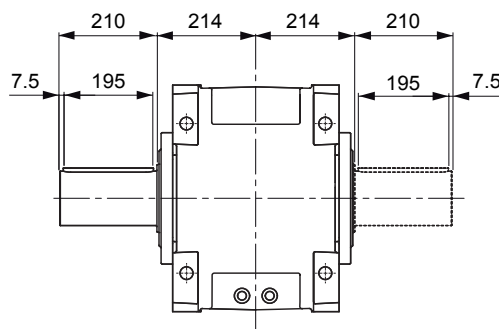
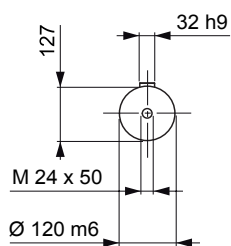


| AD           | M  | M1   | M2 | N   | N1  | N2  | N3 | N4 | X | P     |
|--------------|----|------|----|-----|-----|-----|----|----|---|-------|
| HDO 95 3_180 | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18 | 6 | 865.5 |
| HDO 95 3_200 | 48 | 51.8 | 14 | 350 | 300 | 250 | —  | 18 | 7 | 890.5 |
| HDO 95 4_160 | 38 | 41.3 | 10 | 300 | 265 | 230 | 23 | 14 | 6 | 865.5 |
| HDO 95 4_180 | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18 | 6 | 865.5 |
| HDO 95 4_200 | 48 | 51.8 | 14 | 350 | 300 | 250 | —  | 18 | 7 | 890.5 |

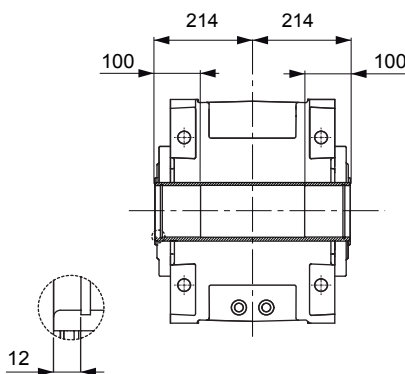
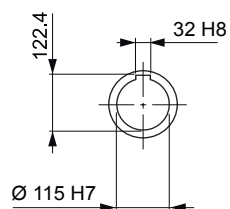


# HDO 95

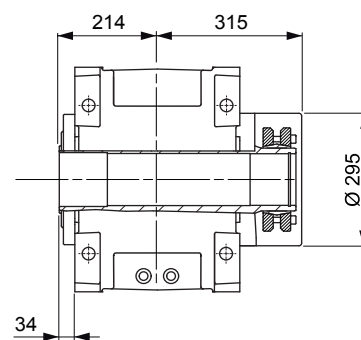
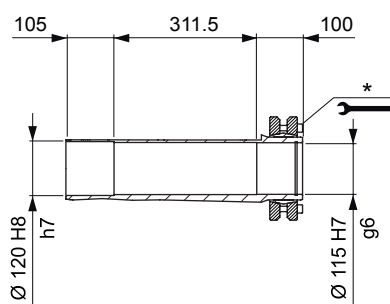
LP



H



S

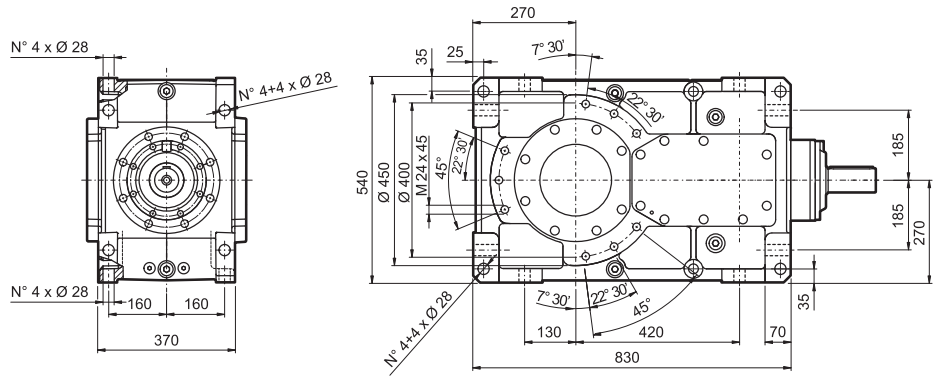


HDO

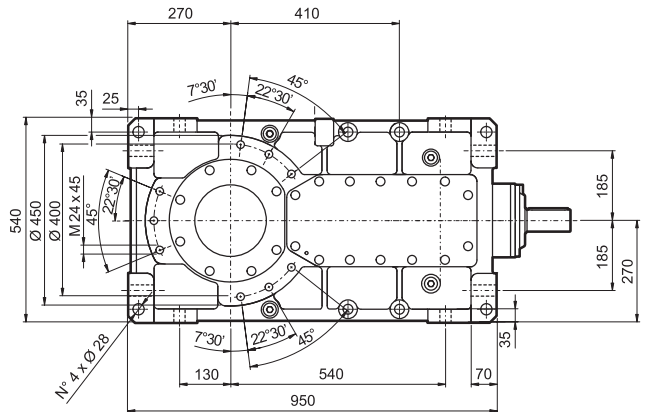
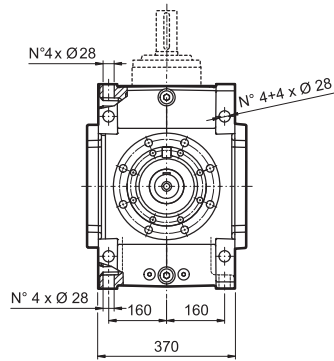
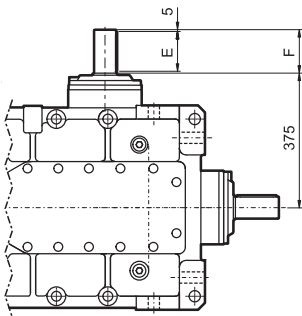
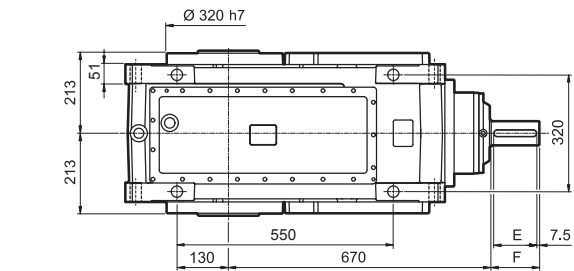
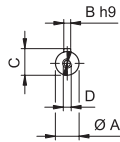
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



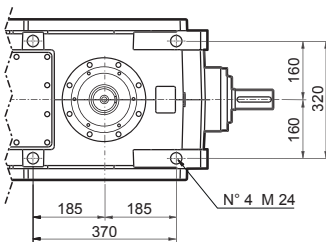
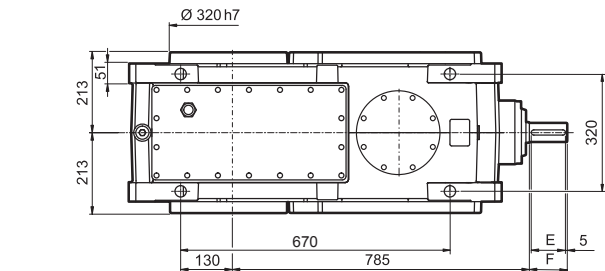
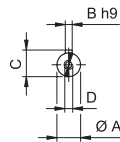
# HDO 100



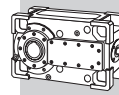
## HDO 100 2



## HDO 100 3 HDO 100 4

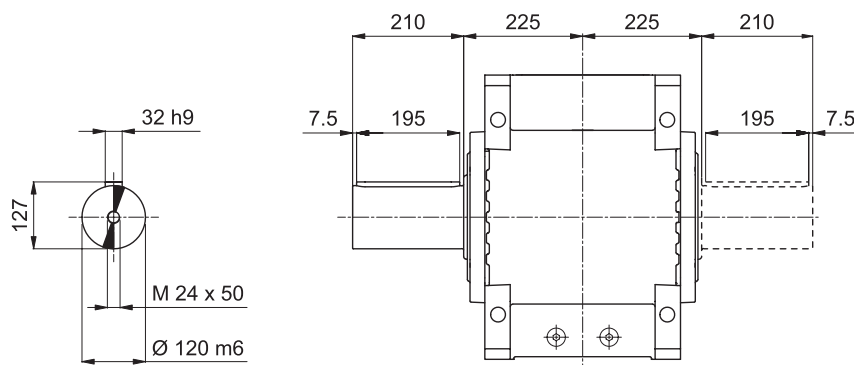


| VP        | i =            | A     | B  | C    | D      | E   | F   | LP  |
|-----------|----------------|-------|----|------|--------|-----|-----|-----|
| HDO 100 2 | 5.8 ... 13.5   | 70 m6 | 20 | 74.5 | M20x42 | 125 | 140 | 640 |
| HDO 100 3 | 14 ... 17.3    | 55 m6 | 16 | 59   | M20x42 | 100 | 110 | 715 |
| HDO 100 3 | 20.2 ... 67.5  | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 715 |
| HDO 100 4 | 70.8 ... 139.8 | 35 k6 | 10 | 38   | M12x28 | 70  | 80  | 730 |
| HDO 100 4 | 160 ... 344.2  | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 730 |

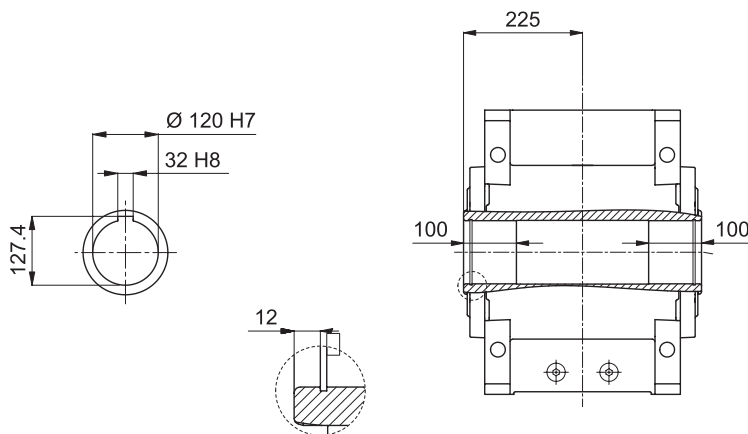


# HDO 100

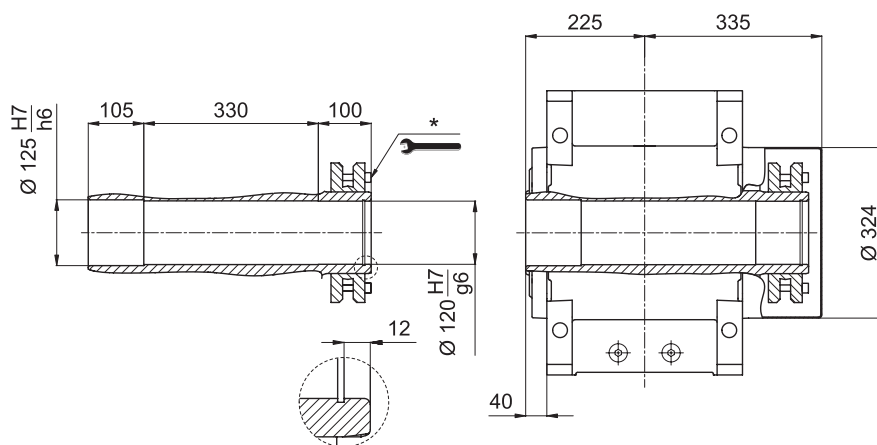
LP



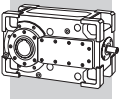
H



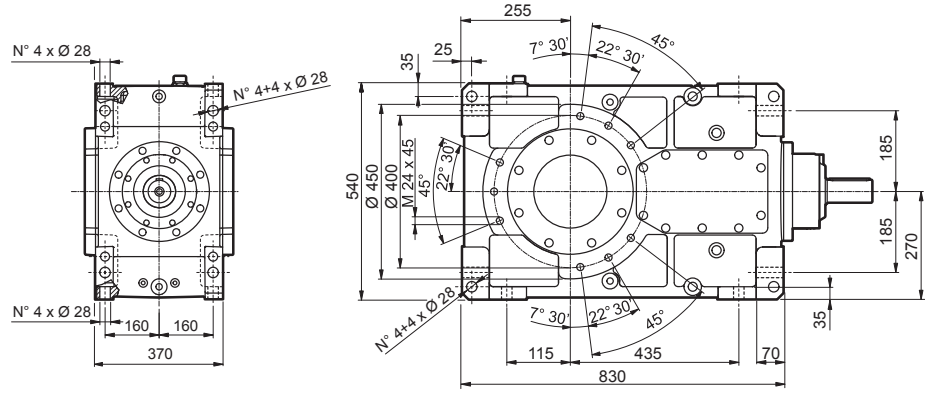
S



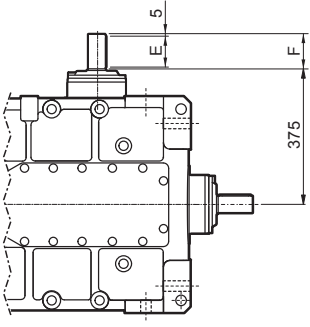
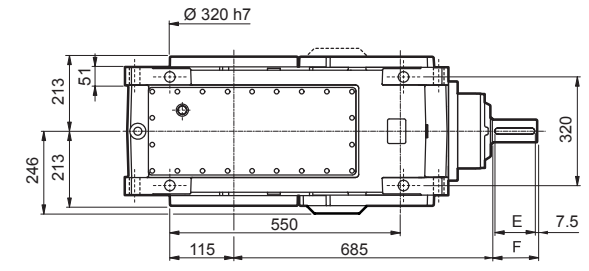
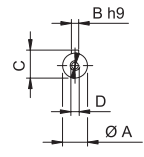
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



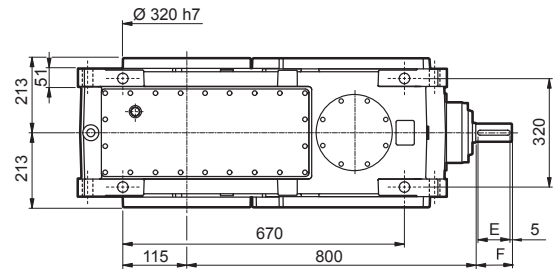
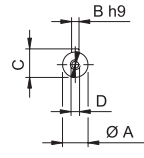
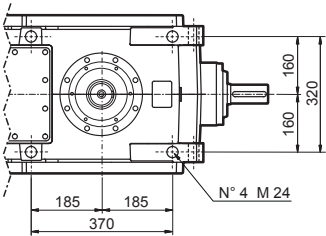
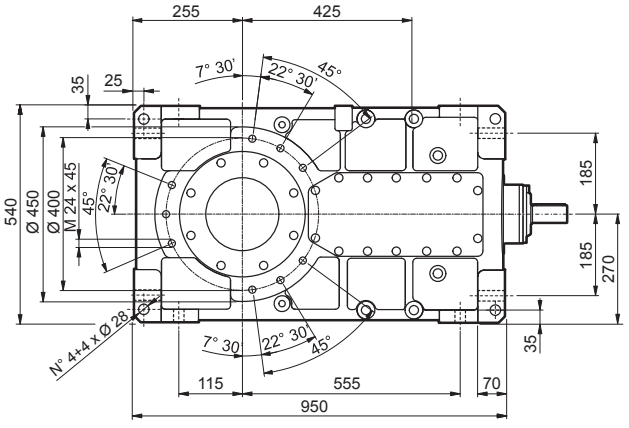
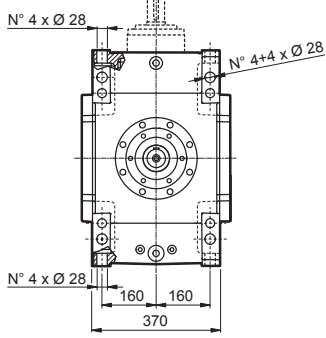
# HDO 110



## HDO 110 2

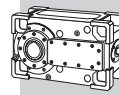


## HDO 110 3 HDO 110 4



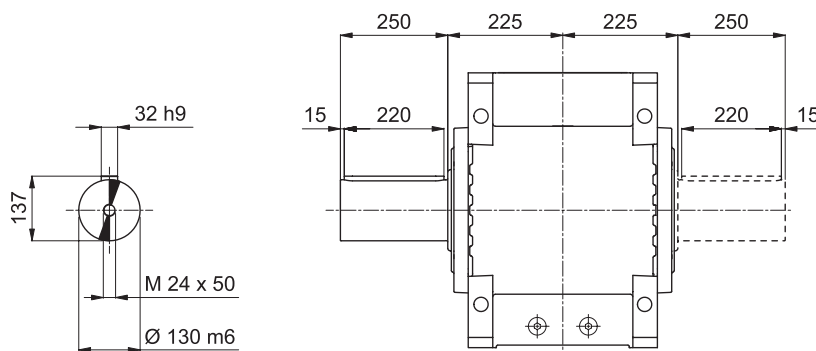
| VP        | i =            | A     | B  | C    | D      | E   | F   | LP  |
|-----------|----------------|-------|----|------|--------|-----|-----|-----|
| HDO 110 2 | 6.4 ... 15.5   | 70 m6 | 20 | 74.5 | M20x42 | 125 | 140 | 695 |
| HDO 110 3 | 18.9 ... 20.9  | 55 m6 | 16 | 59   | M20x42 | 100 | 110 | 770 |
| HDO 110 3 | 22 ... 77.5    | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 770 |
| HDO 110 4 | 77.4 ... 121.7 | 35 k6 | 10 | 38   | M12x28 | 70  | 80  | 765 |
| HDO 110 4 | 137.1 ... 395  | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 765 |



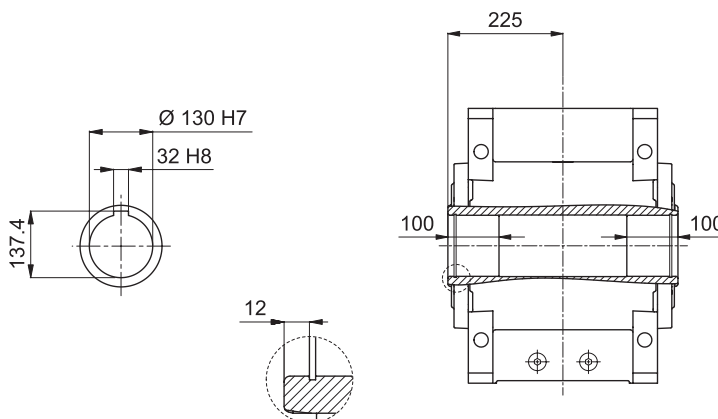


# HDO 110

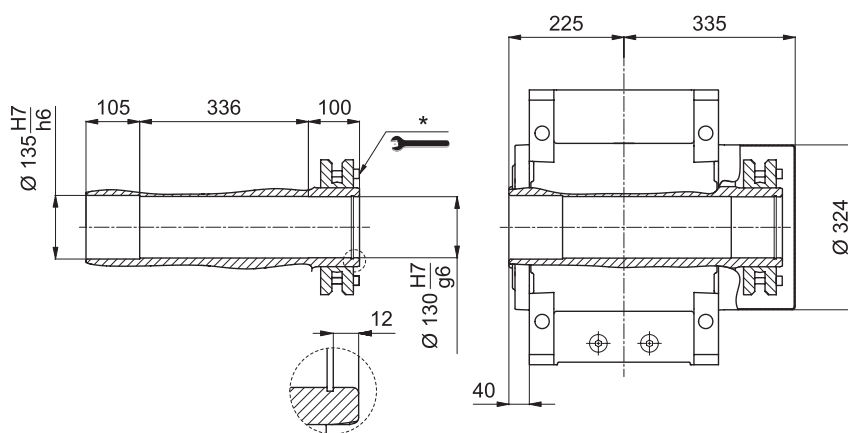
LP



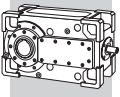
H



S



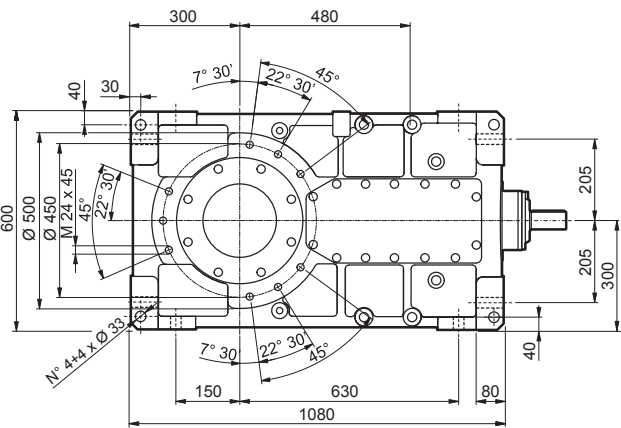
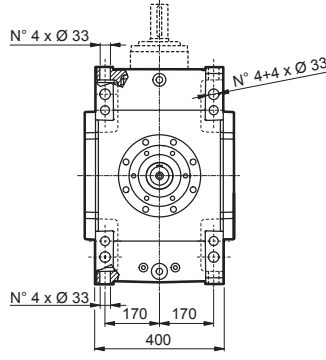
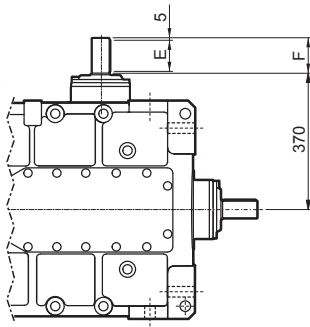
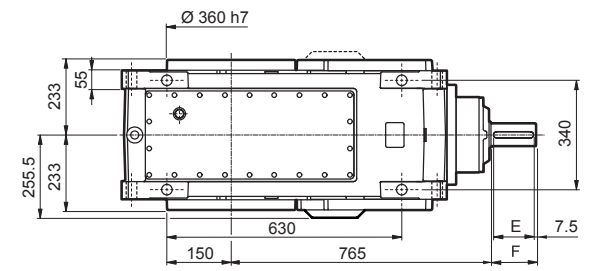
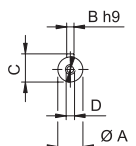
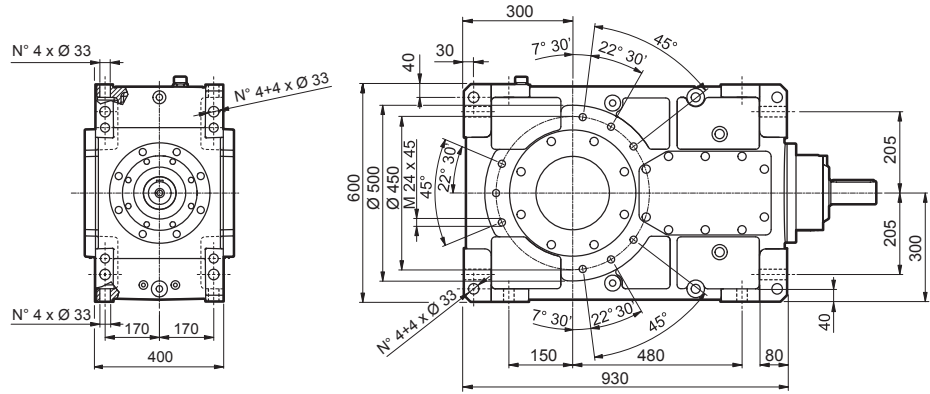
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



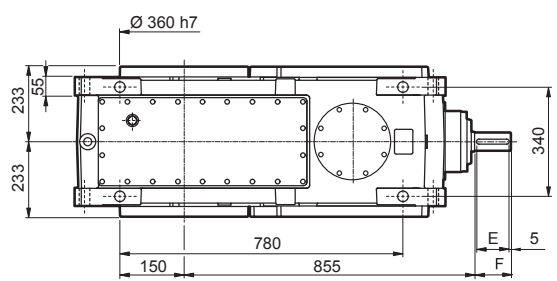
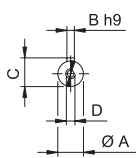
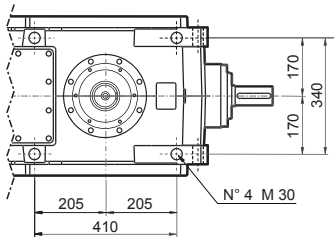
# HDO 120

HDO

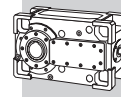
## HDO 120 2



## HDO 120 3 HDO 120 4

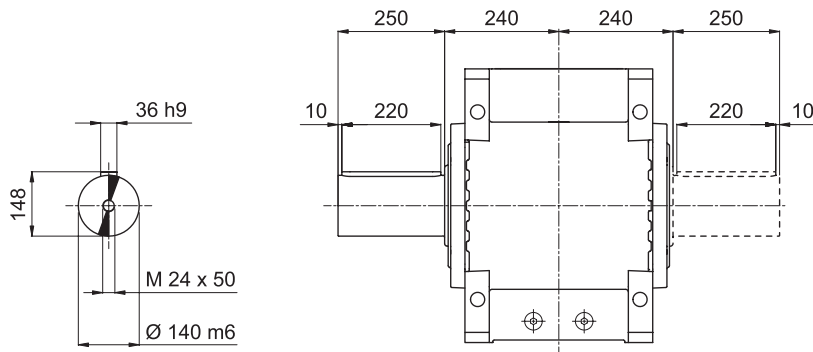


| VP        | i =             | A     | B  | C    | D      | E   | F   | LP   |
|-----------|-----------------|-------|----|------|--------|-----|-----|------|
| HDO 120 2 | 6.6 ... 15.5    | 70 m6 | 20 | 74.5 | M20x42 | 125 | 140 | 945  |
| HDO 120 3 | 17.3 ... 24.6   | 55 m6 | 16 | 59   | M20x42 | 100 | 110 | 1025 |
| HDO 120 3 | 28.3 ... 78.6   | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 1025 |
| HDO 120 4 | 87 ... 162.2    | 35 k6 | 10 | 38   | M12x28 | 70  | 80  | 990  |
| HDO 120 4 | 179.7 ... 400.6 | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 990  |

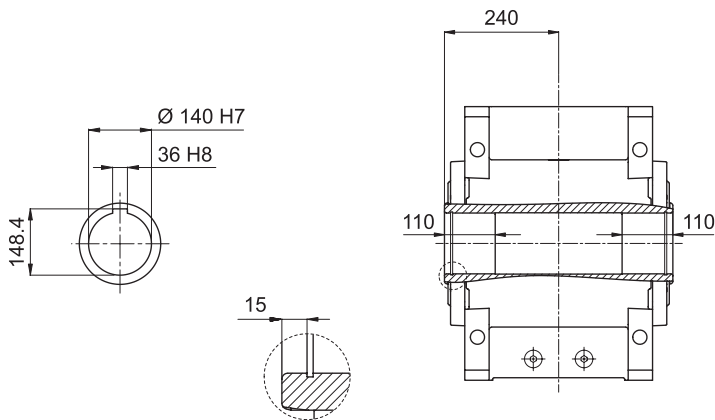


# HDO 120

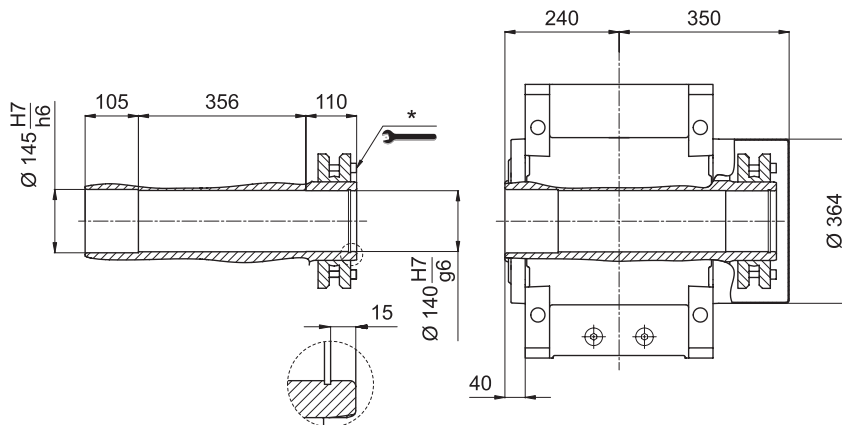
LP



H

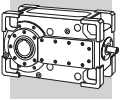


S



\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".

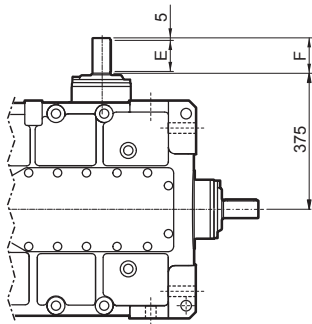
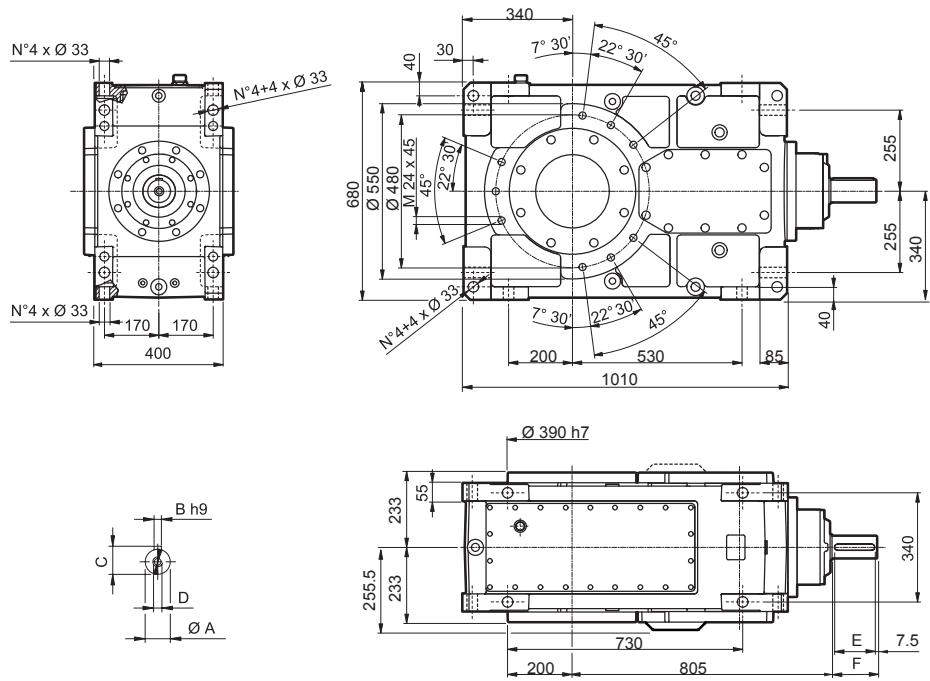
HDO



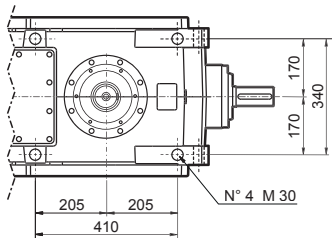
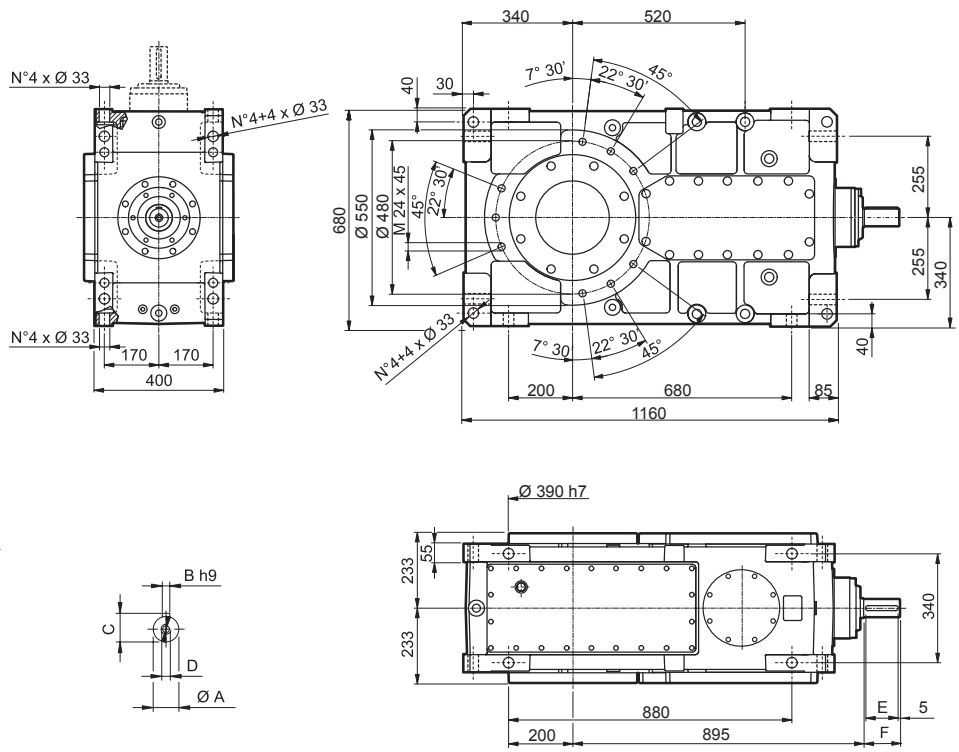
# HDO 125

HDO

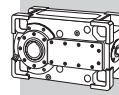
## HDO 125 2



## HDO 125 3 HDO 125 4

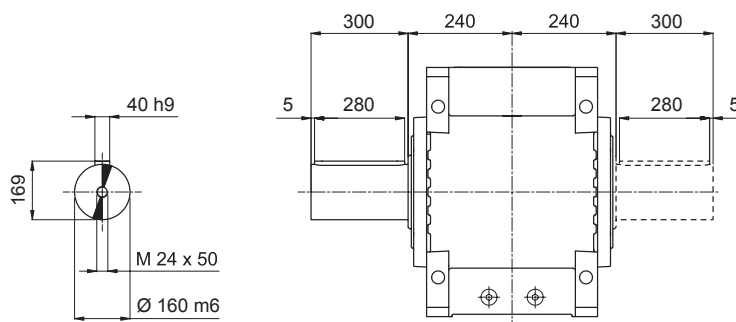


| VP        | i =           | A     | B  | C    | D      | E   | F   | LP   |
|-----------|---------------|-------|----|------|--------|-----|-----|------|
| HDO 125 2 | 7.4...17.0    | 70 m6 | 20 | 74.5 | M20x42 | 125 | 140 | 1130 |
| HDO 125 3 | 19.2...35.8   | 55 m6 | 16 | 59   | M20x43 | 100 | 110 | 1205 |
| HDO 125 3 | 38.8...85.9   | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 1205 |
| HDO 125 4 | 97.0...178.0  | 35 k6 | 10 | 38   | M12x28 | 70  | 80  | 1165 |
| HDO 125 4 | 200.3...438.0 | 32 k6 | 10 | 35   | M12x28 | 70  | 80  | 1165 |

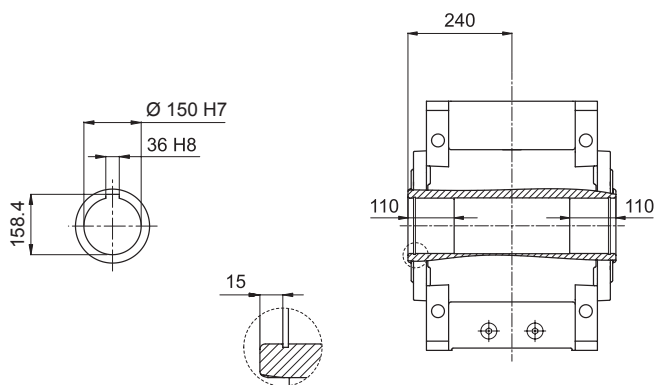


# HDO 125

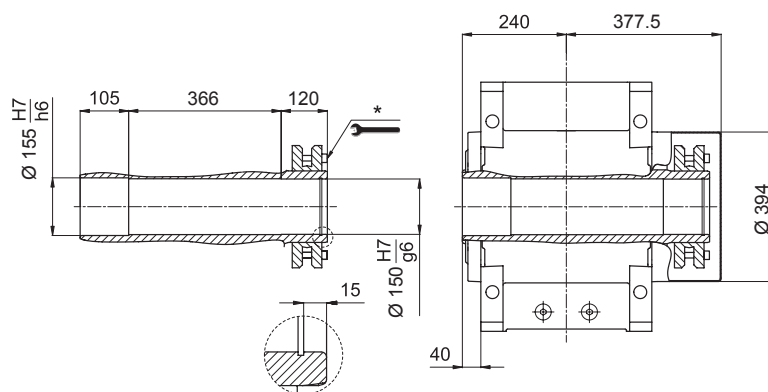
LP



H

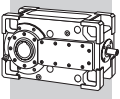


S



HDO

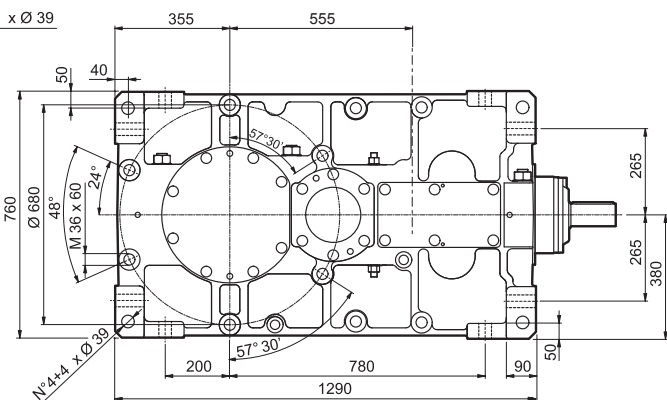
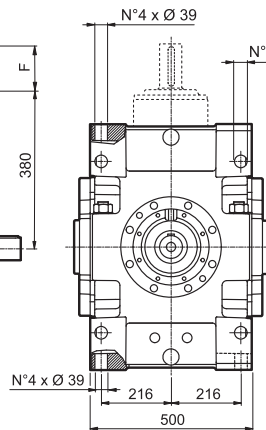
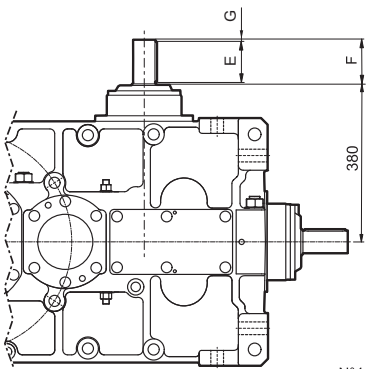
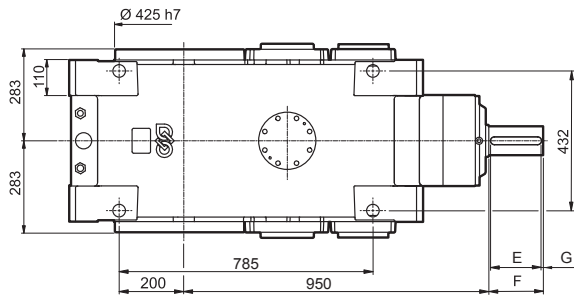
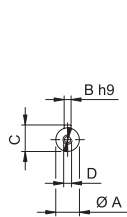
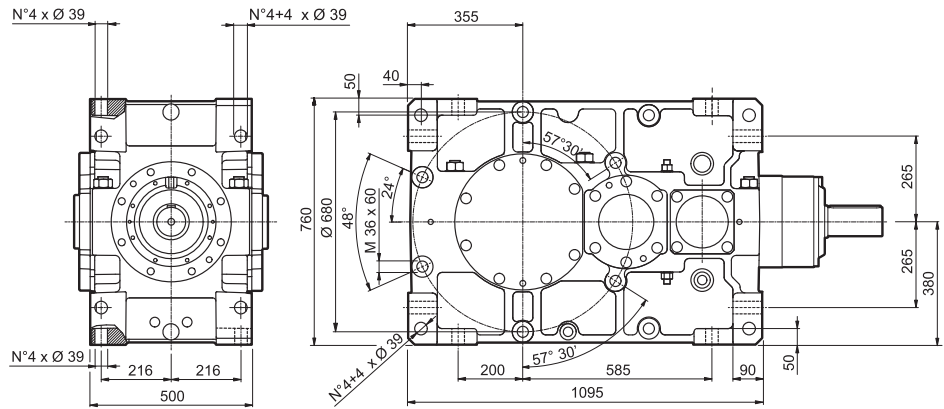
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



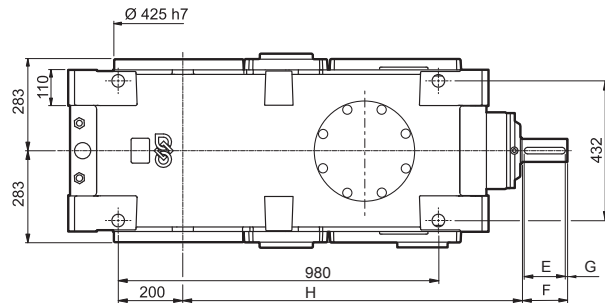
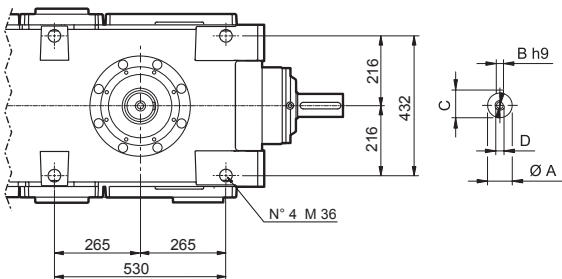
# HDO 130

HDO

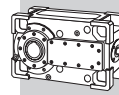
## HDO 130 2



## HDO 130 3 HDO 130 4

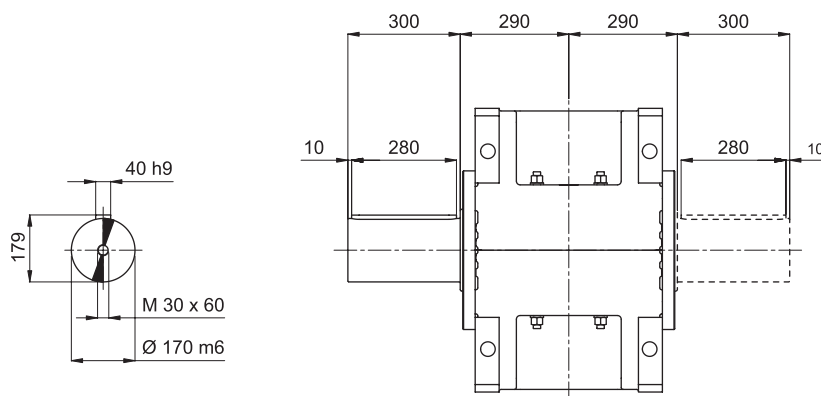


| VP        | i =            | A     | B  | C    | D      | E   | F   | G   | H    | LP   |
|-----------|----------------|-------|----|------|--------|-----|-----|-----|------|------|
| HDO 130 2 | 5.7 ... 13.6   | 90 m6 | 25 | 95   | M24x50 | 160 | 170 | 5   | —    | 1570 |
| HDO 130 3 | 15.2 ... 67.1  | 70 m6 | 20 | 74.5 | M20x42 | 125 | 140 | 7.5 | 1040 | 1730 |
| HDO 130 4 | 71.5 ... 335.6 | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 5   | 1105 | 1700 |

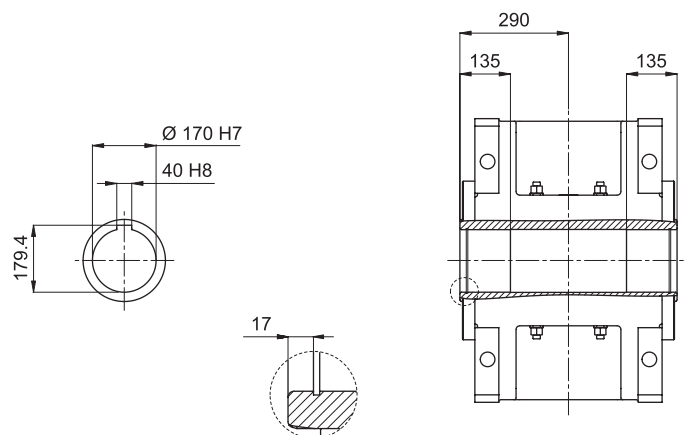


# HDO 130

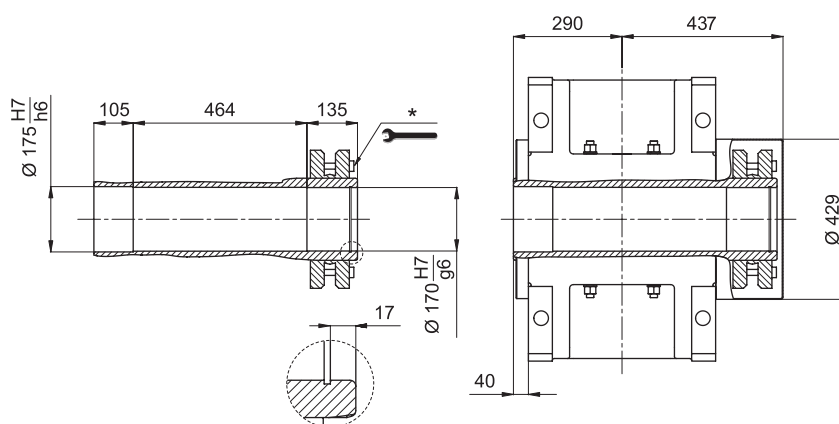
LP



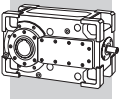
H



S



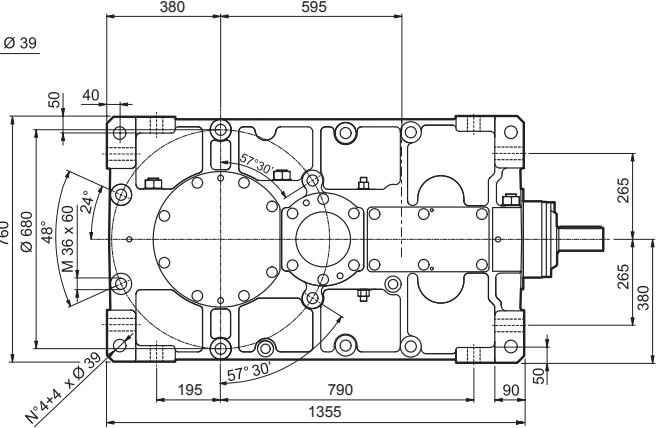
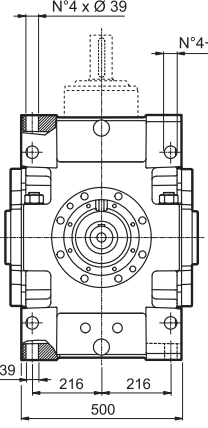
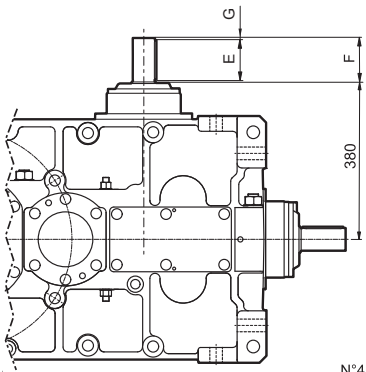
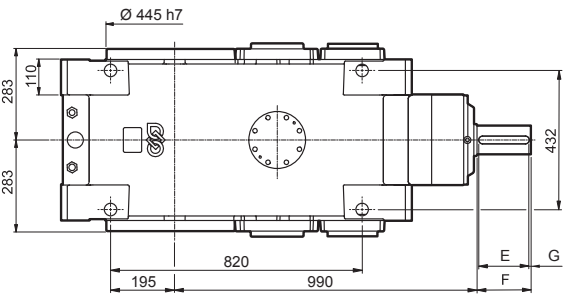
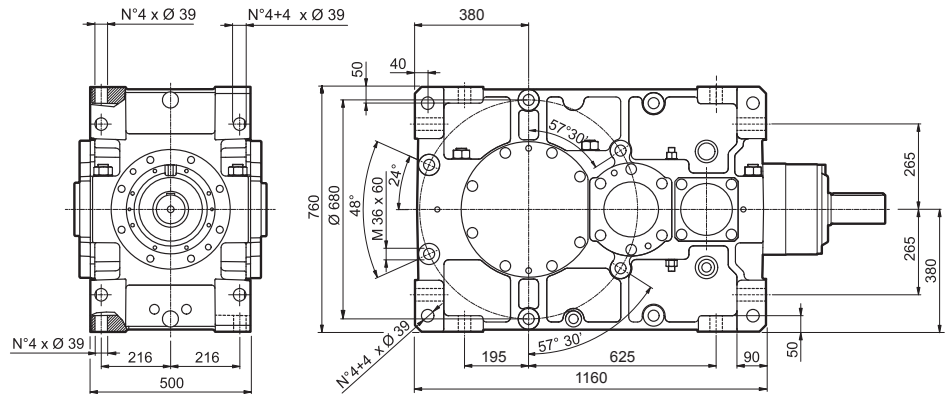
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



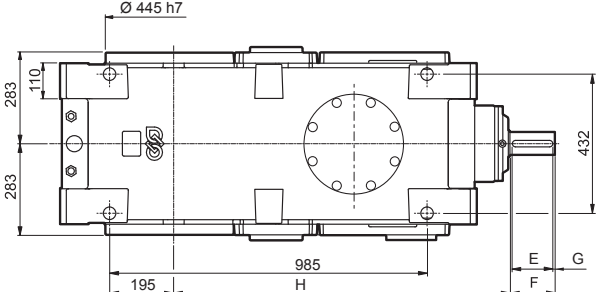
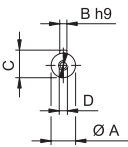
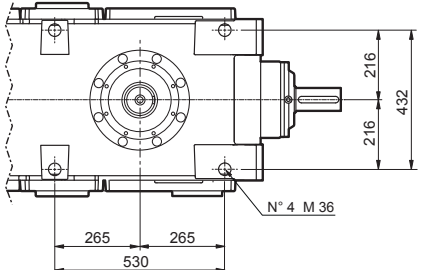
# HDO 140

HDO

## HDO 140 2

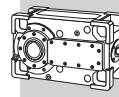


## HDO 140 3 HDO 140 4



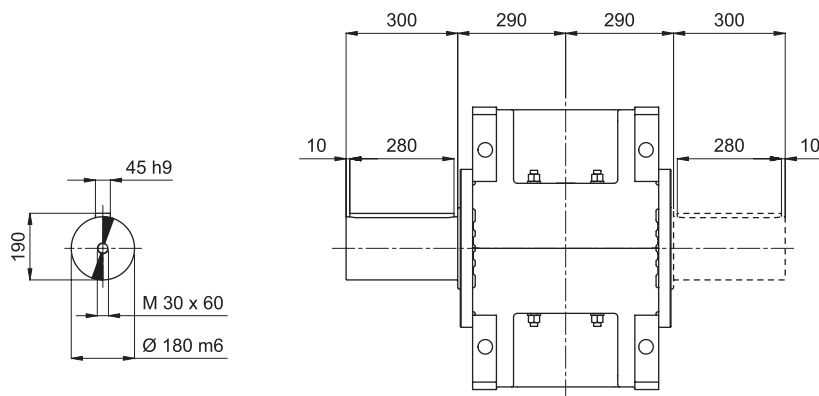
| VP        | i =            | A     | B  | C    | D      | E   | F   | G   | H    | LP   |
|-----------|----------------|-------|----|------|--------|-----|-----|-----|------|------|
| HDO 140 2 | 6.6 ... 15.7   | 90 m6 | 25 | 95   | M24x50 | 160 | 170 | 5   | —    | 1710 |
| HDO 140 3 | 17.7 ... 77.3  | 70 m6 | 20 | 74.5 | M20x42 | 125 | 140 | 7.5 | 1080 | 1960 |
| HDO 140 4 | 82.3 ... 386.6 | 45 k6 | 14 | 48.5 | M16x36 | 100 | 110 | 5   | 1145 | 1925 |



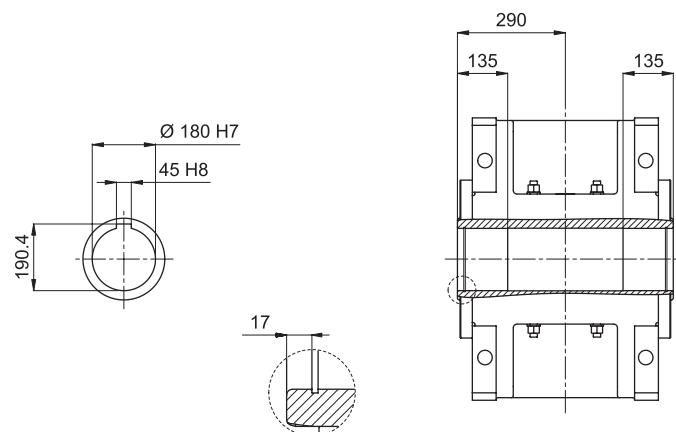


# HDO 140

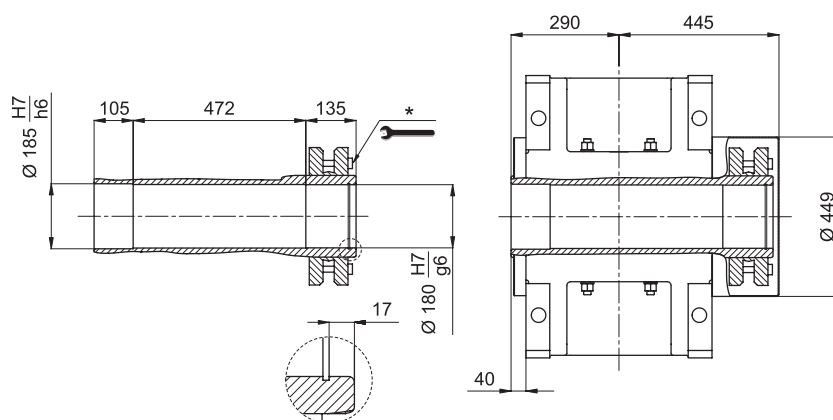
LP



H



S



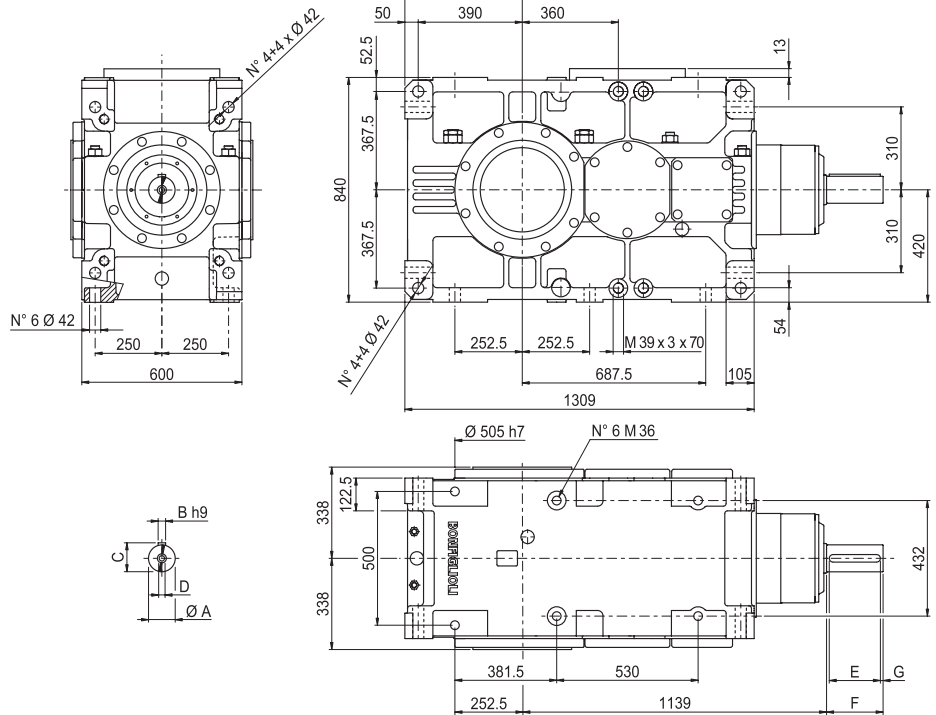
HDO

\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".

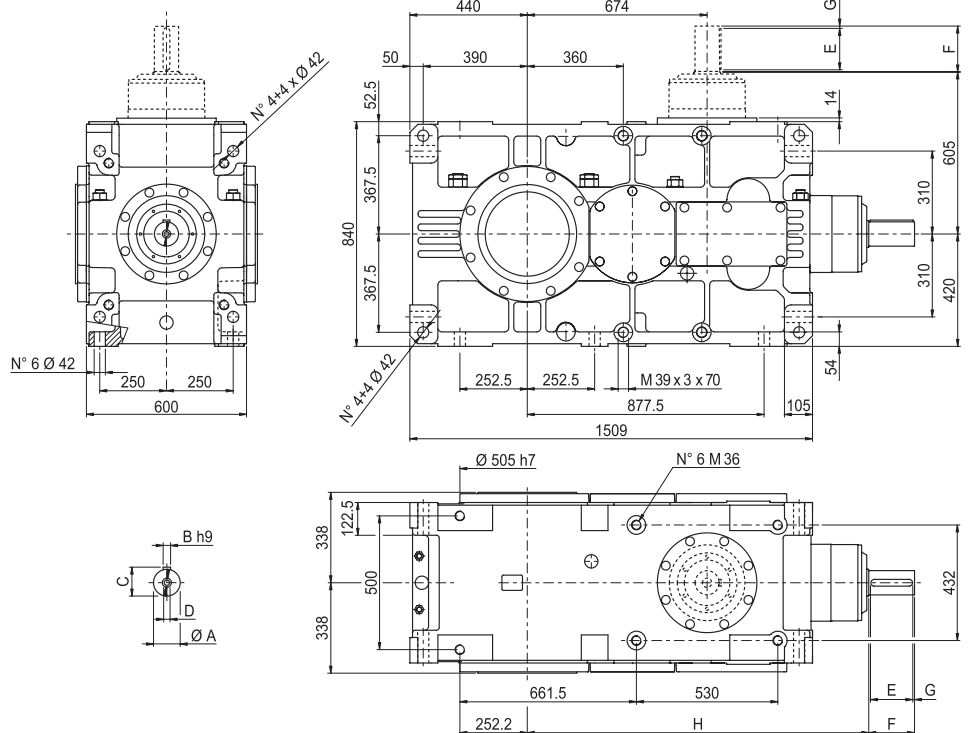


# HDO 150

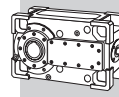
## HDO 150 2



## HDO 150 3 HDO 150 4

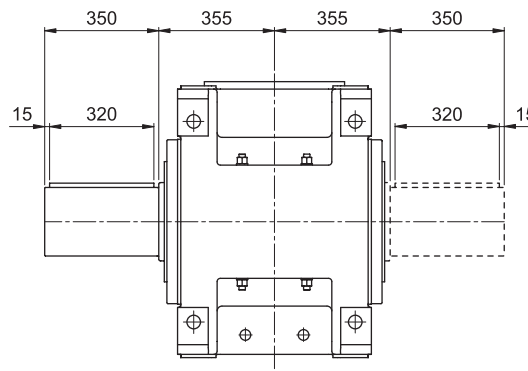
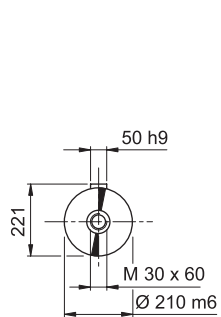


| VP        | i =             | A      | B  | C    | D      | E   | F   | G  | H    | LP   |
|-----------|-----------------|--------|----|------|--------|-----|-----|----|------|------|
| HDO 150 2 | 5.5 ... 7.0     | 110 m6 | 28 | 116  | M24x50 | 190 | 210 | 10 | —    | 2795 |
| HDO 150 2 | 8.1 ... 13.7    | 100 m6 | 28 | 106  | M24x50 | 190 | 210 | 10 | —    | 2795 |
| HDO 150 3 | 15.6 ... 60.8   | 90 m6  | 25 | 95   | M24x50 | 160 | 170 | 5  | 1279 | 2895 |
| HDO 150 4 | 66.9 ... 92.9   | 55 m6  | 16 | 59   | M20x42 | 90  | 110 | 5  | 1249 | 2875 |
| HDO 150 4 | 101.8 ... 238.8 | 45 k6  | 14 | 48.5 | M16x36 | 100 | 110 | 5  | 1249 | 2875 |

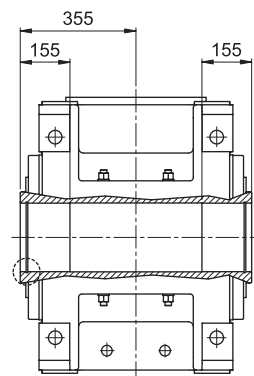
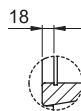
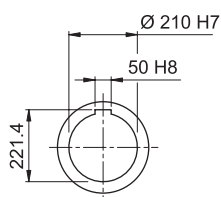


# HDO 150

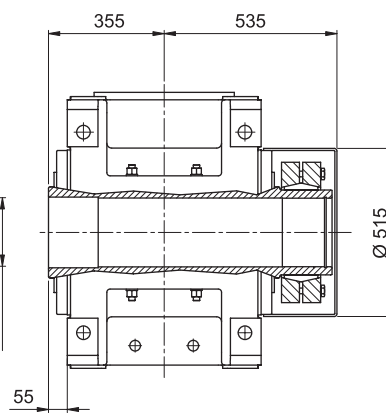
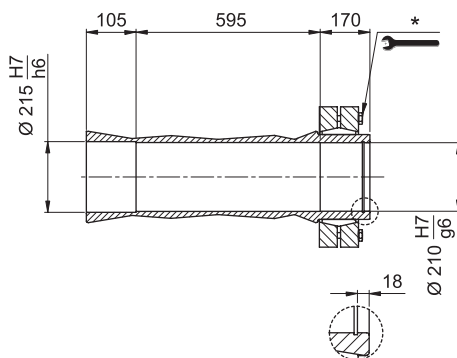
LP



H



S

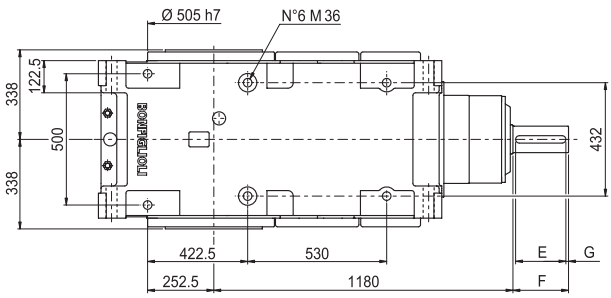
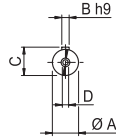
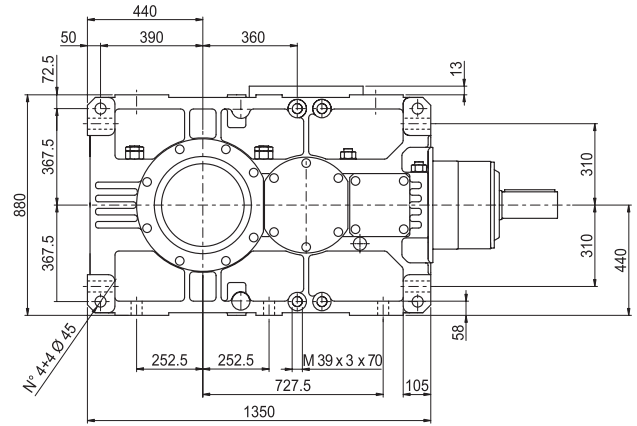
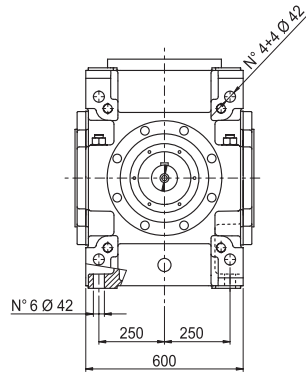


\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".

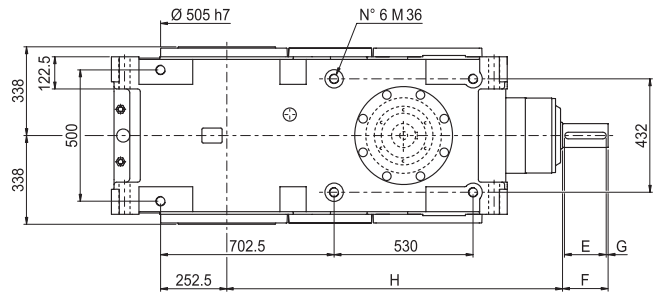
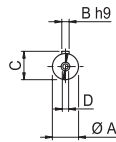
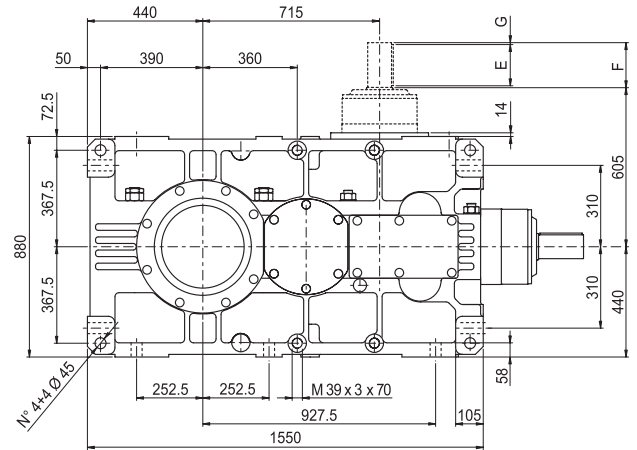
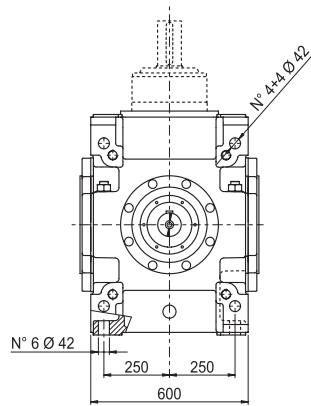


# HDO 160

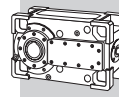
## HDO 160 2



## HDO 160 3 HDO 160 4

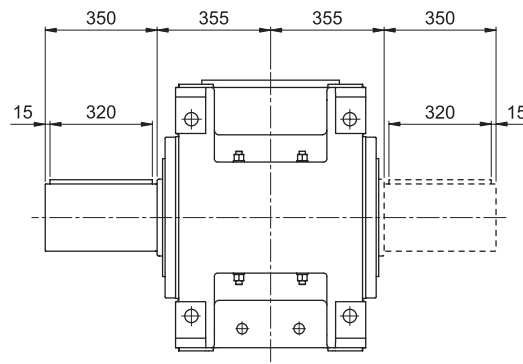
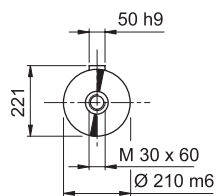


| VP        | i =             | A      | B  | C    | D      | E   | F   | G  | H    | LP   |
|-----------|-----------------|--------|----|------|--------|-----|-----|----|------|------|
| HDO 160 2 | 7.3 ... 7.9     | 110 m6 | 28 | 116  | M24x50 | 190 | 210 | 10 | —    | 3075 |
| HDO 160 2 | 8.9 ... 15.4    | 100 m6 | 28 | 106  | M24x50 | 190 | 210 | 10 | —    | 3075 |
| HDO 160 3 | 17.7 ... 68.6   | 90 m6  | 25 | 95   | M24x50 | 160 | 170 | 5  | 1320 | 3175 |
| HDO 160 4 | 75.9 ... 96.3   | 55 m6  | 16 | 59   | M20x42 | 90  | 110 | 10 | 1290 | 3160 |
| HDO 160 4 | 115.2 ... 269.7 | 45 k6  | 14 | 48.5 | M16x36 | 100 | 110 | 5  | 1290 | 3160 |

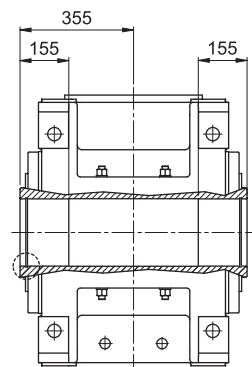
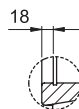
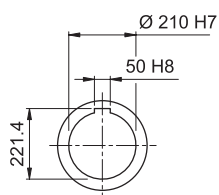


# HDO 160

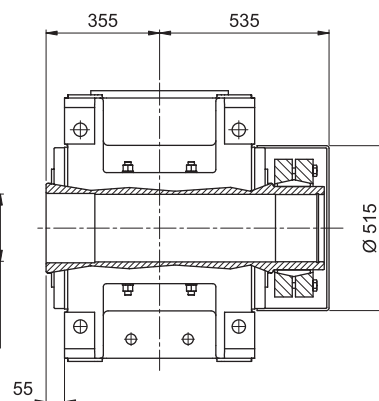
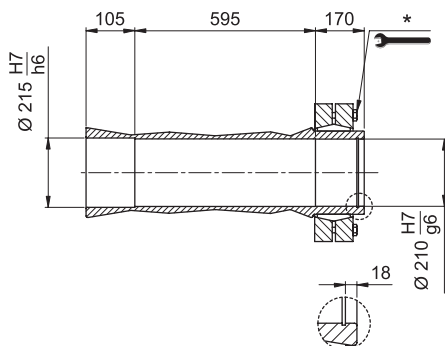
LP



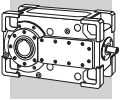
H



S

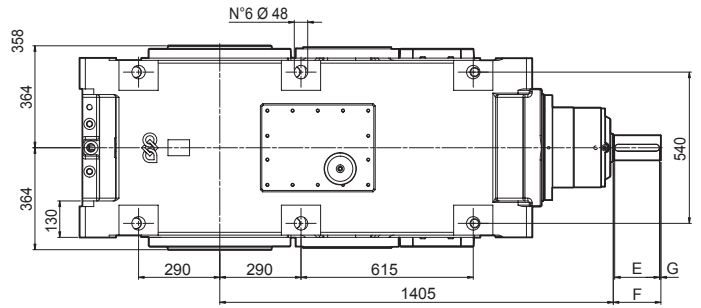
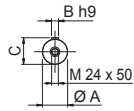
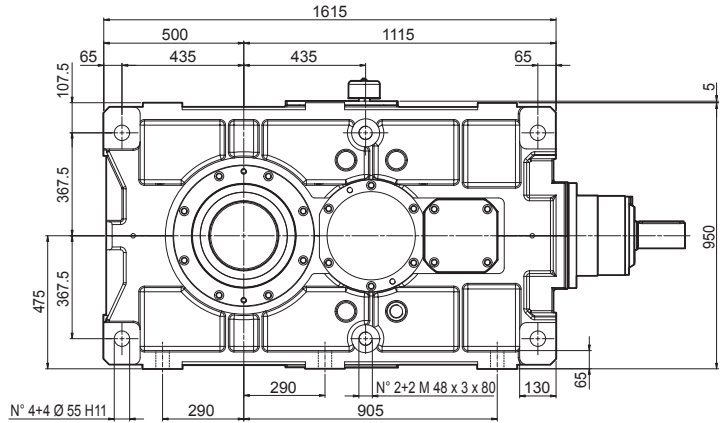
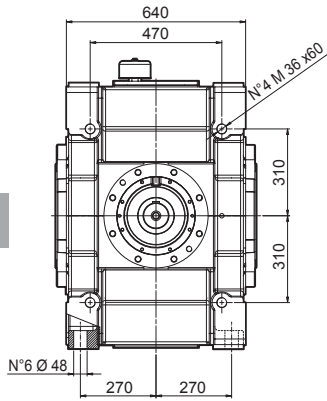


\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



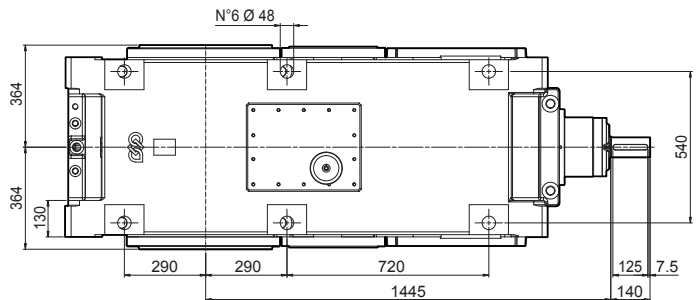
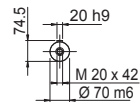
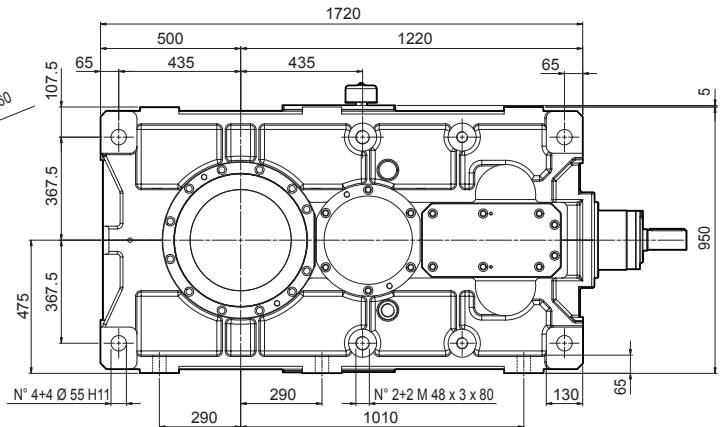
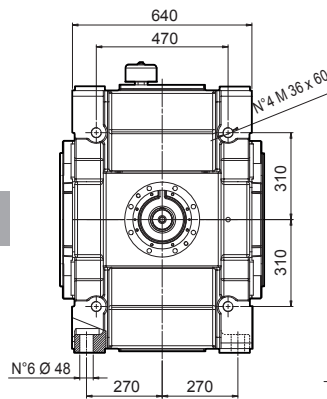
# HDO 170

## HDO 170 3

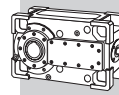


| VP        | i =           | A      | B  | C   | E   | F   | G  | Kg LP |
|-----------|---------------|--------|----|-----|-----|-----|----|-------|
| HDO 170 3 | 15.9 ... 21.7 | 100 m6 | 28 | 106 | 190 | 210 | 10 | 3675  |
| HDO 170 3 | 26.2 ... 59.9 | 90 m6  | 25 | 95  | 160 | 170 | 5  | 3675  |

## HDO 170 4

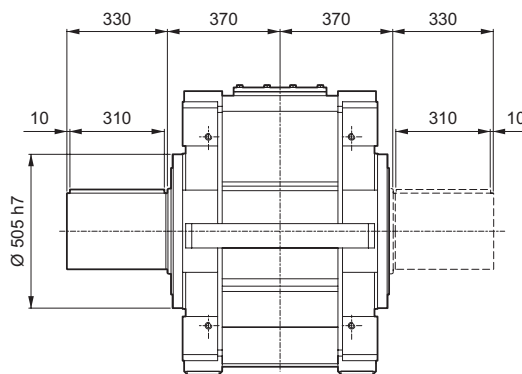
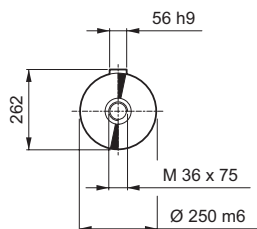


| VP        | Kg LP |
|-----------|-------|
| HDO 170 4 | 3780  |

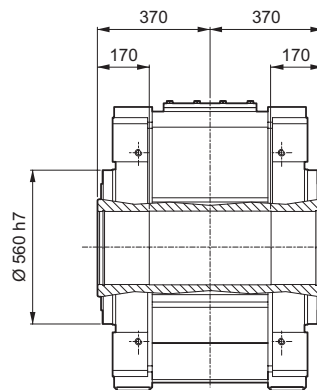
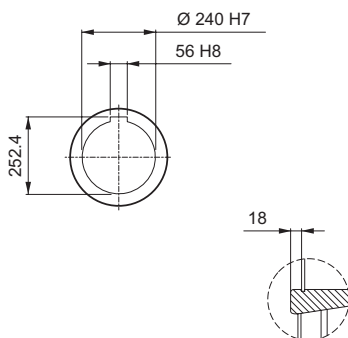


# HDO 170

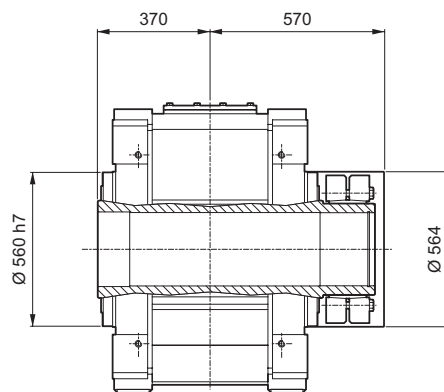
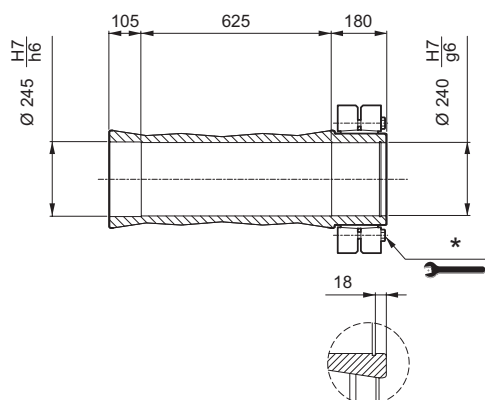
LP



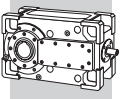
H



S



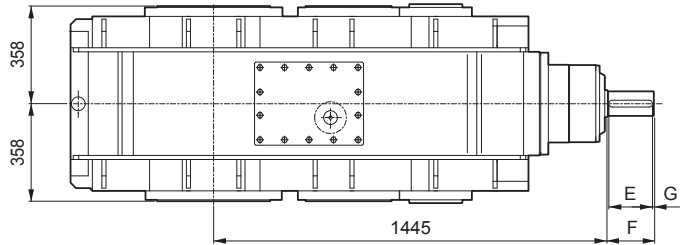
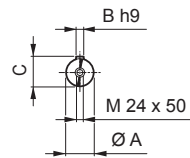
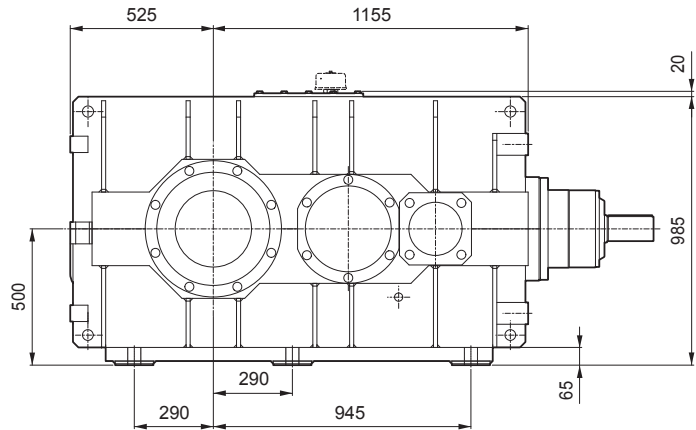
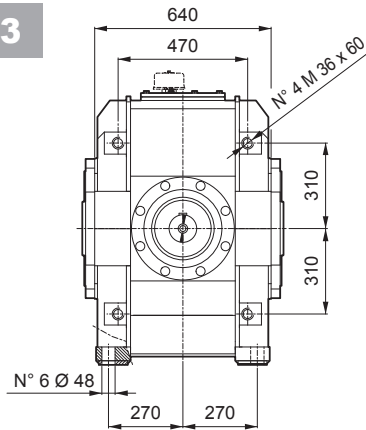
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".



# HDO 180

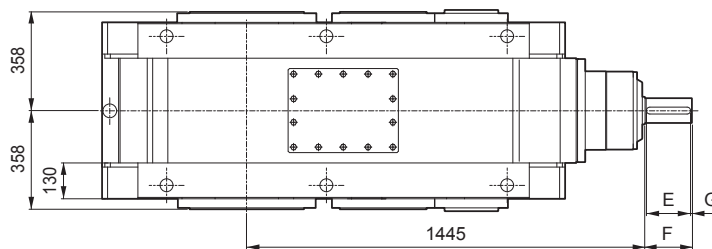
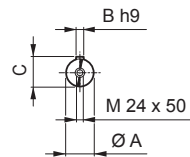
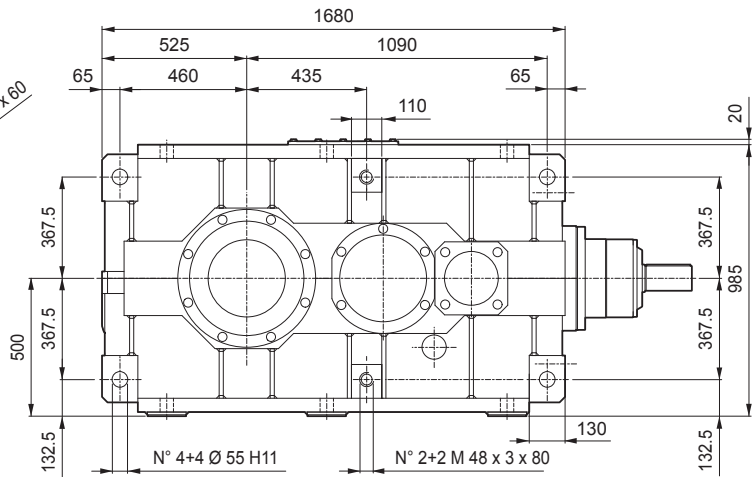
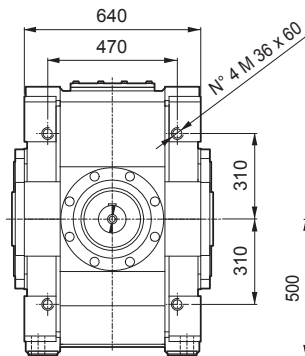
## HDO 180 3

**B3**



## HDO 180 3

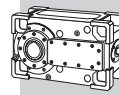
**V5**



| VP        | i =           | A      | B  | C   | E   | F   | G  | LP   |
|-----------|---------------|--------|----|-----|-----|-----|----|------|
| HDO 180 3 | 17.7 ... 27.9 | 100 m6 | 28 | 106 | 190 | 210 | 10 | 3820 |
| HDO 180 3 | 31.4 ... 66.2 | 90 m6  | 25 | 95  | 160 | 170 | 5  | 3820 |

HDO

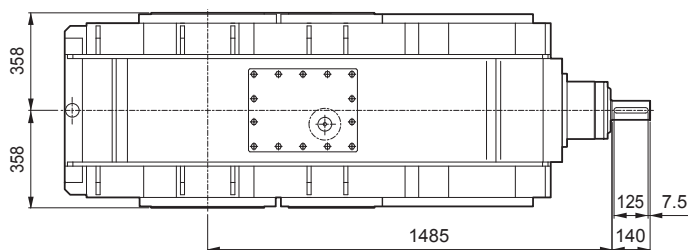
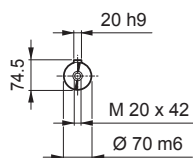
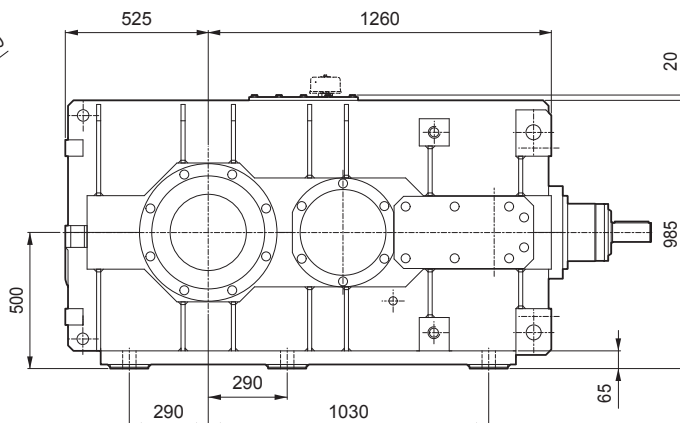
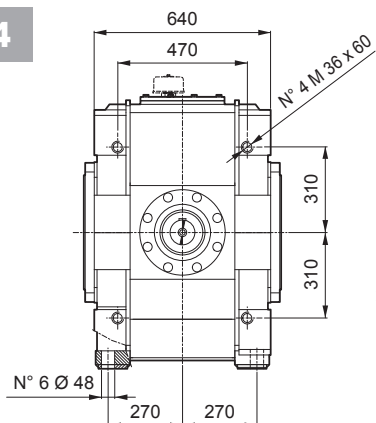




# HDO 180

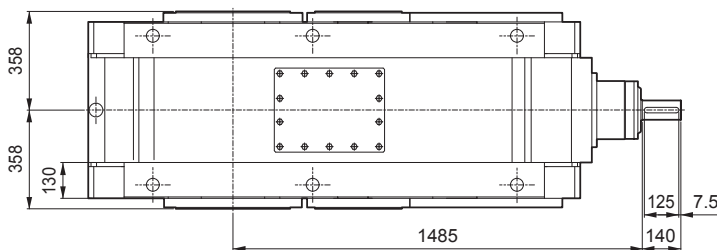
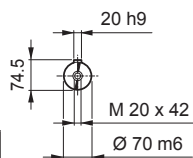
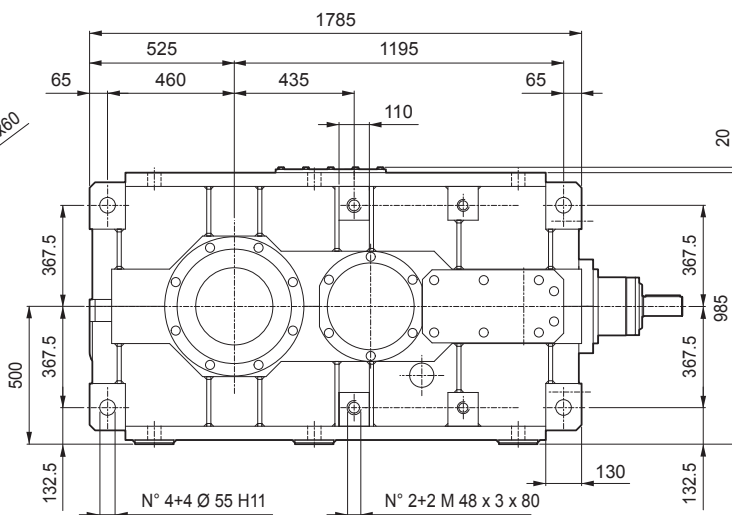
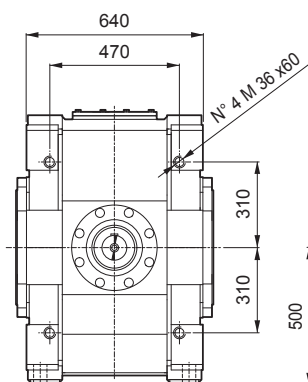
## HDO 180 4

**B3**



## HDO 180 4

**V5**

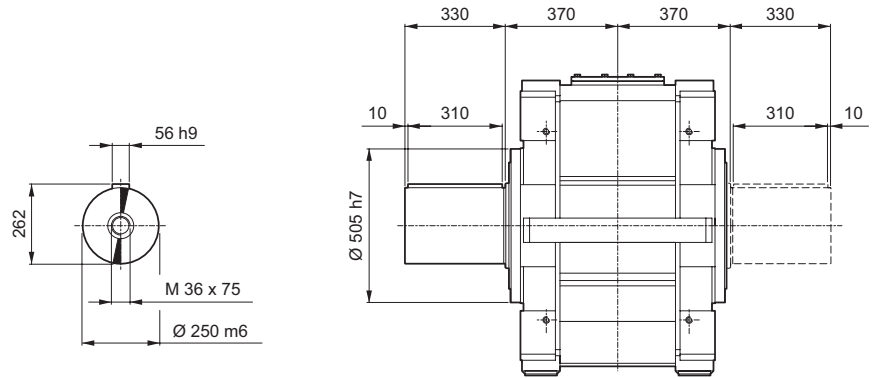


|                  |             |
|------------------|-------------|
| <b>VP</b>        | <b>LP</b>   |
| <b>HDO 180 4</b> | <b>3875</b> |

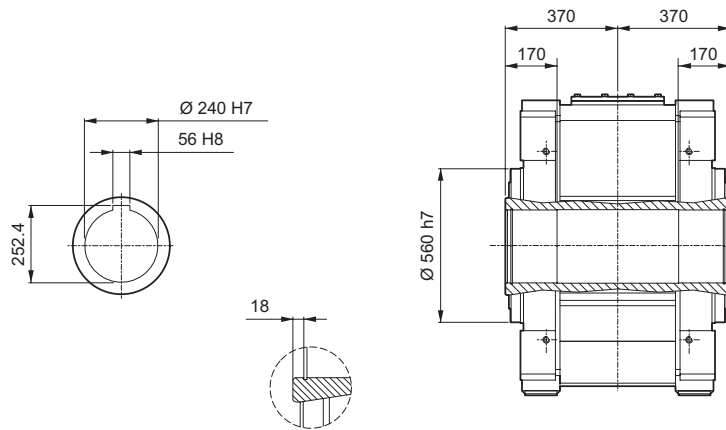


# HDO 180

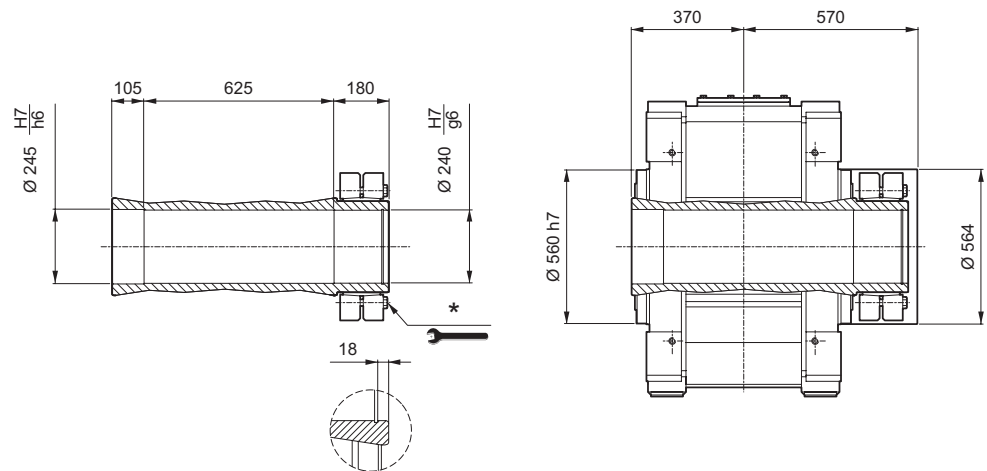
LP



H



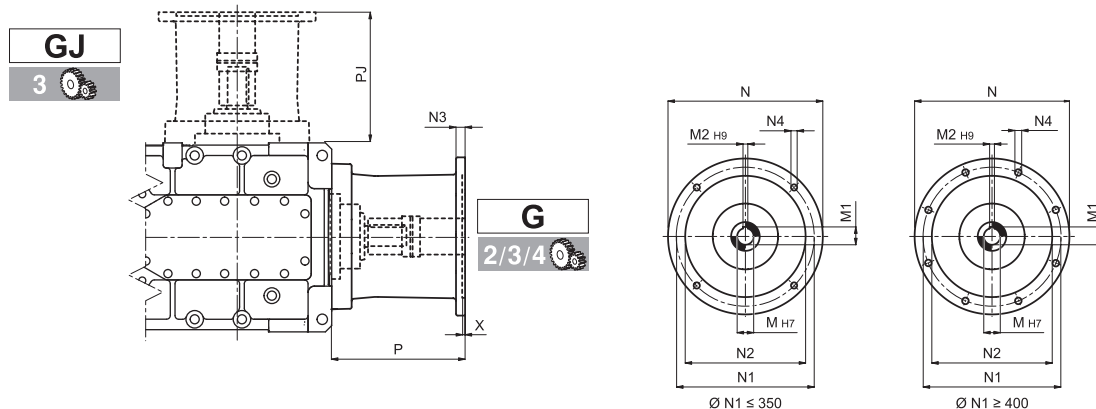
S



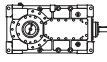
\* For correct use, refer to the "OPERATION AND MAINTENANCE MANUAL".

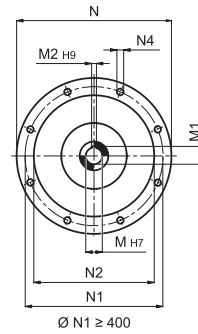
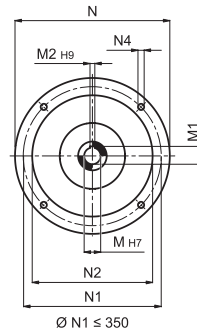
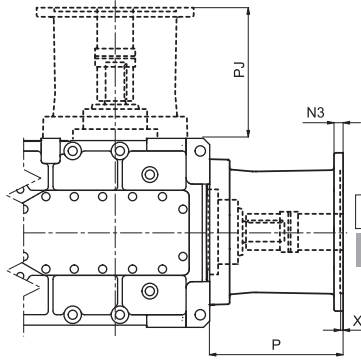


### 31.1 MOTOR MOUNTING WITH BELL HOUSING AND FLEXIBLE COUPLING

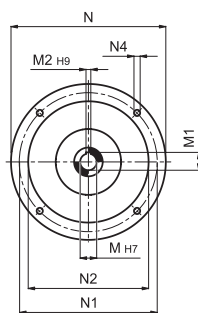
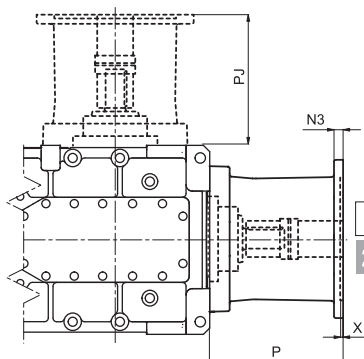


**HDO**

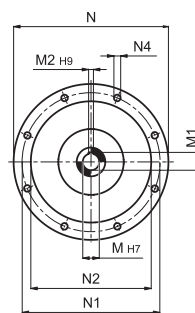
|  | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X  | P     | PJ    |
|--|----|------|----|-----|-----|-----|----|--------|----|-------|-------|
|  HDO 71 3_132 | 38 | 41.3 | 10 | 300 | 265 | 230 | 16 | M12x20 | 5  | 246.5 | —     |
| HDO 71 3_160   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 276.5 | —     |
| HDO 71 3_180   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 276.5 | —     |
| HDO 71 3_200   | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 301.5 | —     |
| HDO 71 3_225   | 60 | 64.4 | 18 | 450 | 400 | 350 | 25 | 18     | 7  | 309.5 | —     |
| HDO 81 3_160   | 42 | 45.3 | 12 | 350 | 300 | 250 | 48 | 18     | 7  | 320   | —     |
| HDO 81 3_180   | 48 | 51.8 | 14 | 350 | 300 | 250 | 48 | 18     | 7  | 320   | —     |
| HDO 91 4_112   | 28 | 31.3 | 8  | 250 | 215 | 180 | 15 | 14     | 5  | 260   | —     |
| HDO 91 4_132   | 38 | 41.3 | 10 | 300 | 265 | 230 | —  | M12x20 | 6  | 280   | —     |
| HDO 91 3/4_160   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 346   | —     |
| HDO 91 3/4_180   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 346   | —     |
| HDO 913/4_200  | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 371   | —     |
| HDO 91 3/4_225   | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 378   | —     |
| HDO 91 3_250   | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 408   | —     |
| HDO 91 3_280   | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 408   | —     |
| HDO 95 4_112   | 28 | 31.3 | 8  | 250 | 215 | 180 | 15 | 14     | 5  | 260   | —     |
| HDO 95 4_132   | 38 | 41.3 | 10 | 300 | 265 | 230 | —  | M12x20 | 6  | 280   | —     |
| HDO 95 3/4_160   | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 346   | —     |
| HDO 95 3/4_180   | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 346   | —     |
| HDO 95 3/4_200   | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 371   | —     |
| HDO 95 3/4_225   | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 378   | —     |
| HDO 95 3_250   | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 408   | —     |
| HDO 95 3_280   | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 408   | —     |
| HDO 100 2_250  | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 420.5 | —     |
| HDO 100 2_280  | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 420.5 | —     |
| HDO 100 2_315  | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 457   | —     |
| HDO 100 3_160  | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 351   | 351   |
| HDO 100 3_180  | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 351   | 351   |
| HDO 100 3_200  | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 376   | 376   |
| HDO 100 3_225  | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 383   | 383   |
| HDO 100 3_250  | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 413   | 413   |
| HDO 100 3_280  | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 413   | 413   |
| HDO 100 3_315  | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 449.5 | 449.5 |



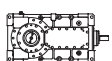

|               |  | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X  | P     | PJ    |
|---------------|--|----|------|----|-----|-----|-----|----|--------|----|-------|-------|
|               |  |    |      |    |     |     |     |    |        |    |       |       |
| HDO 100 4 112 |  | 28 | 31.3 | 8  | 250 | 215 | 180 | 15 | 14     | 5  | 265   | —     |
| HDO 100 4 132 |  | 38 | 41.3 | 10 | 300 | 265 | 230 | —  | M12x20 | 6  | 285   | —     |
| HDO 100 4 160 |  | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 351   | —     |
| HDO 100 4 180 |  | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 351   | —     |
| HDO 100 4 200 |  | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 376   | —     |
| HDO 100 4 225 |  | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 383   | —     |
| HDO 110 2 280 |  | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 420.5 | —     |
| HDO 110 2 315 |  | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 457   | —     |
| HDO 110 3 160 |  | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 351   | 351   |
| HDO 110 3 180 |  | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 351   | 351   |
| HDO 110 3 200 |  | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 376   | 376   |
| HDO 110 3 225 |  | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 383   | 383   |
| HDO 110 3 250 |  | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 413   | 413   |
| HDO 110 3 280 |  | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 413   | 413   |
| HDO 110 3 315 |  | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 449.5 | 449.5 |
| HDO 110 4 112 |  | 28 | 31.3 | 8  | 250 | 215 | 180 | 15 | 14     | 5  | 265   | —     |
| HDO 110 4 132 |  | 38 | 41.3 | 10 | 300 | 265 | 230 | —  | M12x20 | 6  | 285   | —     |
| HDO 110 4 160 |  | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 351   | —     |
| HDO 110 4 180 |  | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 351   | —     |
| HDO 110 4 200 |  | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 376   | —     |
| HDO 110 4 225 |  | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 383   | —     |
| HDO 120 2 315 |  | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 482   | —     |
| HDO 120 3 200 |  | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 346   | —     |
| HDO 120 3 225 |  | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 353   | 353   |
| HDO 120 3 250 |  | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 383   | 383   |
| HDO 120 3 280 |  | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 383   | 383   |
| HDO 120 3 315 |  | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 419.5 | 419.5 |
| HDO 120 4 132 |  | 38 | 41.3 | 10 | 300 | 265 | 230 | —  | M12x40 | 6  | 255   | —     |
| HDO 120 4 160 |  | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 321   | —     |
| HDO 120 4 180 |  | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 321   | —     |
| HDO 120 4 200 |  | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 346   | —     |
| HDO 120 4 225 |  | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 353   | —     |
| HDO 125 2 315 |  | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 482   | —     |
| HDO 125 3 200 |  | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 346   | 306   |
| HDO 125 3 225 |  | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 353   | 313   |
| HDO 125 3 250 |  | 65 | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 383   | 343   |
| HDO 125 3 280 |  | 75 | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 383   | 343   |
| HDO 125 3 315 |  | 80 | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 419.5 | 375.5 |
| HDO 125 4 132 |  | 38 | 41.3 | 10 | 300 | 265 | 230 | —  | M12x40 | 6  | 255   | —     |
| HDO 125 4 160 |  | 42 | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 321   | —     |
| HDO 125 4 180 |  | 48 | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 321   | —     |
| HDO 125 4 200 |  | 55 | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 346   | —     |
| HDO 125 4 225 |  | 60 | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 353   | —     |



Ø N1 ≤ 350



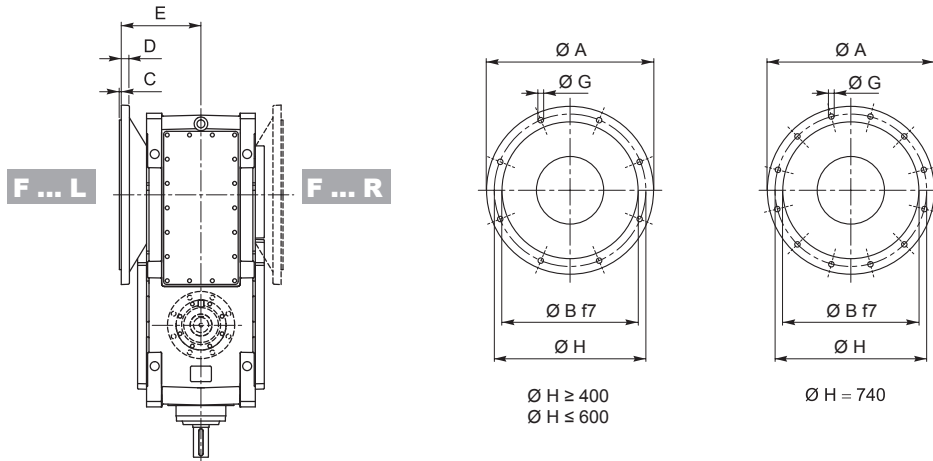
Ø N1 ≥ 400


|   | M  | M1   | M2 | N   | N1  | N2  | N3 | N4     | X  | P     | PJ    |
|---|--|------|----|-----|-----|-----|----|--------|----|-------|-------|
|  HDO 130 2 315 | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 590   | —     |
| HDO 130 3 250   | 65   | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 415.5 | 413   |
| HDO 130 3 280   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 415.5 | 413   |
| HDO 130 3 315   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 452   | 449.5 |
| HDO 130 4 160   | 42   | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 416   | —     |
| HDO 130 4 180   | 48   | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 416   | —     |
| HDO 130 4 200   | 55   | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 441   | —     |
| HDO 130 4 225   | 60   | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 448   | —     |
| HDO 130 4 250   | 65   | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 478   | —     |
| HDO 130 4 280   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 478   | —     |
| HDO 140 2 315   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 590   | —     |
| HDO 140 3 250   | 65   | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 415.5 | 413   |
| HDO 140 3 280   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 415.5 | 413   |
| HDO 140 3 315   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 452   | 449.5 |
| HDO 140 4 160   | 42   | 45.3 | 12 | 350 | 300 | 250 | 23 | 18     | 6  | 416   | —     |
| HDO 140 4 180   | 48   | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 416   | —     |
| HDO 140 4 200   | 55   | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 441   | —     |
| HDO 140 4 225   | 60   | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 448   | —     |
| HDO 140 4 250   | 65   | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 478   | —     |
| HDO 140 4 280   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 478   | —     |
| HDO 150 3 280   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 553.5 | 528.5 |
| HDO 150 3 315   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 590   | 565   |
| HDO 150 4 180   | 48   | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 426   | —     |
| HDO 150 4 200   | 55   | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 451   | —     |
| HDO 150 4 225   | 60   | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 458   | —     |
| HDO 150 4 250   | 65   | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 488   | —     |
| HDO 150 4 280   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 488   | —     |
| HDO 150 4 315   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 524.5 | —     |
| HDO 160 3 280   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 553.5 | 508.5 |
| HDO 160 3 315   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 590   | 545   |
| HDO 160 4 180   | 48   | 51.8 | 14 | 350 | 300 | 250 | 23 | 18     | 6  | 426   | —     |
| HDO 160 4 200   | 55   | 59.3 | 16 | 400 | 350 | 300 | —  | M16x23 | 7  | 451   | —     |
| HDO 160 4 225   | 60   | 64.4 | 18 | 450 | 400 | 350 | 26 | 18     | 7  | 458   | —     |
| HDO 160 4 250   | 65   | 69.4 | 18 | 550 | 500 | 450 | 30 | 18     | 6  | 488   | —     |
| HDO 160 4 280   | 75   | 79.9 | 20 | 550 | 500 | 450 | 30 | 18     | 6  | 488   | —     |
| HDO 160 4 315   | 80   | 85.4 | 22 | 660 | 600 | 550 | 22 | 22     | 10 | 524.5 | —     |
| HDO 170   |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |      |    |     |     |     |    |        |    |       |       |
| HDO 180   |  |      |    |     |     |     |    |        |    |       |       |

**HDO**



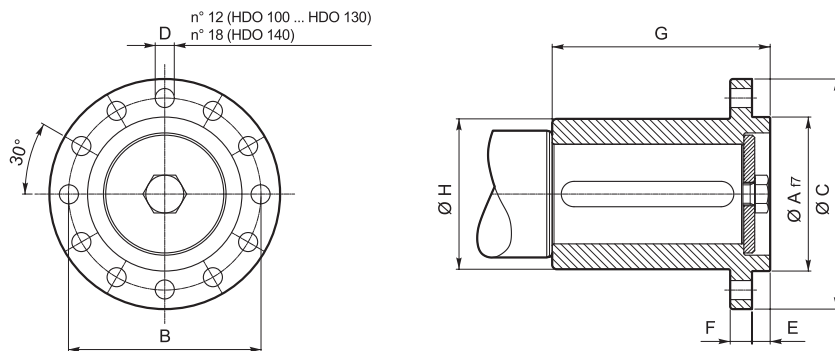
### 31.2 MOUNTING FLANGE




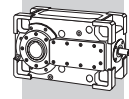
|         |      | A  | B   | C | D  | E   | G  | H   |
|---------|------|--|-----|---|----|-----|----|-----|
| HDO 71  | F450 | 450  | 350 | 5 | 22 | 210 | 18 | 400 |
|         | F550 | 550  | 450 | 5 | 24 | 210 | 18 | 500 |
| HDO 81  | F450 | 450  | 350 | 5 | 22 | 240 | 18 | 400 |
|         | F550 | 550  | 450 | 5 | 24 | 240 | 18 | 500 |
| HDO 91  | F550 | 550  | 450 | 5 | 24 | 260 | 18 | 500 |
| HDO 91  | F550 | 550  | 450 | 5 | 24 | 315 | 18 | 500 |
| HDO 100 | F660 | 660  | 550 | 7 | 30 | 335 | 22 | 600 |
| HDO 110 | F660 | 660  | 550 | 7 | 30 | 335 | 22 | 600 |
| HDO 120 | F660 | 660  | 550 | 7 | 30 | 355 | 26 | 600 |
| HDO 125 | F730 | 730  | 580 | 7 | 35 | 360 | 26 | 660 |
| HDO 130 | F800 | 800  | 680 | 7 | 40 | 460 | 26 | 740 |
| HDO 140 | F800 | 800  | 680 | 7 | 40 | 460 | 26 | 740 |
| HDO 150 |      |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |     |   |    |     |    |     |
| HDO 160 |      |  |     |   |    |     |    |     |
| HDO 170 |      |  |     |   |    |     |    |     |
| HDO 180 |      |  |     |   |    |     |    |     |
| HDO 180 |      |  |     |   |    |     |    |     |

### 31.3 MANIFOLD FLANGE

Available for shaft arrangement: L, LJ, LD, R, RJ and RD, all featuring a single output shaft extension.

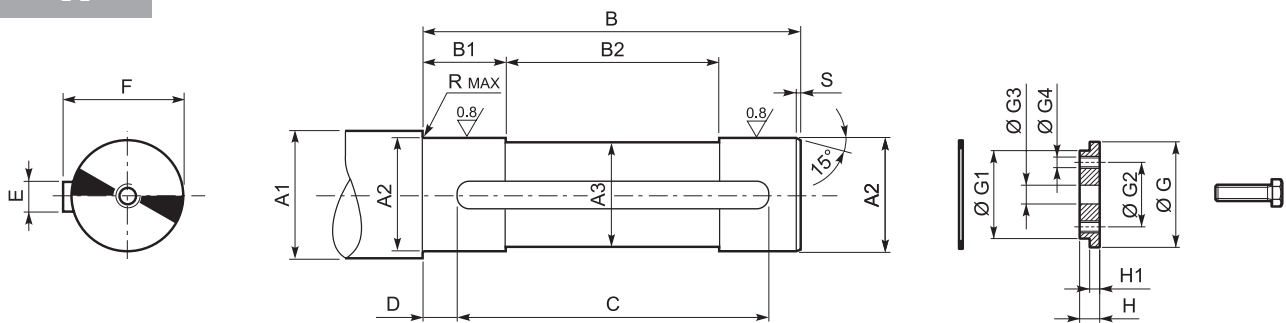




|            | A   | B  | C   | D  | E  | F  | G   | H   |
|------------|-----|--|-----|----|----|----|-----|-----|
| HDO 71 FM  | 125 | 175  | 208 | 19 | 14 | 21 | 195 | 135 |
| HDO 81 FM  | 170 | 212  | 254 | 21 | 20 | 24 | 240 | 166 |
| HDO 91 FM  | 170 | 212  | 254 | 21 | 20 | 24 | 240 | 166 |
| HDO 95 FM  | 200 | 260  | 309 | 25 | 19 | 31 | 244 | 200 |
| HDO 100 FM | 200 | 260  | 309 | 25 | 19 | 31 | 244 | 200 |
| HDO 110 FM | 200 | 260  | 309 | 25 | 19 | 31 | 289 | 200 |
| HDO 120 FM | 200 | 260  | 309 | 25 | 19 | 31 | 289 | 200 |
| HDO 125 FM | 220 | 320  | 384 | 32 | 19 | 31 | 344 | 240 |
| HDO 130 FM | 220 | 320  | 384 | 32 | 19 | 31 | 344 | 250 |
| HDO 140 FM | 250 | 380  | 450 | 32 | 19 | 40 | 344 | 310 |
| HDO 150    |     |  <b>BONFIGLIOLI TECHNICAL SERVICE</b> |     |    |    |    |     |     |
| HDO 160    |     |  |     |    |    |    |     |     |
| HDO 170    |     |  |     |    |    |    |     |     |
| HDO 180    |     |  |     |    |    |    |     |     |
| HDO 180    |     |  |     |    |    |    |     |     |







### 31.4 CUSTOMER'S SHAFT

## H

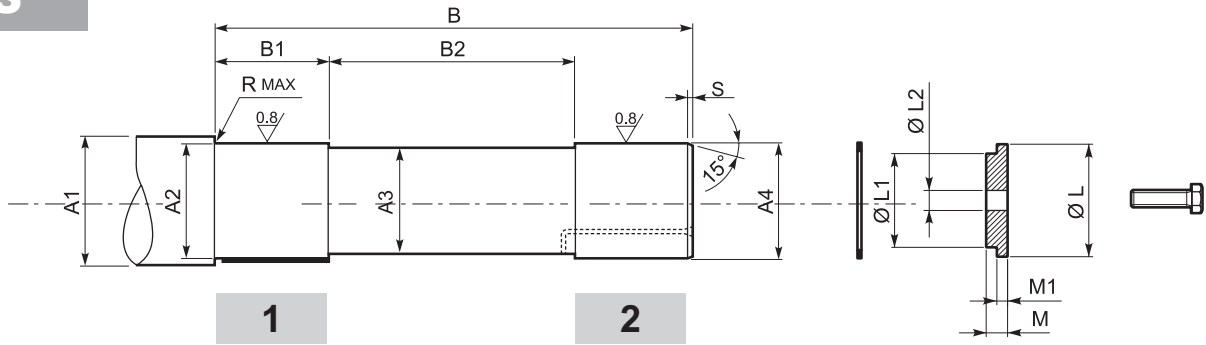


|         | A1  | A2     | A3    | B   | B1  | B2  | C   | D   | E     | F   | R   | S   | <br>UNI6604 |
|---------|---|--------|-------|-----|-----|-----|-----|-----|-------|-----|-----|-----|--|
| HDO 71  | ≥ 89  | 80 h6  | 79    | 283 | 78  | 127 | 220 | 30  | 22 h9 | 85  | 2.5 | 2.5 | 22x14x220A   |
| HDO 81  | ≥ 104   | 95 h6  | 94    | 338 | 73  | 192 | 280 | 30  | 25 h9 | 100 | 2.5 | 2.5 | 25x14x280A   |
| HDO 91  | ≥ 121   | 110 h6 | 109   | 378 | 88  | 202 | 320 | 30  | 28 h9 | 116 | 2.5 | 2.5 | 28x16x320A   |
| HDO 95  | ≥ 128   | 115 h6 | 114   | 398 | 100 | 228 | 340 | 30  | 32 h9 | 122 | 2.5 | 2.5 | 32x18x340A   |
| HDO 100 | ≥ 133   | 120 h6 | 119.5 | 420 | 100 | 250 | 360 | 30  | 32 h9 | 127 | 3   | 2.5 | 32x18x360A   |
| HDO 110 | ≥ 143   | 130 h6 | 129.5 | 420 | 100 | 250 | 360 | 30  | 32 h9 | 137 | 3   | 2.5 | 32x18x360A   |
| HDO 120 | ≥ 153   | 140 h6 | 139.5 | 444 | 110 | 260 | 400 | 40  | 36 h9 | 148 | 3   | 2.5 | 36x20x400A   |
| HDO 125 | ≥ 163   | 150 h6 | 149.5 | 444 | 110 | 260 | 400 | 40  | 36 h9 | 158 | 3   | 2.5 | 36x20x400A   |
| HDO 130 | ≥ 183   | 170 h6 | 169.5 | 540 | 135 | 310 | 400 | 80  | 40 h9 | 179 | 3   | 2.5 | 40x22x400A   |
| HDO 140 | ≥ 193   | 180 h6 | 179.5 | 540 | 135 | 310 | 400 | 80  | 45 h9 | 190 | 3   | 2.5 | 45x25x400A   |
| HDO 150 | ≥ 223   | 210 h6 | 209.5 | 667 | 155 | 400 | 500 | 100 | 50 h9 | 221 | 3   | 3   | 50x28x450B   |
| HDO 160 | ≥ 223   | 210 h6 | 209.5 | 667 | 155 | 400 | 500 | 100 | 50 h9 | 221 | 3   | 3   | 50x28x450B   |
| HDO 170 | ≥ 255   | 240 h6 | 239.5 | 697 | 170 | 400 | 506 | 100 | 56 h9 | 252 | 3   | 3   | 56x32x450B   |
| HDO 180 |  BONFIGLIOLI TECHNICAL SERVICE |        |       |     |     |     |     |     |       |     |     |     |  |

| Out of scope for supply |   |        |        |     |   |     |    |      |  |
|-------------------------|---|--------|--------|-----|---|-----|----|------|--|
|                         | <br>UNI7437                    | G      | G1     | G2  | <br>G3 | G4  | H  | H1   | <br>UNI5739 |
| HDO 71                  | —   | 100    | 80 d9  | —   | 22  | —   | 10 | 8.5  | M20x50   |
| HDO 81                  | —   | 115    | 95 d9  | —   | 26  | —   | 15 | 13.5 | M24x60   |
| HDO 91                  | —   | 130    | 110 d9 | —   | 26  | —   | 15 | 13.5 | M24x60   |
| HDO 95                  | 115x4   | 115 d9 | 91     | 59  | 26  | M16 | 24 | 12   | M24x70   |
| HDO 100                 | 120x4   | 120 d9 | 96     | 64  | 26  | M16 | 24 | 12   | M24x70   |
| HDO 110                 | 130x4   | 130 d9 | 105    | 69  | 26  | M20 | 24 | 12   | M24x70   |
| HDO 120                 | 140x4   | 140 d9 | 115    | 79  | 26  | M20 | 30 | 15   | M24x80   |
| HDO 125                 | 150x4   | 150 d9 | 122    | 86  | 26  | M20 | 30 | 15   | M24x80   |
| HDO 130                 | 170x4   | 170 d9 | 142    | 102 | 33  | M24 | 34 | 17   | M30x90   |
| HDO 140                 | 180x4   | 180 d9 | 150    | 110 | 33  | M24 | 34 | 17   | M30x90   |
| HDO 150                 | 210x5   | 210 d9 | 178    | 140 | 33  | M24 | 36 | 18   | M30x100  |
| HDO 160                 | 210x5   | 210 d9 | 178    | 140 | 33  | M24 | 36 | 18   | M30x100  |
| HDO 170                 | 240x5   | 240 d9 | 208    | 160 | 39  | M24 | 36 | 18   | M36x110  |
| HDO 180                 |  BONFIGLIOLI TECHNICAL SERVICE |        |        |     |   |     |    |      |  |



S



1

2

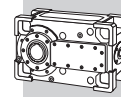
HDO

|         | A1                            | A2     | A3    | A4     | B   | B1  | B2  | R   | S   |
|---------|-------------------------------|--------|-------|--------|-----|-----|-----|-----|-----|
| HDO 71  | ≥ 104                         | 82 h7  | 79    | 80 g6  | 332 | 77  | 174 | 2.5 | 2.5 |
| HDO 81  | ≥ 119                         | 97 h7  | 94    | 95 g6  | 398 | 95  | 205 | 2.5 | 2.5 |
| HDO 91  | ≥ 128                         | 112 h7 | 109   | 110 g6 | 440 | 87  | 273 | 2.5 | 2.5 |
| HDO 95  | ≥ 133                         | 120 h6 | 114.5 | 115 g6 | 498 | 104 | 309 | 2.5 | 2.5 |
| HDO 100 | ≥ 138                         | 125 h6 | 119.5 | 120 g6 | 517 | 104 | 328 | 3   | 2.5 |
| HDO 110 | ≥ 148                         | 135 h6 | 129.5 | 130 g6 | 523 | 104 | 334 | 3   | 2.5 |
| HDO 120 | ≥ 158                         | 145 h6 | 139.5 | 140 g6 | 550 | 104 | 354 | 3   | 2.5 |
| HDO 125 | ≥ 168                         | 155 h6 | 149.5 | 150 g6 | 570 | 104 | 363 | 3   | 2.5 |
| HDO 130 | ≥ 188                         | 175 h6 | 169.5 | 170 g6 | 681 | 104 | 462 | 3   | 2.5 |
| HDO 140 | ≥ 198                         | 185 h6 | 179.5 | 180 g6 | 689 | 104 | 470 | 3   | 2.5 |
| HDO 150 | ≥ 228                         | 215 h6 | 209.5 | 210 g6 | 839 | 104 | 593 | 3   | 3   |
| HDO 160 | ≥ 228                         | 215 h6 | 209.5 | 210 g6 | 839 | 104 | 593 | 3   | 3   |
| HDO 170 | BONFIGLIOLI TECHNICAL SERVICE |        |       |        |     |     |     |     |     |
| HDO 180 | BONFIGLIOLI TECHNICAL SERVICE |        |       |        |     |     |     |     |     |

| Out of scope for supply |                               |        |        |        |    |      |             |
|-------------------------|-------------------------------|--------|--------|--------|----|------|-------------|
|                         | <br>UNI7437                   | L      | L1     | <br>L2 | M  | M1   | <br>UNI5739 |
| HDO 71                  | —                             | 100    | 80 d9  | 22     | 10 | 8.5  | M20x50      |
| HDO 81                  | —                             | 115    | 95 d9  | 26     | 15 | 13.5 | M24x60      |
| HDO 91                  | —                             | 130    | 110 d9 | 26     | 15 | 13.5 | M24x60      |
| HDO 95                  | 115x4                         | 115 d9 | 91     | 26     | 16 | 12   | M24x65      |
| HDO 100                 | 120x4                         | 120 d9 | 96     | 26     | 16 | 12   | M24x65      |
| HDO 110                 | 130x4                         | 130 d9 | 105    | 26     | 16 | 12   | M24x65      |
| HDO 120                 | 140x4                         | 140 d9 | 115    | 26     | 19 | 15   | M24x70      |
| HDO 125                 | 150x4                         | 150 d9 | 122    | 26     | 19 | 15   | M24x70      |
| HDO 130                 | 170x4                         | 170 d9 | 142    | 33     | 21 | 17   | M30x80      |
| HDO 140                 | 180x4                         | 180 d9 | 150    | 33     | 21 | 17   | M30x80      |
| HDO 150                 | 210x5                         | 210 d9 | 178    | 33     | 29 | 18   | M30x90      |
| HDO 160                 | 210x5                         | 210 d9 | 178    | 33     | 29 | 18   | M30x90      |
| HDO 170                 | BONFIGLIOLI TECHNICAL SERVICE |        |        |        |    |      |             |
| HDO 180                 | BONFIGLIOLI TECHNICAL SERVICE |        |        |        |    |      |             |

To facilitate part removal in the area of the cylindrical guide opposite the shrink disc, install a machine pivot to which a self-lubricating cylindrical bushing (1) can be fitted and/or with a hole big enough to allow application of a rust treatment (2). In the presence of external thrust loads, vibration, safety problems, requirements for enhanced reliability, or unfavourable mounting positions (e.g. V5 mounting positions, output shaft directed downwards), install suitable devices to secure the shaft in an axial direction and prevent accidental decoupling.





## BEVEL HELICAL GEAR UNITS SERIES HDO ATEX CONFIGURATION

Selection of the the product must fit through the compilation of the selection form (see page 11). For a safe selection it is strongly recommended to rely on the long time experience of the Bonfiglioli Technical Service Dept.

### 32 INSTALLATION, USE AND MAINTENANCE

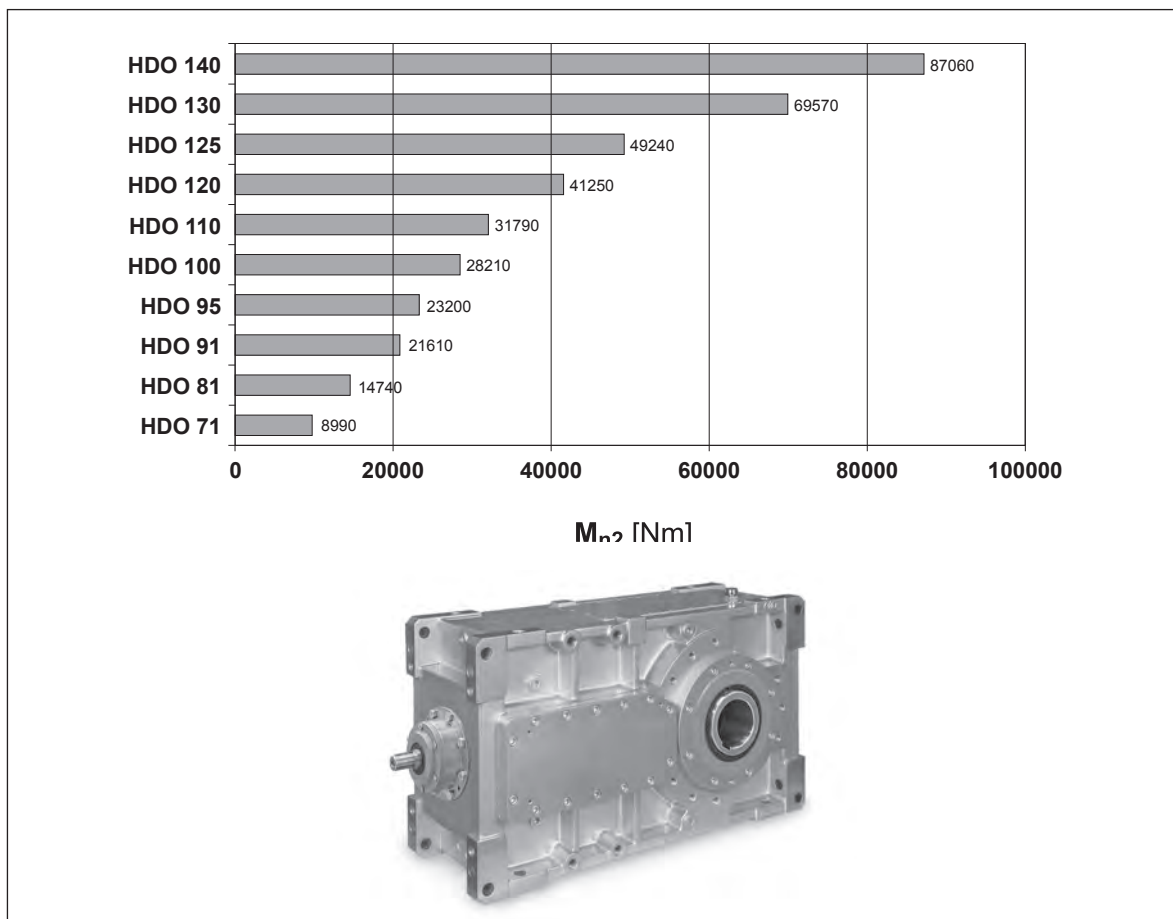
All the instructions for installation, use and maintenance of the product are given in the unit's Manual.

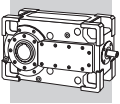
This can be downloaded from [www.bonfiglioli.com](http://www.bonfiglioli.com) where the manual is available in PDF format in a number of languages.

This document must be kept in a suitable place, in the vicinity of the installed gear unit, as a reference for all persons authorised to work with or on the product throughout its service life.

### 33 CONSTRUCTION OF ATEX-SPECIFIED EQUIPMENT

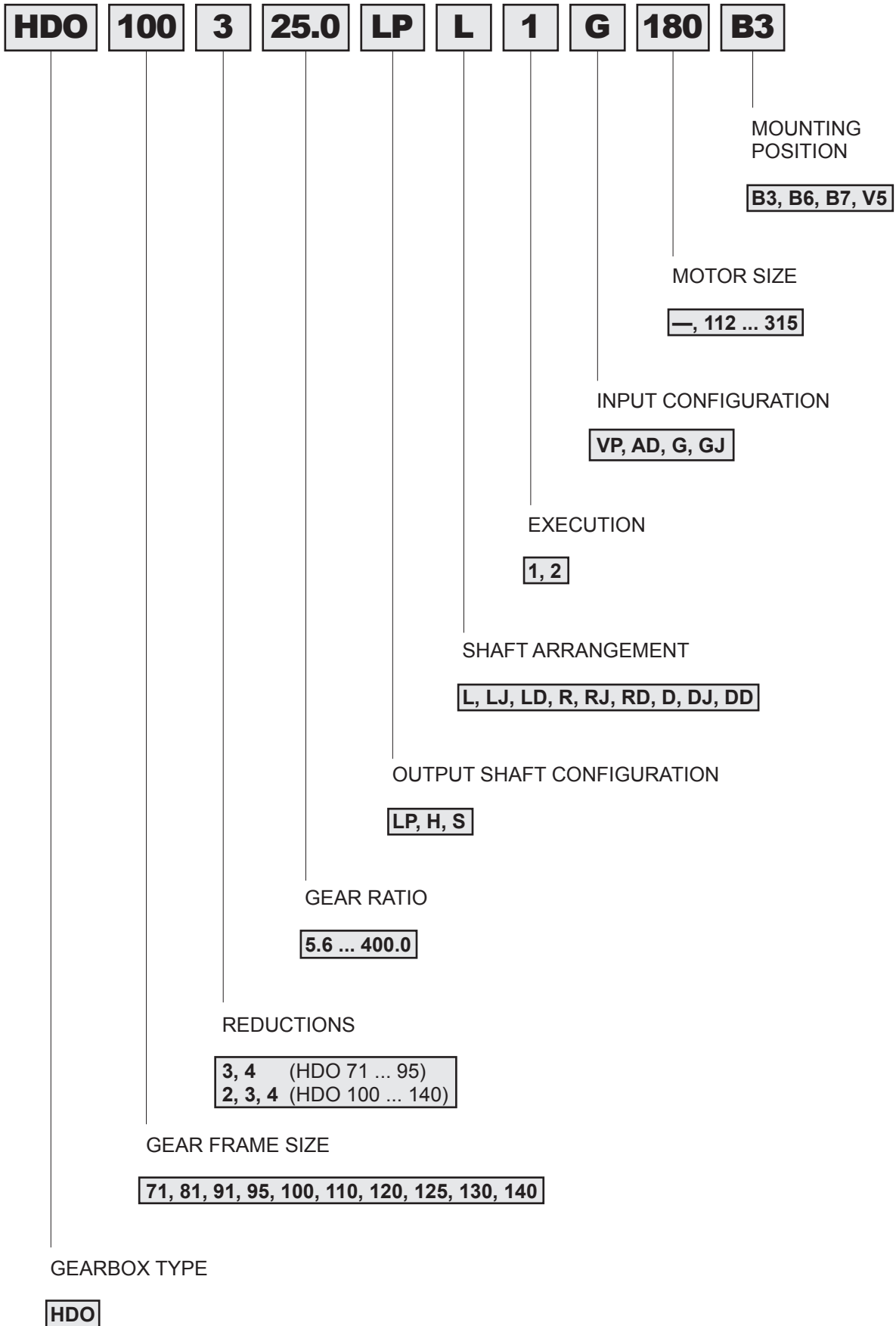
- Equipped with service plugs for periodic lubricant level checks.
- Equipped with vent caps with anti-intrusion valve.
- Fluoro elastomer seal rings as standard.
- No plastic component parts..
- Nameplate indication of the product category and type of protection.
- Components operable at above the operating temperature.
- Temperature indicator supplied along with each unit.



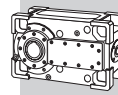


34 DESIGNATION

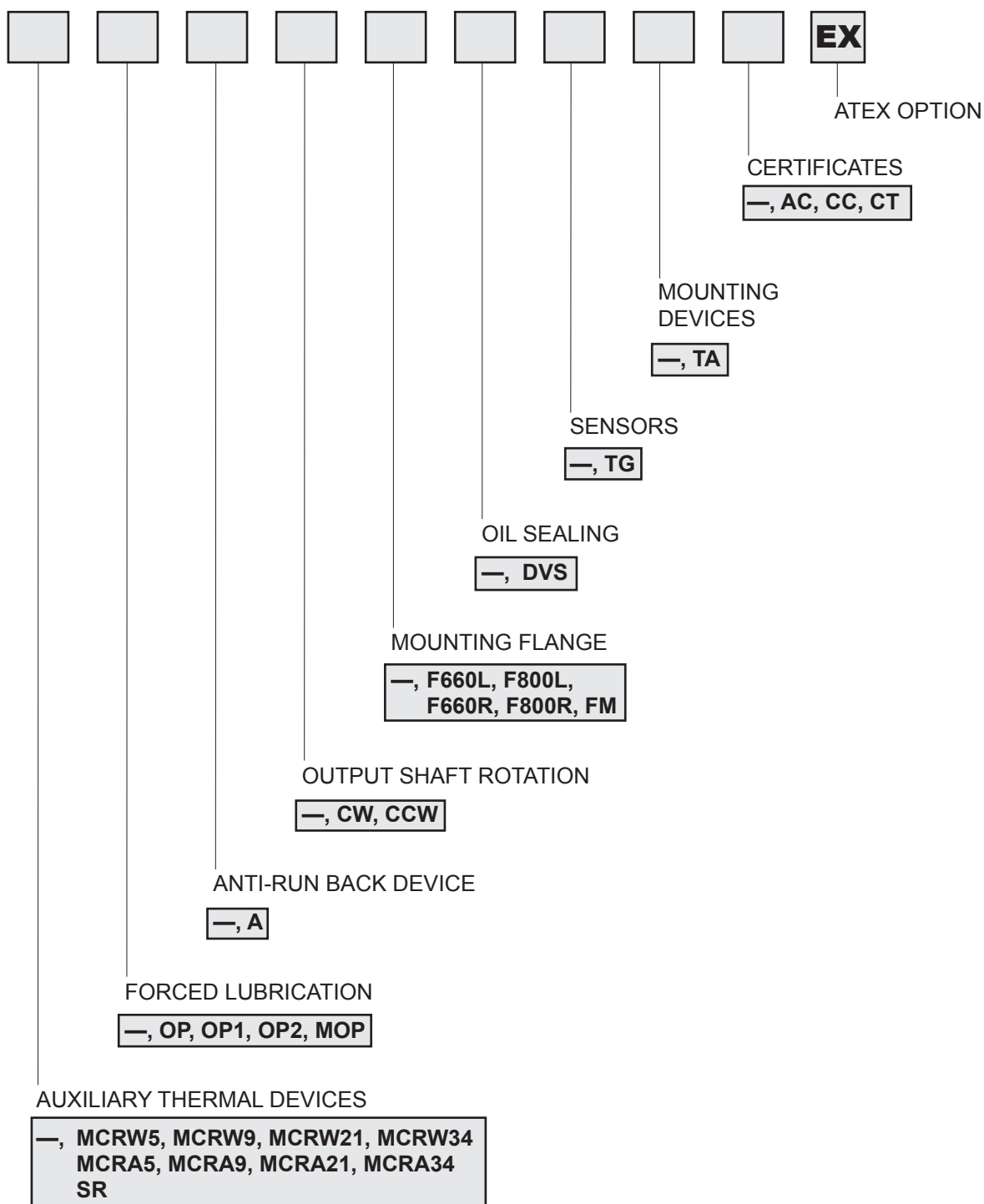
34.1 BASE VARIANTS



HDO



### 34.2 OPTIONAL VARIANTS




REMARK: The multiple selection of some of the variants may be subject to technical or dimensional constraints. Consult with the factory to have your selection approved.

### 35 OTHER INFORMATION ABOUT GEARBOX AND GEARMOTOR

Mounting positions, technical data, motor availability, moments of inertia and dimensions of **HDO-EX (Atex)** series don't change among equivalent **HDO** product series. All of these information can be obtained in the related chapters of this catalogue.



## INDEX OF REVISIONS

| BR_CAT_HDPO_STD_ENG_R05_1   |                                       |
|---|---------------------------------------|
|  | Description                           |
| ...   | Added new gearboxes HDO 71 ... HDO 95 |

2017\_05\_22

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