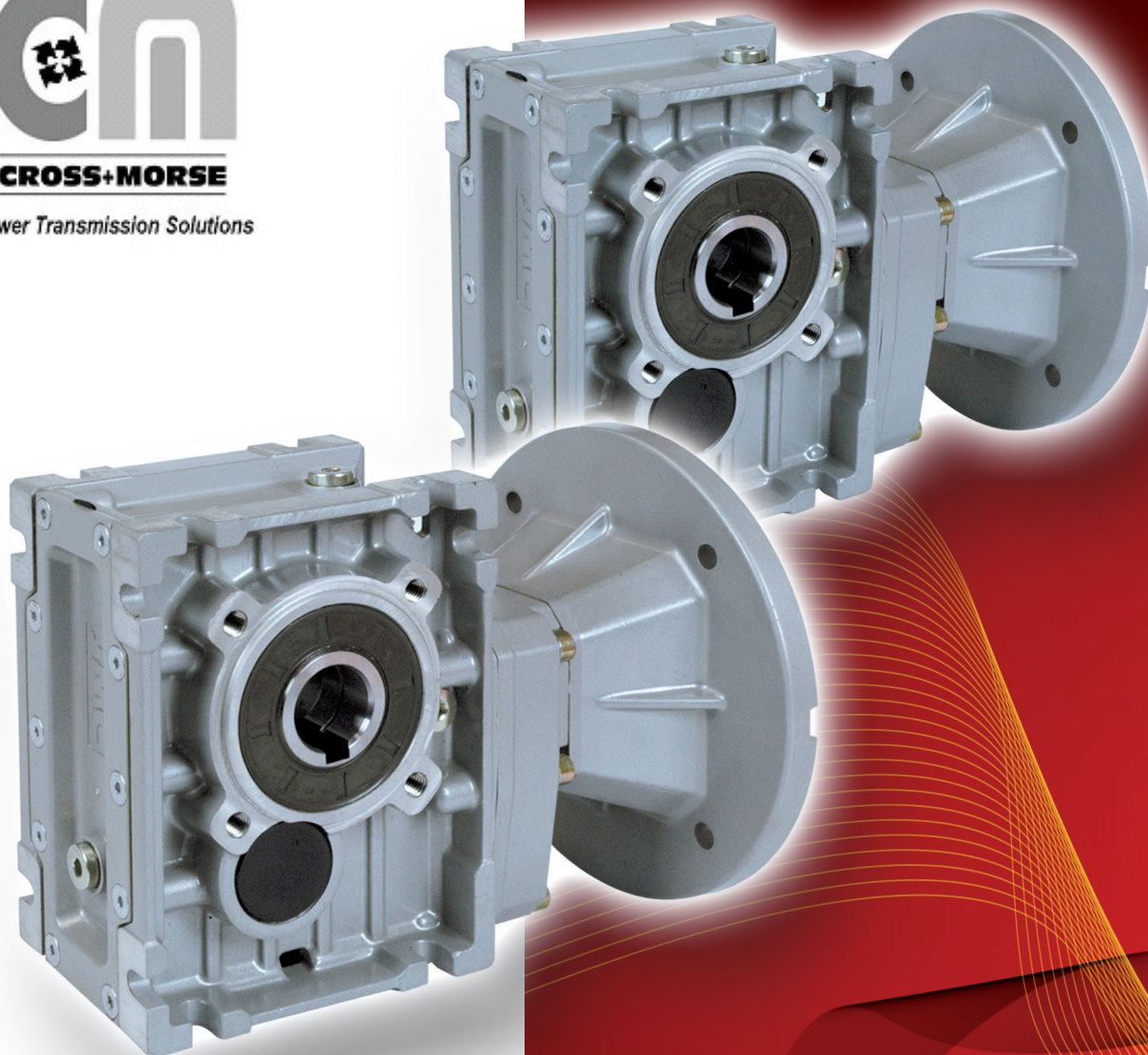




**CROSS+MORSE**

*Power Transmission Solutions*



## CHO HELICAL-HYPOID GEAR UNITS



CHO helical hypoid gear units have been conceived to be used instead of worm gearboxes where high efficiency is requested, especially with high ratios, they are interchangeable and guarantee low exercise temperature.

They can be connected, through a coupling to standard motors, brake motors and explosion-proof motors.

This kind of gearboxes are widely used where energy saving is requested and with electric motors driven by inverters.

### PRODUCT FEATURES

- High efficiency
- Low noise
- Low temperature
- Universal mounting
- Aluminum housing, grey RAL 9022 painted

CHO gearboxes are manufactured in 4 sizes.

Power 0.12-4KW

Ratio 7,5-300

Torque max 130-500 Nm.



## GENERAL INFORMATION

### POWER P

$$P_1 \cdot \eta = P_2$$

$P_1$  = Input power

$P_2$  = Output power

$\eta$  = Transmission efficiency

### ROTATION SPEED n

$n_1$  = Input speed

$n_2$  = Output speed

An output speed  $\leq 1400$  rpm is suggested so as to optimize the working condition and extend the service life.

Input speed higher are allowed following the table below.

| n. RPM | POWER     |
|--------|-----------|
| 1400   | Kw        |
| 2000   | Kw * 1,35 |
| 2800   | Kw * 1,8  |

### TRANSMISSION RATIO i

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

### TORQUE M

$$M_2 = \frac{9550 \cdot P_1 \cdot \eta}{n_2} \text{ [Nm]}$$

$$M_2 \geq M_{2n} \cdot f_s \text{ [Nm]}$$

$M_2$  = Output torque

$M_{2n}$  = Rated output torque

$P_1$  = Input power

$\eta$  = Transmission efficiency

$f_s$  = Service factor



## RADIAL LOADS $F_R$

The radial loads is proportional to the requested torque and inversely proportional to the transmission member diameter following this formula.

$$F_R = \frac{2000 \cdot T \cdot T.e.f.}{D} \left[ N \right]$$

$F_R$  = Radial load  
 $T$  = Nm (Torque)  
 $T.e.f.$  = Transmission element factor  
 $T.e.f.$  = 1,15 gear  
 $T.e.f.$  = 1,4 chain spocket  
 $T.e.f.$  = 1,75 v-pulley  
 $T.e.f.$  = 2,5 flat-pulley  
 $D$  = Transmission element diameter

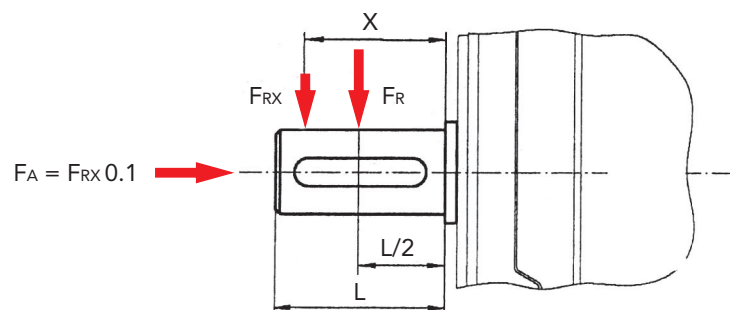
When the radial loads is not applied on the centre line of the shaft it is necessary to use the following formula.

$$F_{Rx} \leq \frac{F_R \cdot a}{(b+x)} \left[ N \right]$$

$F_R$  = Radial load on the centre line  
 $a, b, x$  = See table



## OUTPUT SHAFT RADIAL LOADS & AXIAL LOADS $F_R, F_A$



|          | CHO 52 | CHO 53 | CHO 62 | CHO 63 | CHO 72 | CHO 73 | CHO 82 | CHO 83 |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>a</b> | 104    | 104    | 128    | 128    | 135    | 135    | 148.5  | 148.5  |
| <b>b</b> | 78     | 70     | 98     | 98     | 105    | 105    | 118.5  | 118.5  |



## TYPES OF LUBRICATION

|     |  | ISO               | SHELL  | MOBIL  | BP  | Lubrication type |
|-----|-----------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------|
| CHO | standard<br>-10    +40                                                            | VG 220            | Shell Omala 220                                                                         | Mobilgear 630                                                                            | BP Energol GR-XP 220                                                                   | Mineral Oil      |
|     | -20    +25                                                                        | VG 150<br>VG 100  | Shell Omala 100                                                                         | Mobilgear 627                                                                            | BP Energol GR-XP 100                                                                   |                  |
|     | -30    +10                                                                        | VG 68-46<br>VG 32 | Shell Tellus T 32                                                                       | Mobil D.T.E. 13M                                                                         |                                                                                        |                  |
|     | -40    -20                                                                        | VG 22<br>VG 15    | Shell Tellus T 15                                                                       | Mobil D.T.E. 11M                                                                         | BP Energol HLP-HM 15                                                                   |                  |
|     | -40    +80                                                                        | VG 220            | Shell Omala HD 150                                                                      | Mobil SHC 630                                                                            |                                                                                        | Syntetic oil     |
|     | -40    +40                                                                        | VG 150            |                                                                                         | Mobil SHC 629                                                                            |                                                                                        |                  |
|     | -40    +10                                                                        | VG 32             |                                                                                         | Mobil SHC 624                                                                            |                                                                                        |                  |

## LUBRICANT FILL QUANTITY

The specified fill quantities are recommended values. The precise values vary depending on the number of stages and gear ratio. The following tables show guide values for lubricant fill quantities in relation to the mounting position (B3, B6, B7...)

| size   | fill quantity in liters |      |      |      |      |      |
|--------|-------------------------|------|------|------|------|------|
|        | B3                      | B6   | B7   | B8   | V5   | V6   |
| CHO 52 | 0.22                    | 0.20 | 0.13 | 0.15 | 0.25 | 0.14 |
| CHO 53 | 0.07                    | 0.04 | 0.04 | 0.05 | 0.08 | 0.09 |
| CHO 62 | 0.38                    | 0.35 | 0.25 | 0.26 | 0.44 | 0.25 |
| CHO 63 | 0.07                    | 0.04 | 0.04 | 0.05 | 0.08 | 0.09 |
| CHO 72 | 0.66                    | 0.60 | 0.45 | 0.48 | 0.78 | 0.47 |
| CHO 73 | 0.13                    | 0.09 | 0.09 | 0.09 | 0.15 | 0.17 |
| CHO 82 | 1.15                    | 0.93 | 0.70 | 0.74 | 1.25 | 0.75 |
| CHO 83 | 0.13                    | 0.09 | 0.09 | 0.09 | 0.15 | 0.17 |

CHO gearboxes are supplied complete with mineral oil for mounting position B3. The pre-stage used for third stage is lubricated with syntetic oil and it does not need the breather plug.



## MAINTENANCE

- 1 For gear units, first oil change should be after about 300 hour (run-in period). Never mix the synthetic oil and mineral oil together.
- 2 Every 3000 working time, at least every 6 months, you have to check the oil and oil level, the seals visually for leakage. For IEC input gear units, the elastomer should be tested or replaced if necessary.
- 3 Depending on the operating conditions every 3 years at the latest for inspection is needed. Then change the mineral oil and replace the bearing grease.
- 4 Depending on the operating conditions, change the oil seals.
- 5 Verify that the coupling used to connect the motor is always greased to avoid risks of wear.



## DESIGNATION

| Gear units |          |                 |            |                   |             |                        |          | Motor |    |
|------------|----------|-----------------|------------|-------------------|-------------|------------------------|----------|-------|----|
| <b>CHO</b> | <b>5</b> | <b>2 - 7.60</b> | <b>FA1</b> | <b>SS1 - 71B5</b> | <b>B3 -</b> | <b>71B4 o 0.37 - 4</b> | <b>1</b> |       |    |
| 1          | 2        | 3               | 4          | 5                 | 6           | 7                      | 8        | 9     | 10 |

| No | Comments                                                                                                                   |
|----|----------------------------------------------------------------------------------------------------------------------------|
| 1  | Code for gear units series CHO                                                                                             |
| 2  | Sizes of gear units 5-6-7-8                                                                                                |
| 3  | 2 means 2 stages<br>3 means 3 stages                                                                                       |
| 4  | Speed ratio of reducer i=                                                                                                  |
| 5  | 1) no mark means without output flange<br>2) <b>FA, FB, FC, FD, FE (1/2)</b> : output flange and position                  |
| 6  | 1) no mark means hole output<br>2) <b>SS(1/2)</b> : single output shaft and position<br>3) <b>DS</b> : double output shaft |
| 7  | Input flange code (63B5, 71B5 ...)                                                                                         |
| 8  | Installation position code                                                                                                 |
| 9  | 1) no mark means without motor<br>2) model motors (poles of power)                                                         |
| 10 | Position diagram for motor terminal box                                                                                    |

Order example

**CHO 82 15.09 - FA1 - 71B5 - 71C4/3**



# RATIO AND IEC MOTOR ADAPTERS

| CHO 52/53 <span style="float: right;">n<sub>1</sub> = 1400 r/min</span> |             |                           |                         |       |    |      |                        | 130Nm |               |               |               |
|-------------------------------------------------------------------------|-------------|---------------------------|-------------------------|-------|----|------|------------------------|-------|---------------|---------------|---------------|
| i<br>nominal                                                            | i<br>actual | n <sub>2</sub><br>[r/min] | M <sub>2n</sub><br>[Nm] | P1=Kw | M1 | F.S. | F <sub>r2</sub><br>[N] | 63B5  | 71B5<br>71B14 | 80B5<br>80B14 | 90B5<br>90B14 |

## 3 stages

### CHO 53

|     |        |     |     |      |     |      |      |  |  |  |  |
|-----|--------|-----|-----|------|-----|------|------|--|--|--|--|
| 300 | 291.79 | 4.8 | 110 | 0.12 | 183 | 0.60 | 4100 |  |  |  |  |
| 250 | 244.29 | 5.8 | 130 | 0.12 | 173 | 0.75 | 4100 |  |  |  |  |
| 200 | 200.44 | 7.0 | 130 | 0.12 | 137 | 0.95 | 4100 |  |  |  |  |
| 150 | 146.67 | 9.6 | 130 | 0.18 | 151 | 0.86 | 4000 |  |  |  |  |
| 125 | 120.34 | 12  | 130 | 0.18 | 124 | 1.05 | 3770 |  |  |  |  |
| 100 | 101.04 | 14  | 130 | 0.25 | 144 | 0.90 | 3560 |  |  |  |  |
| 75  | 74.62  | 19  | 130 | 0.37 | 159 | 0.82 | 3220 |  |  |  |  |

## 2 stages

### CHO 52

|      |       |     |     |      |     |      |      |  |  |  |  |
|------|-------|-----|-----|------|-----|------|------|--|--|--|--|
| 60   | 58.36 | 24  | 110 | 0.37 | 133 | 0.83 | 2960 |  |  |  |  |
| 50   | 48.86 | 29  | 130 | 0.37 | 110 | 1.18 | 2790 |  |  |  |  |
| 40   | 40.09 | 35  | 130 | 0.55 | 130 | 1.00 | 2610 |  |  |  |  |
| 30   | 29.33 | 48  | 130 | 0.75 | 137 | 0.95 | 2350 |  |  |  |  |
| 25   | 24.07 | 59  | 130 | 0.75 | 110 | 1.18 | 2200 |  |  |  |  |
| 20   | 20.21 | 70  | 130 | 1.10 | 130 | 1.00 | 2080 |  |  |  |  |
| 15   | 14.92 | 94  | 130 | 1.50 | 137 | 0.95 | 1880 |  |  |  |  |
| 12.5 | 12.47 | 113 | 120 | 1.50 | 114 | 1.05 | 1770 |  |  |  |  |
| 10   | 10.47 | 134 | 110 | 1.50 | 96  | 1.15 | 1670 |  |  |  |  |
| 7.5  | 7.73  | 182 | 100 | 1.50 | 70  | 1.42 | 1510 |  |  |  |  |

| CHO 62/63 <span style="float: right;">n<sub>1</sub> = 1400 r/min</span> |             |                           |                         |       |    |      |                        | 200Nm |               |               |               |
|-------------------------------------------------------------------------|-------------|---------------------------|-------------------------|-------|----|------|------------------------|-------|---------------|---------------|---------------|
| i<br>nominal                                                            | i<br>actual | n <sub>2</sub><br>[r/min] | M <sub>2n</sub><br>[Nm] | P1=Kw | M1 | F.S. | F <sub>r2</sub><br>[N] | 63B5  | 71B5<br>71B14 | 80B5<br>80B14 | 90B5<br>90B14 |

## 3 stages

### CHO 63

|     |        |     |     |      |     |      |      |  |  |  |  |
|-----|--------|-----|-----|------|-----|------|------|--|--|--|--|
| 300 | 302.50 | 4.7 | 170 | 0.12 | 210 | 0.81 | 4800 |  |  |  |  |
| 250 | 243.57 | 5.8 | 200 | 0.18 | 250 | 0.80 | 4800 |  |  |  |  |
| 200 | 196.43 | 7.2 | 200 | 0.25 | 286 | 0.70 | 4800 |  |  |  |  |
| 150 | 151.56 | 9.3 | 200 | 0.25 | 222 | 0.90 | 4650 |  |  |  |  |
| 125 | 122.22 | 12  | 200 | 0.37 | 263 | 0.76 | 4330 |  |  |  |  |
| 100 | 101.27 | 14  | 200 | 0.37 | 215 | 0.93 | 4070 |  |  |  |  |
| 75  | 73.33  | 20  | 200 | 0.55 | 233 | 0.86 | 3650 |  |  |  |  |

## 2 stages

### CHO 62

|      |       |     |     |      |     |      |      |  |  |  |  |
|------|-------|-----|-----|------|-----|------|------|--|--|--|--|
| 60   | 60.50 | 24  | 170 | 0.55 | 205 | 0.83 | 3430 |  |  |  |  |
| 50   | 48.71 | 29  | 200 | 0.75 | 217 | 0.92 | 3190 |  |  |  |  |
| 40   | 39.29 | 36  | 200 | 0.75 | 180 | 1.11 | 2970 |  |  |  |  |
| 30   | 30.31 | 47  | 200 | 1.10 | 200 | 1.00 | 2720 |  |  |  |  |
| 25   | 24.44 | 58  | 200 | 1.50 | 217 | 0.92 | 2530 |  |  |  |  |
| 20   | 20.25 | 70  | 200 | 1.50 | 180 | 1.11 | 2380 |  |  |  |  |
| 15   | 14.67 | 96  | 200 | 1.50 | 135 | 1.48 | 2130 |  |  |  |  |
| 12.5 | 12.67 | 111 | 180 | 1.50 | 118 | 1.53 | 2030 |  |  |  |  |
| 10   | 10.50 | 134 | 170 | 1.50 | 94  | 1.80 | 1910 |  |  |  |  |
| 7.5  | 7.60  | 185 | 160 | 1.50 | 68  | 2.35 | 1710 |  |  |  |  |

2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

Quantity, availability and prices with Chiaravalli B2B



# RATIO AND IEC MOTOR ADAPTERS

| CHO 72/73    |             | n <sub>1</sub> = 1400 r/min |                         |       |    |      |                        |      |      | 350Nm         |               |                 |                 |
|--------------|-------------|-----------------------------|-------------------------|-------|----|------|------------------------|------|------|---------------|---------------|-----------------|-----------------|
| i<br>nominal | i<br>actual | n <sub>2</sub><br>[r/min]   | M <sub>2n</sub><br>[Nm] | P1=Kw | M1 | F.S. | F <sub>r2</sub><br>[N] | 63B5 | 71B5 | 80B5<br>80B14 | 90B5<br>90B14 | 100B5<br>100B14 | 112B5<br>112B14 |

## 3 stages

CHO 73

|     |        |     |     |      |     |      |      |  |  |  |  |  |  |
|-----|--------|-----|-----|------|-----|------|------|--|--|--|--|--|--|
| 300 | 297.21 | 4.8 | 350 | 0.25 | 432 | 0.81 | 6500 |  |  |  |  |  |  |
| 250 | 240.89 | 5.9 | 350 | 0.25 | 350 | 1.00 | 6500 |  |  |  |  |  |  |
| 200 | 200.66 | 7.0 | 350 | 0.25 | 291 | 1.19 | 6500 |  |  |  |  |  |  |
| 150 | 151.20 | 9.3 | 350 | 0.37 | 324 | 1.08 | 6500 |  |  |  |  |  |  |
| 125 | 125.95 | 12  | 350 | 0.55 | 398 | 0.88 | 5980 |  |  |  |  |  |  |
| 100 | 99.22  | 15  | 350 | 0.55 | 314 | 1.11 | 5520 |  |  |  |  |  |  |
| 75  | 75.45  | 19  | 350 | 0.75 | 318 | 1.10 | 5040 |  |  |  |  |  |  |

## 2 stages

CHO 72

|      |       |     |     |      |     |      |      |  |  |  |  |  |  |
|------|-------|-----|-----|------|-----|------|------|--|--|--|--|--|--|
| 60   | 59.44 | 24  | 350 | 1.10 | 394 | 0.88 | 4660 |  |  |  |  |  |  |
| 50   | 48.18 | 30  | 350 | 1.10 | 324 | 1.08 | 4340 |  |  |  |  |  |  |
| 40   | 40.13 | 35  | 350 | 1.50 | 350 | 1.00 | 4080 |  |  |  |  |  |  |
| 30   | 30.24 | 47  | 350 | 1.50 | 269 | 1.30 | 3720 |  |  |  |  |  |  |
| 25   | 25.19 | 56  | 350 | 2.20 | 318 | 1.10 | 3500 |  |  |  |  |  |  |
| 20   | 19.84 | 71  | 350 | 2.20 | 269 | 1.30 | 3230 |  |  |  |  |  |  |
| 15   | 15.09 | 93  | 350 | 3.00 | 269 | 1.30 | 2950 |  |  |  |  |  |  |
| 12.5 | 12.49 | 113 | 330 | 4.00 | 311 | 1.06 | 2770 |  |  |  |  |  |  |
| 10   | 9.84  | 143 | 320 | 4.00 | 244 | 1.31 | 2550 |  |  |  |  |  |  |
| 7.5  | 7.48  | 188 | 310 | 4.00 | 186 | 1.67 | 2330 |  |  |  |  |  |  |

| CHO 82/83    |             | n <sub>1</sub> = 1400 r/min |                         |       |    |      |                        |      |      | 500Nm         |               |                 |                 |
|--------------|-------------|-----------------------------|-------------------------|-------|----|------|------------------------|------|------|---------------|---------------|-----------------|-----------------|
| i<br>nominal | i<br>actual | n <sub>2</sub><br>[r/min]   | M <sub>2n</sub><br>[Nm] | P1=Kw | M1 | F.S. | F <sub>r2</sub><br>[N] | 63B5 | 71B5 | 80B5<br>80B14 | 90B5<br>90B14 | 100B5<br>100B14 | 112B5<br>112B14 |

## 3 stages

CHO 83

|     |        |     |     |      |     |      |      |  |  |  |  |  |  |
|-----|--------|-----|-----|------|-----|------|------|--|--|--|--|--|--|
| 300 | 295.18 | 4.8 | 460 | 0.25 | 425 | 1.08 | 8300 |  |  |  |  |  |  |
| 250 | 240.89 | 5.9 | 500 | 0.37 | 500 | 1.00 | 8300 |  |  |  |  |  |  |
| 200 | 200.66 | 7.0 | 500 | 0.37 | 433 | 1.15 | 8300 |  |  |  |  |  |  |
| 150 | 151.20 | 9.3 | 500 | 0.55 | 481 | 1.04 | 8050 |  |  |  |  |  |  |
| 125 | 125.95 | 12  | 500 | 0.75 | 532 | 0.94 | 7580 |  |  |  |  |  |  |
| 100 | 99.22  | 15  | 500 | 0.75 | 417 | 1.20 | 7000 |  |  |  |  |  |  |
| 75  | 75.45  | 19  | 500 | 1.10 | 481 | 1.04 | 6390 |  |  |  |  |  |  |

## 2 stages

CHO 82

|      |       |     |     |      |     |      |      |  |  |  |  |  |  |
|------|-------|-----|-----|------|-----|------|------|--|--|--|--|--|--|
| 60   | 59.04 | 24  | 460 | 1.50 | 489 | 0.94 | 5890 |  |  |  |  |  |  |
| 50   | 48.17 | 30  | 500 | 1.50 | 435 | 1.15 | 5500 |  |  |  |  |  |  |
| 40   | 40.13 | 35  | 500 | 2.20 | 543 | 0.92 | 5170 |  |  |  |  |  |  |
| 30   | 30.24 | 47  | 500 | 2.20 | 407 | 1.23 | 4710 |  |  |  |  |  |  |
| 25   | 25.19 | 56  | 500 | 3.00 | 450 | 1.11 | 4430 |  |  |  |  |  |  |
| 20   | 19.84 | 71  | 500 | 4.00 | 500 | 1.00 | 4090 |  |  |  |  |  |  |
| 15   | 15.09 | 93  | 500 | 4.00 | 373 | 1.34 | 3730 |  |  |  |  |  |  |
| 12.5 | 12.49 | 113 | 480 | 4.00 | 310 | 1.55 | 3510 |  |  |  |  |  |  |
| 10   | 9.84  | 143 | 460 | 4.00 | 243 | 1.89 | 3240 |  |  |  |  |  |  |
| 7.5  | 7.48  | 188 | 440 | 4.00 | 186 | 2.37 | 2950 |  |  |  |  |  |  |



# GEAR UNIT SELECTION TABLES

| P <sub>1n</sub><br>[Kw] | n <sub>2</sub><br>[r/min] | M <sub>2n</sub><br>[Nm] | i<br>nominal | i<br>actual | F <sub>r2</sub><br>[N] | f <sub>s</sub> |              |             |             |
|-------------------------|---------------------------|-------------------------|--------------|-------------|------------------------|----------------|--------------|-------------|-------------|
| <b>0.12</b>             | 5.7                       | 184                     | 250          | 244.29      | 4100                   | 0.7            | <b>CHO53</b> | <b>63B5</b> | <b>63A4</b> |
|                         | 7.0                       | 151                     | 200          | 200.44      | 4100                   | 0.9            |              |             |             |
|                         | 9.5                       | 110                     | 150          | 146.67      | 4000                   | 1.2            |              |             |             |
|                         | 11.6                      | 91                      | 125          | 120.34      | 3770                   | 1.4            |              |             |             |
|                         | 13.9                      | 76                      | 100          | 101.04      | 3560                   | 1.7            |              |             |             |
|                         | 18.8                      | 56                      | 75           | 74.62       | 3220                   | 2.3            |              |             |             |
|                         | 24.0                      | 45                      | 60           | 58.36       | 2960                   | 2.4            | <b>CHO52</b> | <b>63B5</b> | <b>63A4</b> |
|                         | 28.7                      | 38                      | 50           | 48.86       | 2790                   | 3.5            |              |             |             |
|                         | 35                        | 31                      | 40           | 40.09       | 2610                   | 4.2            |              |             |             |
|                         | 48                        | 23                      | 30           | 29.33       | 2350                   | 5.8            |              |             |             |
|                         | 58                        | 18.5                    | 25           | 24.07       | 2200                   | 7.0            |              |             |             |
|                         | 69                        | 15.6                    | 20           | 20.21       | 2080                   | 8.4            |              |             |             |
|                         | 94                        | 11.5                    | 15           | 14.92       | 1880                   | 11.3           |              |             |             |
|                         | 112                       | 9.6                     | 12.5         | 12.47       | 1770                   | 13.5           |              |             |             |
|                         | 134                       | 8.1                     | 10           | 10.47       | 1670                   | 16.1           |              |             |             |
|                         | 181                       | 5.9                     | 7.5          | 7.73        | 1510                   | 16.8           |              |             |             |
|                         | 5.7                       | 183                     | 250          | 243.57      | 4800                   | 1.1            | <b>CHO63</b> | <b>63B5</b> | <b>63A4</b> |
|                         | 7.1                       | 148                     | 200          | 196.43      | 4800                   | 1.4            |              |             |             |
|                         | 9.2                       | 114                     | 150          | 151.56      | 4650                   | 1.8            |              |             |             |
|                         | 11.5                      | 92                      | 125          | 122.22      | 4330                   | 2.2            |              |             |             |
|                         | 13.8                      | 76                      | 100          | 101.27      | 4070                   | 2.6            |              |             |             |
|                         | 19.1                      | 55                      | 75           | 73.33       | 3650                   | 2.9            |              |             |             |
|                         | 4.7                       | 224                     | 300          | 297.21      | 6500                   | 1.6            | <b>CHO73</b> | <b>63B5</b> | <b>63A4</b> |
|                         | 5.8                       | 181                     | 250          | 240.89      | 6500                   | 1.9            |              |             |             |
|                         | 7.0                       | 151                     | 200          | 200.66      | 6500                   | 2.3            |              |             |             |
|                         | 4.7                       | 222                     | 300          | 295.18      | 8300                   | 2.1            | <b>CHO83</b> | <b>63B5</b> | <b>63A4</b> |
|                         | 5.8                       | 181                     | 250          | 240.89      | 8300                   | 2.8            |              |             |             |
| <b>0.18</b>             | 48                        | 34                      | 60           | 58.36       | 2350                   | 3.3            | <b>CHO52</b> | <b>63B5</b> | <b>63A2</b> |
|                         | 57                        | 28                      | 50           | 48.86       | 2220                   | 4.6            |              |             |             |
|                         | 70                        | 23                      | 40           | 40.09       | 2070                   | 5.6            |              |             |             |
|                         | 95                        | 16.9                    | 30           | 29.33       | 1870                   | 7.7            |              |             |             |
|                         | 116                       | 13.9                    | 25           | 24.07       | 1750                   | 9.4            |              |             |             |
|                         | 11.6                      | 136                     | 125          | 120.34      | 3770                   | 1.0            | <b>CHO53</b> | <b>63B5</b> | <b>63B4</b> |
|                         | 13.9                      | 114                     | 100          | 101.04      | 3560                   | 1.1            |              |             |             |
|                         | 18.8                      | 84                      | 75           | 74.62       | 3220                   | 1.5            |              |             |             |
|                         | 24                        | 67                      | 60           | 58.36       | 2960                   | 1.6            | <b>CHO52</b> | <b>63B5</b> | <b>63B4</b> |
|                         | 28.7                      | 56                      | 50           | 48.86       | 2790                   | 2.3            |              |             |             |
|                         | 35                        | 46                      | 40           | 40.09       | 2610                   | 2.8            |              |             |             |
|                         | 48                        | 34                      | 30           | 29.33       | 2350                   | 3.8            |              |             |             |
|                         | 58                        | 28                      | 25           | 24.07       | 2200                   | 4.7            |              |             |             |
|                         | 69                        | 23                      | 20           | 20.21       | 2080                   | 5.6            |              |             |             |
|                         | 94                        | 17.2                    | 15           | 14.92       | 1880                   | 7.5            |              |             |             |
|                         | 112                       | 14.4                    | 12.5         | 12.47       | 1770                   | 9.0            |              |             |             |
|                         | 134                       | 12.1                    | 10           | 10.47       | 1670                   | 10.8           |              |             |             |
|                         | 181                       | 8.9                     | 7.5          | 7.73        | 1510                   | 11.2           |              |             |             |

2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

Quantity, availability and prices with Chiaravalli B2B



## GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$<br>nominal | $i$<br>actual | $F_{r2}$<br>[N] | $f_s$ |              |                 |             |
|------------------|------------------|------------------|----------------|---------------|-----------------|-------|--------------|-----------------|-------------|
| <b>0.18</b>      | 15.4             | 105              | 60             | 58.36         | 3430            | 1.0   | <b>CHO52</b> | <b>71B5/B14</b> | <b>71A6</b> |
|                  | 18.4             | 88               | 50             | 48.86         | 3240            | 1.5   |              |                 |             |
|                  | 22.4             | 72               | 40             | 40.09         | 3030            | 1.8   |              |                 |             |
|                  | 31               | 53               | 30             | 29.33         | 2730            | 2.5   |              |                 |             |
|                  | 37               | 43               | 25             | 24.07         | 2550            | 3.0   |              |                 |             |
|                  | 7.1              | 222              | 200            | 196.43        | 4800            | 0.9   | <b>CHO63</b> | <b>63B5</b>     | <b>63B4</b> |
|                  | 9.2              | 171              | 150            | 151.56        | 4650            | 1.2   |              |                 |             |
|                  | 11.5             | 138              | 125            | 122.22        | 4330            | 1.4   |              |                 |             |
|                  | 13.8             | 114              | 100            | 101.27        | 4070            | 1.7   |              |                 |             |
|                  | 19.1             | 83               | 75             | 73.33         | 3650            | 1.9   |              |                 |             |
|                  | 23.1             | 70               | 60             | 60.50         | 3430            | 2.4   | <b>CHO62</b> | <b>63B5</b>     | <b>63B4</b> |
|                  | 28.7             | 56               | 50             | 48.71         | 3190            | 3.6   |              |                 |             |
|                  | 7.4              | 215              | 125            | 122.22        | 4800            | 0.9   | <b>CHO63</b> | <b>71B5/B14</b> | <b>71A6</b> |
|                  | 8.9              | 178              | 100            | 101.27        | 4720            | 1.1   |              |                 |             |
|                  | 12.3             | 129              | 75             | 73.33         | 4230            | 1.2   |              |                 |             |
|                  | 14.9             | 109              | 60             | 60.50         | 3970            | 1.6   | <b>CHO62</b> | <b>71B5/B14</b> | <b>71A6</b> |
|                  | 18.5             | 87               | 50             | 48.71         | 3690            | 2.3   |              |                 |             |
|                  | 22.9             | 71               | 40             | 38.29         | 3440            | 2.8   |              |                 |             |
|                  | 4.7              | 336              | 300            | 297.21        | 6500            | 1.0   | <b>CHO73</b> | <b>63B5</b>     | <b>63B4</b> |
|                  | 5.8              | 272              | 250            | 240.89        | 6500            | 1.3   |              |                 |             |
|                  | 7.0              | 227              | 200            | 200.66        | 6500            | 1.5   |              |                 |             |
|                  | 9.3              | 171              | 150            | 151.20        | 6500            | 2.0   |              |                 |             |
|                  | 11.1             | 142              | 125            | 125.95        | 5980            | 2.5   |              |                 |             |
|                  | 14.1             | 112              | 100            | 99.22         | 5520            | 3.1   |              |                 |             |
|                  | 4.5              | 353              | 200            | 200.66        | 6500            | 1.0   | <b>CHO73</b> | <b>71B5</b>     | <b>71A6</b> |
|                  | 6.0              | 266              | 150            | 151.20        | 6500            | 1.3   |              |                 |             |
|                  | 7.1              | 221              | 125            | 125.95        | 6500            | 1.6   |              |                 |             |
|                  | 9.1              | 174              | 100            | 99.22         | 6400            | 2.0   |              |                 |             |
|                  | 11.9             | 133              | 75             | 75.45         | 5840            | 2.6   |              |                 |             |
|                  | 4.7              | 333              | 300            | 295.18        | 8300            | 1.4   | <b>CHO83</b> | <b>63B5</b>     | <b>63B4</b> |
|                  | 5.8              | 272              | 250            | 240.89        | 8300            | 1.8   |              |                 |             |
|                  | 7.0              | 227              | 200            | 200.66        | 8300            | 2.2   |              |                 |             |
|                  | 9.3              | 171              | 150            | 151.20        | 8050            | 2.9   |              |                 |             |
|                  | 3.7              | 423              | 250            | 240.89        | 8300            | 1.2   | <b>CHO83</b> | <b>71B5</b>     | <b>71A6</b> |
|                  | 4.5              | 353              | 200            | 200.66        | 8300            | 1.4   |              |                 |             |
|                  | 6.0              | 266              | 150            | 151.20        | 8300            | 1.9   |              |                 |             |
|                  | 7.1              | 221              | 125            | 125.95        | 8300            | 2.3   |              |                 |             |
|                  | 9.1              | 174              | 100            | 99.22         | 8110            | 2.9   |              |                 |             |
| <b>0.25</b>      | 19.1             | 115              | 150            | 146.67        | 3200            | 1.1   | <b>CHO53</b> | <b>63B5</b>     | <b>63B2</b> |
|                  | 23.3             | 94               | 125            | 120.34        | 2990            | 1.4   |              |                 |             |
|                  | 27.7             | 79               | 100            | 101.04        | 2820            | 1.6   |              |                 |             |
|                  | 38               | 59               | 75             | 74.62         | 2550            | 2.2   |              |                 |             |
|                  | 48               | 47               | 60             | 58.36         | 2350            | 2.4   | <b>CHO52</b> | <b>63B5</b>     | <b>63B2</b> |
|                  | 57               | 39               | 50             | 48.86         | 2220            | 3.3   |              |                 |             |
|                  | 70               | 32               | 40             | 40.09         | 2070            | 4.0   |              |                 |             |



# GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$<br>nominal | $i$<br>actual | $F_{r2}$<br>[N] | $f_s$ |       |          |      |
|------------------|------------------|------------------|----------------|---------------|-----------------|-------|-------|----------|------|
| 0.25             | 24               | 94               | 60             | 58.36         | 2960            | 1.2   | CHO52 | 71B5/B14 | 71A4 |
|                  | 28.7             | 78               | 50             | 48.86         | 2790            | 1.7   |       |          |      |
|                  | 35               | 64               | 40             | 40.09         | 2610            | 2.0   |       |          |      |
|                  | 48               | 47               | 30             | 29.33         | 2350            | 2.8   |       |          |      |
|                  | 58               | 39               | 25             | 24.07         | 2200            | 3.4   |       |          |      |
|                  | 69               | 32               | 20             | 20.21         | 2080            | 4.0   |       |          |      |
|                  | 94               | 24               | 15             | 14.92         | 1880            | 5.4   |       |          |      |
|                  | 18.4             | 122              | 50             | 48.86         | 3240            | 1.1   | CHO52 | 71B5/B14 | 71B6 |
|                  | 22.4             | 100              | 40             | 40.09         | 3030            | 1.3   |       |          |      |
|                  | 31               | 73               | 30             | 29.33         | 2730            | 1.8   |       |          |      |
|                  | 37               | 60               | 25             | 24.07         | 2550            | 2.2   |       |          |      |
|                  | 45               | 50               | 20             | 20.21         | 2410            | 2.6   |       |          |      |
|                  | 60               | 37               | 15             | 14.92         | 2180            | 3.5   |       |          |      |
|                  | 72               | 31               | 12.5           | 12.47         | 2050            | 4.2   |       |          |      |
|                  | 86               | 26               | 10             | 10.47         | 1930            | 5.0   |       |          |      |
|                  | 116              | 19               | 7.5            | 7.73          | 1750            | 5.2   |       |          |      |
|                  | 11.5             | 191              | 250            | 243.57        | 4330            | 1.0   | CHO63 | 63B5     | 63B2 |
|                  | 14.3             | 154              | 200            | 196.43        | 4030            | 1.3   |       |          |      |
|                  | 18.5             | 119              | 150            | 151.56        | 3690            | 1.7   |       |          |      |
|                  | 22.9             | 96               | 125            | 122.22        | 3440            | 2.1   |       |          |      |
|                  | 27.6             | 78               | 100            | 101.27        | 3230            | 2.5   |       |          |      |
|                  | 38               | 58               | 75             | 73.33         | 2900            | 2.8   |       |          |      |
|                  | 11.5             | 192              | 125            | 122.22        | 4330            | 1.0   | CHO63 | 71B5/B14 | 71A4 |
|                  | 13.8             | 159              | 100            | 101.27        | 4070            | 1.3   |       |          |      |
|                  | 19.1             | 115              | 75             | 73.33         | 3650            | 1.4   |       |          |      |
|                  | 23.1             | 97               | 60             | 60.50         | 3430            | 1.8   | CHO62 | 71B5/B14 | 71A4 |
|                  | 28.7             | 78               | 50             | 48.71         | 3190            | 2.6   |       |          |      |
|                  | 36               | 63               | 40             | 39.29         | 2970            | 3.2   |       |          |      |
|                  | 46               | 49               | 30             | 30.31         | 2720            | 4.1   |       |          |      |
|                  | 14.9             | 151              | 60             | 60.50         | 3970            | 1.1   | CHO62 | 71B5/B14 | 71B6 |
|                  | 18.5             | 121              | 50             | 48.71         | 3690            | 1.6   |       |          |      |
|                  | 22.9             | 98               | 40             | 39.29         | 3440            | 2.0   |       |          |      |
|                  | 29.7             | 76               | 30             | 30.31         | 3150            | 2.6   |       |          |      |
|                  | 9.4              | 233              | 300            | 297.21        | 6320            | 1.5   | CHO73 | 63B5     | 63B2 |
|                  | 11.6             | 189              | 250            | 240.89        | 5890            | 1.9   |       |          |      |
|                  | 14               | 157              | 200            | 200.66        | 5540            | 2.2   |       |          |      |
|                  | 18.5             | 119              | 150            | 151.20        | 5040            | 3.0   |       |          |      |
|                  | 5.8              | 378              | 250            | 240.89        | 6500            | 0.9   | CHO73 | 71B5     | 71A4 |
|                  | 7.0              | 315              | 200            | 200.66        | 6500            | 1.1   |       |          |      |
|                  | 9.3              | 237              | 150            | 151.20        | 6500            | 1.5   |       |          |      |
|                  | 11.1             | 198              | 125            | 125.95        | 5980            | 1.8   |       |          |      |
|                  | 14.1             | 156              | 100            | 99.22         | 5520            | 2.2   |       |          |      |
|                  | 18.6             | 118              | 75             | 75.45         | 5040            | 3.0   |       |          |      |
|                  | 6                | 369              | 150            | 151.20        | 6500            | 0.9   | CHO73 | 71B5     | 71B6 |
|                  | 7.1              | 307              | 125            | 125.95        | 6500            | 1.1   |       |          |      |

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Quantity, availability and prices with Chiaravalli B2B



## GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$<br>nominal | $i$<br>actual | $F_{r2}$<br>[N] | $f_s$ |       |          |      |
|------------------|------------------|------------------|----------------|---------------|-----------------|-------|-------|----------|------|
| 0.25             | 9.1              | 242              | 100            | 99.22         | 6400            | 1.4   | CHO73 | 71B5     | 71B6 |
|                  | 11.9             | 184              | 75             | 75.45         | 5840            | 1.9   |       |          |      |
|                  | 15.1             | 148              | 60             | 59.44         | 5390            | 2.4   | CHO72 | 71B5     | 71B6 |
|                  | 18.7             | 120              | 50             | 48.18         | 5030            | 2.9   |       |          |      |
|                  | 22.4             | 100              | 40             | 40.13         | 4730            | 3.5   |       |          |      |
|                  | 4.7              | 463              | 300            | 295.18        | 8300            | 1.0   | CHO83 | 71B5     | 71A4 |
|                  | 5.8              | 378              | 250            | 240.89        | 8300            | 1.3   |       |          |      |
|                  | 7.0              | 315              | 200            | 200.66        | 8300            | 1.6   |       |          |      |
|                  | 9.3              | 237              | 150            | 151.20        | 8050            | 2.1   |       |          |      |
|                  | 11.1             | 198              | 125            | 125.95        | 7580            | 2.5   |       |          |      |
|                  | 4.5              | 490              | 200            | 200.66        | 8300            | 1.0   | CHO83 | 71B5     | 71B6 |
|                  | 6.0              | 369              | 150            | 151.20        | 8300            | 1.4   |       |          |      |
|                  | 7.1              | 307              | 125            | 125.95        | 8300            | 1.6   |       |          |      |
|                  | 9.1              | 242              | 100            | 99.22         | 8110            | 2.1   |       |          |      |
|                  | 11.9             | 184              | 75             | 75.45         | 7400            | 2.7   |       |          |      |
| 0.37             | 23.3             | 140              | 125            | 120.34        | 2990            | 0.9   | CHO53 | 71B5/B14 | 71A2 |
|                  | 27.7             | 117              | 100            | 101.04        | 2820            | 1.1   |       |          |      |
|                  | 38               | 87               | 75             | 74.62         | 2550            | 1.5   |       |          |      |
|                  | 48               | 69               | 60             | 58.36         | 2350            | 1.6   | CHO52 | 71B5/B14 | 71A2 |
|                  | 57               | 58               | 50             | 48.86         | 2220            | 2.2   |       |          |      |
|                  | 70               | 48               | 40             | 40.09         | 2070            | 2.7   |       |          |      |
|                  | 95               | 35               | 30             | 29.33         | 1870            | 3.7   |       |          |      |
|                  | 28.7             | 116              | 50             | 48.86         | 2790            | 1.1   | CHO52 | 71B5/B14 | 71B4 |
|                  | 35               | 95               | 40             | 40.09         | 2610            | 1.4   |       |          |      |
|                  | 48               | 70               | 30             | 29.33         | 2350            | 1.6   |       |          |      |
|                  | 58               | 57               | 25             | 24.07         | 2200            | 2.3   |       |          |      |
|                  | 69               | 48               | 20             | 20.21         | 2080            | 2.7   |       |          |      |
|                  | 94               | 35               | 15             | 14.90         | 1880            | 3.7   |       |          |      |
|                  | 112              | 30               | 12.5           | 12.47         | 1770            | 4.4   |       |          |      |
|                  | 134              | 25               | 10             | 10.47         | 1670            | 5.2   |       |          |      |
|                  | 181              | 18               | 7.5            | 7.73          | 1510            | 5.5   |       |          |      |
|                  | 31               | 108              | 30             | 29.33         | 2730            | 1.2   | CHO52 | 80B5/B14 | 80A6 |
|                  | 37               | 89               | 25             | 24.07         | 2550            | 1.5   |       |          |      |
|                  | 45               | 75               | 20             | 20.21         | 2410            | 1.7   |       |          |      |
|                  | 60               | 55               | 15             | 14.92         | 2180            | 2.4   |       |          |      |
|                  | 72               | 46               | 12.5           | 12.47         | 2050            | 2.8   |       |          |      |
|                  | 86               | 39               | 10             | 10.47         | 1930            | 3.4   |       |          |      |
|                  | 116              | 29               | 7.5            | 7.73          | 1750            | 3.5   |       |          |      |
|                  | 14.3             | 228              | 200            | 196.43        | 4030            | 0.9   | CHO63 | 71B5/B14 | 71A2 |
|                  | 18.5             | 176              | 150            | 151.56        | 3690            | 1.1   |       |          |      |
|                  | 22.9             | 142              | 125            | 122.22        | 3440            | 1.4   |       |          |      |
|                  | 27.6             | 118              | 100            | 101.27        | 3230            | 1.7   |       |          |      |
|                  | 46               | 72               | 60             | 60.50         | 2720            | 2.4   | CHO62 | 71B5/B14 | 71A2 |
|                  | 57               | 58               | 50             | 48.71         | 2530            | 3.5   |       |          |      |
|                  | 71               | 47               | 40             | 39.29         | 2350            | 4.3   |       |          |      |



# GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$<br>nominal | $i$<br>actual | $F_{r2}$<br>[N] | $f_s$ |       |          |      |
|------------------|------------------|------------------|----------------|---------------|-----------------|-------|-------|----------|------|
| 0.37             | 13.8             | 235              | 100            | 101.27        | 4070            | 0.9   | CHO63 | 71B5/B14 | 71B4 |
|                  | 19.1             | 170              | 75             | 73.33         | 3650            | 0.9   |       |          |      |
|                  | 23.1             | 144              | 60             | 60.50         | 3430            | 1.2   | CHO62 | 71B5/B14 | 71B4 |
|                  | 28.7             | 116              | 50             | 48.71         | 3190            | 1.7   |       |          |      |
|                  | 36               | 93               | 40             | 39.29         | 2970            | 2.1   |       |          |      |
|                  | 46               | 72               | 30             | 30.31         | 2720            | 2.8   |       |          |      |
|                  | 57               | 58               | 25             | 24.44         | 2530            | 3.4   |       |          |      |
|                  | 69               | 48               | 20             | 20.25         | 2380            | 4.2   |       |          |      |
|                  | 18.5             | 180              | 50             | 48.71         | 3690            | 1.1   | CHO62 | 80B5/B14 | 80A6 |
|                  | 22.9             | 145              | 40             | 39.29         | 3440            | 1.4   |       |          |      |
|                  | 29.7             | 112              | 30             | 30.31         | 3150            | 1.8   |       |          |      |
|                  | 37               | 90               | 25             | 24.44         | 2930            | 2.2   |       |          |      |
|                  | 44               | 75               | 20             | 20.25         | 2760            | 2.7   |       |          |      |
|                  | 61               | 54               | 15             | 14.67         | 2470            | 3.5   |       |          |      |
|                  | 71               | 47               | 12.5           | 12.67         | 2360            | 3.5   |       |          |      |
|                  | 86               | 39               | 10             | 10.50         | 2210            | 3.5   |       |          |      |
|                  | 118              | 28               | 7.5            | 7.60          | 1990            | 3.6   |       |          |      |
|                  | 9.4              | 345              | 300            | 297.21        | 6320            | 1.0   | CHO73 | 71B5     | 71A2 |
|                  | 11.6             | 280              | 250            | 240.89        | 5890            | 1.3   |       |          |      |
|                  | 14               | 233              | 200            | 200.66        | 5540            | 1.5   |       |          |      |
|                  | 18.5             | 176              | 150            | 151.20        | 5040            | 2.0   |       |          |      |
|                  | 9.3              | 351              | 150            | 151.20        | 6500            | 1.0   | CHO73 | 71B5     | 71B4 |
|                  | 11.1             | 292              | 125            | 125.95        | 5980            | 1.2   |       |          |      |
|                  | 14.1             | 230              | 100            | 99.22         | 5520            | 1.5   |       |          |      |
|                  | 18.6             | 175              | 75             | 75.45         | 5040            | 2.0   |       |          |      |
|                  | 23.6             | 141              | 60             | 59.44         | 4660            | 2.5   | CHO72 | 71B5     | 71B4 |
|                  | 29.1             | 114              | 50             | 48.18         | 4340            | 3.1   |       |          |      |
|                  | 9.1              | 358              | 100            | 99.22         | 6400            | 1.0   | CHO73 | 80B5/B14 | 80A6 |
|                  | 11.9             | 273              | 75             | 75.45         | 5840            | 1.3   |       |          |      |
|                  | 15.1             | 219              | 60             | 59.44         | 5390            | 1.6   | CHO72 | 80B5/B14 | 80A6 |
|                  | 18.7             | 178              | 50             | 48.18         | 5030            | 2.0   |       |          |      |
|                  | 22.4             | 148              | 40             | 40.13         | 4730            | 2.4   |       |          |      |
|                  | 29.8             | 112              | 30             | 30.24         | 4310            | 3.1   |       |          |      |
|                  | 9.5              | 343              | 300            | 295.18        | 7990            | 1.3   | CHO83 | 71B5     | 71A2 |
|                  | 11.6             | 280              | 250            | 240.89        | 7470            | 1.8   |       |          |      |
|                  | 14.0             | 233              | 200            | 200.66        | 7030            | 2.1   |       |          |      |
|                  | 18.5             | 176              | 150            | 151.20        | 6390            | 2.8   |       |          |      |
|                  | 22.2             | 146              | 125            | 125.95        | 6010            | 3.4   |       |          |      |
|                  | 5.8              | 559              | 250            | 240.89        | 8300            | 0.9   | CHO83 | 71B5     | 71B4 |
|                  | 7.0              | 466              | 200            | 200.66        | 8300            | 1.1   |       |          |      |
|                  | 9.3              | 351              | 150            | 151.20        | 8050            | 1.4   |       |          |      |
|                  | 11.1             | 292              | 125            | 125.95        | 7580            | 1.7   |       |          |      |
|                  | 14.1             | 230              | 100            | 99.22         | 7000            | 2.2   |       |          |      |
|                  | 18.6             | 175              | 75             | 75.45         | 6390            | 2.9   |       |          |      |
|                  | 22.4             | 145              | 60             | 62.43         | 6000            | 3.1   |       |          |      |

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Quantity, availability and prices with Chiaravalli B2B



## GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | i<br>nominal | i<br>actual | $F_{r2}$<br>[N] | $f_s$ |              |                 |             |
|------------------|------------------|------------------|--------------|-------------|-----------------|-------|--------------|-----------------|-------------|
| <b>0.37</b>      | 28.5             | 114              | 50           | 49.18       | 5540            | 3.1   | <b>CHO83</b> | <b>71B5</b>     | <b>71B4</b> |
|                  | 6.0              | 546              | 150          | 151.20      | 8300            | 0.9   | <b>CHO83</b> | <b>80B5/B14</b> | <b>80A6</b> |
|                  | 7.1              | 455              | 125          | 125.95      | 8300            | 1.1   |              |                 |             |
|                  | 9.1              | 358              | 100          | 99.22       | 8110            | 1.4   |              |                 |             |
|                  | 11.9             | 273              | 75           | 75.45       | 7400            | 1.8   |              |                 |             |
|                  | 15.2             | 218              | 60           | 59.04       | 6820            | 2.1   | <b>CHO82</b> | <b>80B5/B14</b> | <b>80A6</b> |
|                  | 18.7             | 178              | 50           | 48.18       | 6370            | 2.8   |              |                 |             |
| <b>0.55</b>      | 70               | 71               | 40           | 40.09       | 2070            | 1.8   | <b>CHO52</b> | <b>71B5/B14</b> | <b>71B2</b> |
|                  | 95               | 52               | 30           | 29.33       | 1870            | 2.5   |              |                 |             |
|                  | 116              | 42               | 25           | 24.07       | 1750            | 3.1   |              |                 |             |
|                  | 139              | 36               | 20           | 20.21       | 1650            | 3.6   |              |                 |             |
|                  | 35               | 141              | 40           | 40.09       | 2610            | 0.9   | <b>CHO52</b> | <b>80B5/B14</b> | <b>80A4</b> |
|                  | 48               | 103              | 30           | 29.33       | 2350            | 1.3   |              |                 |             |
|                  | 58               | 85               | 25           | 24.07       | 2200            | 1.5   |              |                 |             |
|                  | 69               | 71               | 20           | 20.21       | 2080            | 1.8   |              |                 |             |
|                  | 94               | 53               | 15           | 14.92       | 1880            | 2.5   |              |                 |             |
|                  | 112              | 44               | 12.5         | 12.47       | 1770            | 3.0   |              |                 |             |
|                  | 134              | 37               | 10           | 10.47       | 1670            | 3.5   |              |                 |             |
|                  | 181              | 27               | 7.5          | 7.73        | 1510            | 3.7   |              |                 |             |
|                  | 22.9             | 211              | 125          | 122.22      | 3440            | 0.9   | <b>CHO63</b> | <b>71B5/B14</b> | <b>71B2</b> |
|                  | 27.6             | 175              | 100          | 101.27      | 3230            | 1.1   |              |                 |             |
|                  | 38               | 127              | 75           | 73.33       | 2900            | 1.3   |              |                 |             |
|                  | 46               | 107              | 60           | 60.50       | 2720            | 1.6   | <b>CHO62</b> | <b>71B5/B14</b> | <b>71B2</b> |
|                  | 57               | 86               | 50           | 48.71       | 2530            | 2.3   |              |                 |             |
|                  | 71               | 69               | 40           | 39.29       | 2350            | 2.9   |              |                 |             |
|                  | 92               | 53               | 30           | 30.31       | 2160            | 3.7   |              |                 |             |
|                  | 28.7             | 172              | 50           | 48.71       | 3190            | 1.2   | <b>CHO62</b> | <b>80B5/B14</b> | <b>80A4</b> |
|                  | 36               | 139              | 40           | 39.29       | 2970            | 1.4   |              |                 |             |
|                  | 46               | 107              | 30           | 30.31       | 2720            | 1.9   |              |                 |             |
|                  | 57               | 86               | 25           | 24.44       | 2530            | 2.3   |              |                 |             |
|                  | 69               | 71               | 20           | 20.25       | 2380            | 2.8   |              |                 |             |
|                  | 95               | 52               | 15           | 14.67       | 2130            | 3.7   |              |                 |             |
|                  | 110              | 45               | 12.5         | 12.67       | 2030            | 3.7   |              |                 |             |
|                  | 133              | 37               | 10           | 10.50       | 1910            | 3.6   |              |                 |             |
|                  | 184              | 27               | 7.5          | 7.60        | 1710            | 3.7   |              |                 |             |
|                  | 22.9             | 216              | 40           | 39.29       | 3440            | 0.9   | <b>CHO62</b> | <b>80B5/B14</b> | <b>80B6</b> |
|                  | 29.7             | 166              | 30           | 30.31       | 3150            | 1.2   |              |                 |             |
|                  | 37               | 134              | 25           | 24.44       | 2930            | 1.5   |              |                 |             |
|                  | 44               | 111              | 20           | 20.25       | 2760            | 1.8   |              |                 |             |
|                  | 61               | 80               | 15           | 14.67       | 2470            | 2.4   |              |                 |             |
|                  | 71               | 70               | 12.5         | 12.67       | 2360            | 2.4   |              |                 |             |
|                  | 86               | 58               | 10           | 10.50       | 2210            | 2.3   |              |                 |             |
|                  | 118              | 42               | 7.5          | 7.60        | 1990            | 2.4   |              |                 |             |
|                  | 14               | 346              | 200          | 200.66      | 5540            | 1.0   | <b>CHO73</b> | <b>71B5</b>     | <b>71B2</b> |
|                  | 18.5             | 261              | 150          | 151.20      | 5040            | 1.3   |              |                 |             |



# GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | i<br>nominal | i<br>actual | $F_{r2}$<br>[N] | $f_s$ |              |                 |             |
|------------------|------------------|------------------|--------------|-------------|-----------------|-------|--------------|-----------------|-------------|
| <b>0.55</b>      | 22.2             | 217              | 125          | 125.95      | 4750            | 1.6   | <b>CHO73</b> | <b>71B5</b>     | <b>71B2</b> |
|                  | 28.2             | 171              | 100          | 99.22       | 4380            | 2.0   |              |                 |             |
|                  | 37               | 130              | 75           | 75.45       | 4000            | 2.7   |              |                 |             |
|                  | 45               | 108              | 60           | 62.43       | 3750            | 3.2   |              |                 |             |
|                  | 57               | 85               | 50           | 49.18       | 3470            | 4.1   |              |                 |             |
|                  | 14.1             | 342              | 100          | 99.22       | 5520            | 1.0   | <b>CHO73</b> | <b>80B5/B14</b> | <b>80A4</b> |
|                  | 18.6             | 260              | 75           | 75.45       | 5040            | 1.3   |              |                 |             |
|                  | 23.6             | 210              | 60           | 59.44       | 4660            | 1.7   | <b>CHO72</b> | <b>80B5/B14</b> | <b>80A4</b> |
|                  | 29.1             | 170              | 50           | 48.18       | 4340            | 2.1   |              |                 |             |
|                  | 35               | 142              | 40           | 40.13       | 4080            | 2.5   |              |                 |             |
|                  | 46               | 107              | 30           | 30.24       | 3720            | 3.3   |              |                 |             |
|                  | 15.1             | 326              | 60           | 59.44       | 5390            | 1.1   | <b>CHO72</b> | <b>80B5/B14</b> | <b>80B6</b> |
|                  | 18.7             | 264              | 50           | 48.18       | 5030            | 1.3   |              |                 |             |
|                  | 22.4             | 220              | 40           | 40.13       | 4730            | 1.6   |              |                 |             |
|                  | 29.8             | 166              | 30           | 30.24       | 4310            | 2.1   |              |                 |             |
|                  | 9.5              | 509              | 300          | 295.18      | 7990            | 0.9   | <b>CHO83</b> | <b>71B5</b>     | <b>71B2</b> |
|                  | 11.6             | 416              | 250          | 240.89      | 7470            | 1.2   |              |                 |             |
|                  | 14.0             | 346              | 200          | 200.66      | 7030            | 1.4   |              |                 |             |
|                  | 18.5             | 261              | 150          | 151.20      | 6390            | 1.9   |              |                 |             |
|                  | 22.2             | 217              | 125          | 125.95      | 6010            | 2.3   |              |                 |             |
|                  | 9.3              | 522              | 150          | 151.20      | 8050            | 1.0   | <b>CHO83</b> | <b>80B5/B14</b> | <b>80A4</b> |
|                  | 11.1             | 435              | 125          | 125.95      | 7580            | 1.2   |              |                 |             |
|                  | 14.1             | 342              | 100          | 99.22       | 7000            | 1.5   |              |                 |             |
|                  | 18.6             | 260              | 75           | 75.45       | 6390            | 1.9   |              |                 |             |
|                  | 23.7             | 208              | 60           | 59.04       | 5890            | 2.2   | <b>CHO82</b> | <b>80B5/B14</b> | <b>80A4</b> |
|                  | 29.1             | 170              | 50           | 48.18       | 5500            | 2.9   |              |                 |             |
|                  | 9.1              | 533              | 100          | 99.22       | 8110            | 0.9   | <b>CHO83</b> | <b>80B5/B14</b> | <b>80B6</b> |
|                  | 11.9             | 405              | 75           | 75.45       | 7400            | 1.2   |              |                 |             |
|                  | 15.2             | 324              | 60           | 59.04       | 6820            | 1.4   | <b>CHO82</b> | <b>80B5/B14</b> | <b>80B6</b> |
|                  | 18.7             | 264              | 50           | 48.18       | 6370            | 1.9   |              |                 |             |
|                  | 22.4             | 220              | 40           | 40.13       | 6000            | 2.3   |              |                 |             |
| <b>0.75</b>      | 57               | 117              | 50           | 48.86       | 2220            | 1.1   | <b>CHO52</b> | <b>80B5/B14</b> | <b>80A2</b> |
|                  | 70               | 96               | 40           | 40.09       | 2070            | 1.3   |              |                 |             |
|                  | 95               | 71               | 30           | 29.33       | 1870            | 1.8   |              |                 |             |
|                  | 116              | 58               | 25           | 24.07       | 1750            | 2.2   |              |                 |             |
|                  | 139              | 49               | 20           | 20.21       | 1650            | 2.7   |              |                 |             |
|                  | 188              | 36               | 15           | 14.92       | 1490            | 3.6   |              |                 |             |
|                  | 48               | 141              | 30           | 29.33       | 2350            | 0.9   | <b>CHO52</b> | <b>80B5/B14</b> | <b>80B4</b> |
|                  | 58               | 116              | 25           | 24.07       | 2200            | 1.1   |              |                 |             |
|                  | 69               | 97               | 20           | 20.21       | 2080            | 1.3   |              |                 |             |
|                  | 94               | 72               | 15           | 14.92       | 1880            | 1.8   |              |                 |             |
|                  | 112              | 60               | 12.5         | 12.47       | 1770            | 2.2   |              |                 |             |
|                  | 134              | 50               | 10           | 10.47       | 1670            | 2.6   |              |                 |             |
|                  | 181              | 37               | 7.5          | 7.73        | 1510            | 2.7   |              |                 |             |
|                  |                  |                  |              |             |                 |       |              |                 |             |

2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

Quantity, availability and prices with Chiaravalli B2B



## GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | i<br>nominal | i<br>actual | $F_{r2}$<br>[N] | $f_s$ |       |          |      |
|------------------|------------------|------------------|--------------|-------------|-----------------|-------|-------|----------|------|
| 0.75             | 46               | 145              | 60           | 60.50       | 2720            | 1.2   | CHO62 | 80B5/B14 | 80A2 |
|                  | 57               | 117              | 50           | 48.71       | 2530            | 1.7   |       |          |      |
|                  | 71               | 94               | 40           | 39.29       | 2350            | 2.1   |       |          |      |
|                  | 92               | 73               | 30           | 30.31       | 2160            | 2.7   |       |          |      |
|                  | 115              | 59               | 25           | 24.44       | 2010            | 3.4   |       |          |      |
|                  | 138              | 49               | 20           | 20.25       | 1890            | 4.1   |       |          |      |
|                  | 28.7             | 234              | 50           | 48.71       | 3190            | 0.9   | CHO62 | 80B5/B14 | 80B4 |
|                  | 36               | 189              | 40           | 39.29       | 2970            | 1.1   |       |          |      |
|                  | 46               | 146              | 30           | 30.31       | 2720            | 1.4   |       |          |      |
|                  | 57               | 118              | 25           | 24.44       | 2530            | 1.7   |       |          |      |
|                  | 69               | 97               | 20           | 20.25       | 2380            | 2.1   |       |          |      |
|                  | 95               | 71               | 15           | 14.67       | 2130            | 2.8   |       |          |      |
|                  | 18.5             | 356              | 150          | 151.20      | 5040            | 1.0   | CHO73 | 80B5/B14 | 80A2 |
|                  | 22.2             | 296              | 125          | 125.95      | 4750            | 1.2   |       |          |      |
|                  | 28.2             | 234              | 100          | 99.22       | 4380            | 1.5   |       |          |      |
|                  | 37               | 178              | 75           | 75.45       | 4000            | 2.0   |       |          |      |
|                  | 47               | 143              | 60           | 59.44       | 3690            | 2.4   | CHO72 | 80B5/B14 | 80A2 |
|                  | 58               | 116              | 50           | 48.18       | 3440            | 3.0   |       |          |      |
|                  | 70               | 96               | 40           | 40.13       | 3240            | 3.6   |       |          |      |
|                  | 23.6             | 286              | 60           | 59.44       | 4660            | 1.2   | CHO72 | 80B5/B14 | 80B4 |
|                  | 29.1             | 232              | 50           | 48.18       | 3440            | 1.5   |       |          |      |
|                  | 35               | 193              | 40           | 40.13       | 4080            | 1.8   |       |          |      |
|                  | 46               | 145              | 30           | 30.24       | 3720            | 2.4   |       |          |      |
|                  | 56               | 121              | 25           | 25.19       | 3500            | 2.9   |       |          |      |
|                  | 18.7             | 360              | 50           | 48.18       | 5030            | 1.0   | CHO72 | 90B5/B14 | 90S6 |
|                  | 22.4             | 300              | 40           | 40.13       | 4730            | 1.2   |       |          |      |
|                  | 29.8             | 226              | 30           | 30.24       | 4310            | 1.5   |       |          |      |
|                  | 36               | 188              | 25           | 25.19       | 4050            | 1.9   |       |          |      |
|                  | 45               | 148              | 20           | 19.84       | 3740            | 2.4   |       |          |      |
|                  | 11.6             | 567              | 250          | 240.89      | 7470            | 0.9   | CHO83 | 80B5/B14 | 80A2 |
|                  | 14.0             | 472              | 200          | 200.66      | 7030            | 1.1   |       |          |      |
|                  | 18.5             | 356              | 150          | 151.20      | 6390            | 1.4   |       |          |      |
|                  | 22.2             | 296              | 125          | 125.95      | 6010            | 1.7   |       |          |      |
|                  | 28.2             | 234              | 100          | 99.22       | 5550            | 2.1   |       |          |      |
|                  | 37               | 178              | 75           | 75.45       | 5070            | 2.8   |       |          |      |
|                  | 14.1             | 467              | 100          | 99.22       | 7000            | 1.1   | CHO83 | 80B5/B14 | 80B4 |
|                  | 18.6             | 355              | 75           | 75.45       | 6390            | 1.4   |       |          |      |
|                  | 23.7             | 284              | 60           | 59.04       | 5890            | 1.6   | CHO82 | 80B5/B14 | 80B4 |
|                  | 29.1             | 232              | 50           | 48.18       | 5500            | 2.2   |       |          |      |
|                  | 35               | 193              | 40           | 40.13       | 5170            | 2.6   |       |          |      |
|                  | 15.2             | 442              | 60           | 59.04       | 6820            | 1.0   | CHO82 | 90B5/B14 | 90S6 |
|                  | 18.7             | 360              | 50           | 48.18       | 6370            | 1.4   |       |          |      |
|                  | 22.4             | 300              | 40           | 40.13       | 6000            | 1.7   |       |          |      |
|                  | 29.8             | 226              | 30           | 30.24       | 5460            | 2.2   |       |          |      |
|                  |                  |                  |              |             |                 |       |       |          |      |



# GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$<br>nominal | $i$<br>actual | $F_{r2}$<br>[N] | $f_s$ |       |          |      |
|------------------|------------------|------------------|----------------|---------------|-----------------|-------|-------|----------|------|
| 1.1              | 70               | 141              | 40             | 40.09         | 2070            | 0.9   | CHO52 | 80B5/B14 | 80B2 |
|                  | 95               | 103              | 30             | 29.33         | 1870            | 1.3   |       |          |      |
|                  | 116              | 85               | 25             | 24.07         | 1750            | 1.5   |       |          |      |
|                  | 139              | 71               | 20             | 20.21         | 1650            | 1.8   |       |          |      |
|                  | 188              | 53               | 15             | 14.92         | 1490            | 2.5   |       |          |      |
|                  | 225              | 44               | 12.5           | 12.47         | 1400            | 3.0   |       |          |      |
|                  | 267              | 37               | 10             | 10.47         | 1320            | 3.5   |       |          |      |
|                  | 362              | 27               | 7.5            | 7.73          | 1200            | 3.7   |       |          |      |
|                  | 69               | 143              | 20             | 20.21         | 2080            | 0.9   | CHO52 | 90B5/B14 | 90S4 |
|                  | 94               | 105              | 15             | 14.92         | 1880            | 1.2   |       |          |      |
|                  | 112              | 88               | 12.5           | 12.47         | 1770            | 1.5   |       |          |      |
|                  | 134              | 74               | 10             | 10.47         | 1670            | 1.8   |       |          |      |
|                  | 181              | 55               | 7.5            | 7.73          | 1510            | 1.8   |       |          |      |
|                  | 72               | 137              | 12.5           | 12.47         | 2050            | 1.0   | CHO52 | 90B5/B14 | 90L6 |
|                  | 86               | 115              | 10             | 10.47         | 1930            | 1.1   |       |          |      |
|                  | 57               | 172              | 50             | 48.71         | 2530            | 1.2   | CHO62 | 80B5/B14 | 80B2 |
|                  | 71               | 139              | 40             | 39.29         | 2350            | 1.4   |       |          |      |
|                  | 92               | 107              | 30             | 30.31         | 2160            | 1.9   |       |          |      |
|                  | 115              | 86               | 25             | 24.44         | 2010            | 2.3   |       |          |      |
|                  | 138              | 71               | 20             | 20.25         | 1890            | 2.8   |       |          |      |
|                  | 191              | 52               | 15             | 14.67         | 1690            | 3.7   |       |          |      |
|                  | 221              | 45               | 12.5           | 12.67         | 1610            | 3.7   |       |          |      |
|                  | 267              | 37               | 10             | 10.50         | 1510            | 3.6   |       |          |      |
|                  | 368              | 27               | 7.5            | 7.60          | 1710            | 1.9   |       |          |      |
|                  | 46               | 214              | 30             | 30.31         | 2720            | 0.9   | CHO62 | 90B5/B14 | 90S4 |
|                  | 57               | 172              | 25             | 24.44         | 2530            | 1.2   |       |          |      |
|                  | 69               | 143              | 20             | 20.25         | 2380            | 1.4   |       |          |      |
|                  | 95               | 103              | 15             | 14.67         | 2130            | 1.8   |       |          |      |
|                  | 110              | 89               | 12.5           | 12.67         | 2030            | 1.8   |       |          |      |
|                  | 133              | 74               | 10             | 10.50         | 1910            | 1.8   |       |          |      |
|                  | 184              | 54               | 7.5            | 7.60          | 1360            | 3.7   |       |          |      |
|                  | 44               | 222              | 20             | 20.25         | 2760            | 0.9   | CHO62 | 90B5/B14 | 90L6 |
|                  | 61               | 161              | 15             | 14.67         | 2470            | 1.2   |       |          |      |
|                  | 71               | 139              | 12.5           | 12.67         | 2360            | 1.2   |       |          |      |
|                  | 86               | 115              | 10             | 10.50         | 2210            | 1.2   |       |          |      |
|                  | 118              | 83               | 7.5            | 7.60          | 1990            | 1.2   |       |          |      |
|                  | 29.1             | 340              | 50             | 48.18         | 4340            | 1.0   | CHO72 | 90B5/B14 | 90S4 |
|                  | 35               | 283              | 40             | 40.13         | 4080            | 1.2   |       |          |      |
|                  | 46               | 213              | 30             | 30.24         | 3720            | 1.6   |       |          |      |
|                  | 56               | 178              | 25             | 25.19         | 3500            | 2.0   |       |          |      |
|                  | 71               | 140              | 20             | 19.84         | 3230            | 2.5   |       |          |      |
|                  | 93               | 106              | 15             | 15.09         | 2950            | 3.3   |       |          |      |
|                  | 112              | 88               | 12.5           | 12.49         | 2770            | 4.0   |       |          |      |
|                  | 29.8             | 332              | 30             | 30.24         | 4310            | 1.1   | CHO72 | 90B5/B14 | 90L6 |
|                  | 36               | 276              | 25             | 25.19         | 4050            | 1.3   |       |          |      |

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## GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$<br>nominal | $i$<br>actual | $F_{r2}$<br>[N] | $f_s$ |       |          |      |
|------------------|------------------|------------------|----------------|---------------|-----------------|-------|-------|----------|------|
| 1.1              | 45               | 218              | 20             | 19.84         | 3740            | 1.6   | CHO72 | 90B5/B14 | 90L6 |
|                  | 60               | 166              | 15             | 15.09         | 3410            | 2.1   |       |          |      |
|                  | 72               | 137              | 12.5           | 12.49         | 3210            | 2.6   |       |          |      |
|                  | 18.5             | 522              | 150            | 151.20        | 6390            | 1.0   | CHO83 | 80B5/B14 | 80B2 |
|                  | 22.2             | 435              | 125            | 125.95        | 6010            | 1.2   |       |          |      |
|                  | 28.2             | 342              | 100            | 99.22         | 5550            | 1.5   |       |          |      |
|                  | 37               | 260              | 75             | 75.45         | 5070            | 1.9   |       |          |      |
|                  | 47               | 208              | 60             | 59.04         | 4670            | 2.2   | CHO82 | 80B5/B14 | 80B2 |
|                  | 58               | 170              | 50             | 48.18         | 4360            | 2.9   |       |          |      |
|                  | 18.6             | 521              | 75             | 75.45         | 6390            | 1.0   | CHO83 | 90B5/B14 | 90S4 |
|                  | 23.7             | 416              | 60             | 59.04         | 5890            | 1.1   | CHO82 | 90B5/B14 | 90S4 |
|                  | 29.1             | 340              | 50             | 48.18         | 5500            | 1.5   |       |          |      |
|                  | 35               | 283              | 40             | 40.13         | 5170            | 1.8   |       |          |      |
|                  | 46               | 213              | 30             | 30.24         | 4710            | 2.3   |       |          |      |
|                  | 18.7             | 529              | 50             | 48.18         | 6370            | 0.9   | CHO82 | 90B5/B14 | 90L6 |
|                  | 22.4             | 440              | 40             | 40.13         | 6000            | 1.1   |       |          |      |
|                  | 29.8             | 332              | 30             | 30.24         | 5460            | 1.5   |       |          |      |
|                  | 36               | 276              | 25             | 25.19         | 5130            | 1.8   |       |          |      |
|                  | 45               | 218              | 20             | 19.84         | 4740            | 2.3   |       |          |      |
| 1.5              | 116              | 116              | 25             | 24.07         | 1750            | 1.1   | CHO52 | 90B5/B14 | 90S2 |
|                  | 139              | 97               | 20             | 20.21         | 1650            | 1.3   |       |          |      |
|                  | 188              | 72               | 15             | 14.92         | 1490            | 1.8   |       |          |      |
|                  | 225              | 60               | 12.5           | 12.47         | 1400            | 2.0   |       |          |      |
|                  | 267              | 50               | 10             | 10.47         | 1320            | 2.2   |       |          |      |
|                  | 362              | 37               | 7.5            | 7.73          | 1200            | 2.6   |       |          |      |
|                  | 94               | 144              | 15             | 14.92         | 1880            | 0.9   | CHO52 | 90B5/B14 | 90L4 |
|                  | 112              | 120              | 12.5           | 12.47         | 1770            | 1.6   |       |          |      |
|                  | 134              | 101              | 10             | 10.47         | 1670            | 1.1   |       |          |      |
|                  | 181              | 74               | 7.5            | 7.73          | 1510            | 1.3   |       |          |      |
|                  | 57               | 234              | 50             | 48.71         | 2530            | 0.9   | CHO62 | 90B5/B14 | 90S2 |
|                  | 71               | 189              | 40             | 39.29         | 2350            | 1.1   |       |          |      |
|                  | 92               | 146              | 30             | 30.31         | 2160            | 1.4   |       |          |      |
|                  | 115              | 118              | 25             | 24.44         | 2010            | 1.7   |       |          |      |
|                  | 138              | 97               | 20             | 20.25         | 1890            | 2.0   |       |          |      |
|                  | 191              | 71               | 15             | 14.67         | 1690            | 2.8   |       |          |      |
|                  | 57               | 235              | 25             | 24.44         | 2530            | 0.9   | CHO62 | 90B5/B14 | 90L4 |
|                  | 69               | 195              | 20             | 20.25         | 2380            | 1.0   |       |          |      |
|                  | 95               | 141              | 15             | 14.67         | 2130            | 1.4   |       |          |      |
|                  | 110              | 122              | 12.5           | 12.67         | 2030            | 1.4   |       |          |      |
|                  | 133              | 101              | 10             | 10.50         | 1910            | 1.7   |       |          |      |
|                  | 184              | 73               | 7.5            | 7.60          | 1710            | 2.1   |       |          |      |
|                  | 47               | 286              | 60             | 59.44         | 3690            | 1.2   | CHO72 | 90B5/B14 | 90S2 |
|                  | 58               | 232              | 50             | 48.18         | 3440            | 1.5   |       |          |      |
|                  | 70               | 193              | 40             | 40.13         | 3240            | 1.8   |       |          |      |
|                  | 93               | 145              | 30             | 30.24         | 2950            | 2.4   |       |          |      |



# GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | i<br>nominal | i<br>actual | $F_{r2}$<br>[N] | $f_s$ |              |                  |              |
|------------------|------------------|------------------|--------------|-------------|-----------------|-------|--------------|------------------|--------------|
| <b>1.5</b>       | 35               | 386              | 40           | 40.13       | 4080            | 0.9   | <b>CHO72</b> | <b>90B5/B14</b>  | <b>90L4</b>  |
|                  | 46               | 291              | 30           | 30.24       | 3720            | 1.2   |              |                  |              |
|                  | 56               | 242              | 25           | 25.19       | 3500            | 1.4   |              |                  |              |
|                  | 71               | 191              | 20           | 19.84       | 3230            | 1.8   |              |                  |              |
|                  | 93               | 145              | 15           | 15.09       | 2950            | 2.4   |              |                  |              |
|                  | 112              | 120              | 12.5         | 12.49       | 2770            | 2.8   |              |                  |              |
|                  | 142              | 95               | 10           | 9.84        | 2550            | 3.3   |              |                  |              |
|                  | 47               | 284              | 60           | 59.04       | 4670            | 1.6   | <b>CHO82</b> | <b>90B5/B14</b>  | <b>90S2</b>  |
|                  | 58               | 232              | 50           | 48.18       | 4360            | 2.2   |              |                  |              |
|                  | 29.1             | 463              | 50           | 48.18       | 5500            | 1.1   | <b>CHO82</b> | <b>90B5/B14</b>  | <b>90L4</b>  |
|                  | 35               | 386              | 40           | 40.13       | 5170            | 1.3   |              |                  |              |
|                  | 46               | 291              | 30           | 30.24       | 4710            | 1.7   |              |                  |              |
|                  | 56               | 242              | 25           | 25.19       | 4430            | 2.1   |              |                  |              |
|                  | 71               | 191              | 20           | 19.84       | 4090            | 2.6   |              |                  |              |
| <b>2.2</b>       | 139              | 143              | 20           | 20.21       | 1650            | 0.9   | <b>CHO52</b> | <b>90B5/B14</b>  | <b>90L2</b>  |
|                  | 188              | 105              | 15           | 14.92       | 1490            | 1.2   |              |                  |              |
|                  | 225              | 88               | 12.5         | 12.47       | 1400            | 1.4   |              |                  |              |
|                  | 267              | 74               | 10           | 10.47       | 1320            | 1.5   |              |                  |              |
|                  | 362              | 55               | 7.5          | 7.73        | 1200            | 1.8   |              |                  |              |
|                  | 92               | 214              | 30           | 30.31       | 2160            | 0.9   | <b>CHO62</b> | <b>90B5/B14</b>  | <b>90L2</b>  |
|                  | 115              | 172              | 25           | 24.44       | 2010            | 1.2   |              |                  |              |
|                  | 138              | 143              | 20           | 20.25       | 1890            | 1.4   |              |                  |              |
|                  | 191              | 103              | 15           | 14.67       | 1690            | 1.8   |              |                  |              |
|                  | 221              | 89               | 12.5         | 12.67       | 1610            | 1.8   |              |                  |              |
|                  | 267              | 74               | 10           | 10.50       | 1510            | 1.8   |              |                  |              |
|                  | 368              | 54               | 7.5          | 7.60        | 1360            | 1.9   |              |                  |              |
|                  | 58               | 340              | 50           | 48.18       | 3440            | 1.0   | <b>CHO72</b> | <b>90B5/B14</b>  | <b>90L2</b>  |
|                  | 70               | 283              | 40           | 40.13       | 3240            | 1.2   |              |                  |              |
|                  | 93               | 213              | 30           | 30.24       | 2950            | 1.6   |              |                  |              |
|                  | 111              | 178              | 25           | 25.19       | 2770            | 2.0   |              |                  |              |
|                  | 56               | 355              | 25           | 25.19       | 3500            | 1.0   | <b>CHO72</b> | <b>100B5/B14</b> | <b>100A4</b> |
|                  | 71               | 280              | 20           | 19.84       | 3230            | 1.3   |              |                  |              |
|                  | 93               | 213              | 15           | 15.09       | 2950            | 1.6   |              |                  |              |
|                  | 112              | 176              | 12.5         | 12.49       | 2770            | 1.9   |              |                  |              |
|                  | 142              | 139              | 10           | 9.84        | 2550            | 2.3   |              |                  |              |
|                  | 187              | 106              | 7.5          | 7.48        | 2330            | 2.9   |              |                  |              |
|                  | 47               | 416              | 60           | 59.04       | 4670            | 1.1   | <b>CHO82</b> | <b>90B5/B14</b>  | <b>90L2</b>  |
|                  | 58               | 340              | 50           | 48.18       | 4360            | 1.5   |              |                  |              |
|                  | 70               | 283              | 40           | 40.13       | 4110            | 1.8   |              |                  |              |
|                  | 93               | 213              | 30           | 30.24       | 3740            | 2.3   |              |                  |              |
|                  | 35               | 566              | 40           | 40.13       | 5170            | 0.9   | <b>CHO82</b> | <b>100B5/B14</b> | <b>100A4</b> |
|                  | 46               | 427              | 30           | 30.24       | 4710            | 1.2   |              |                  |              |
|                  | 56               | 355              | 25           | 25.19       | 4430            | 1.4   |              |                  |              |
|                  | 71               | 280              | 20           | 19.84       | 4090            | 1.8   |              |                  |              |
|                  | 93               | 213              | 15           | 15.09       | 3730            | 2.3   |              |                  |              |

2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

Quantity, availability and prices with Chiaravalli B2B



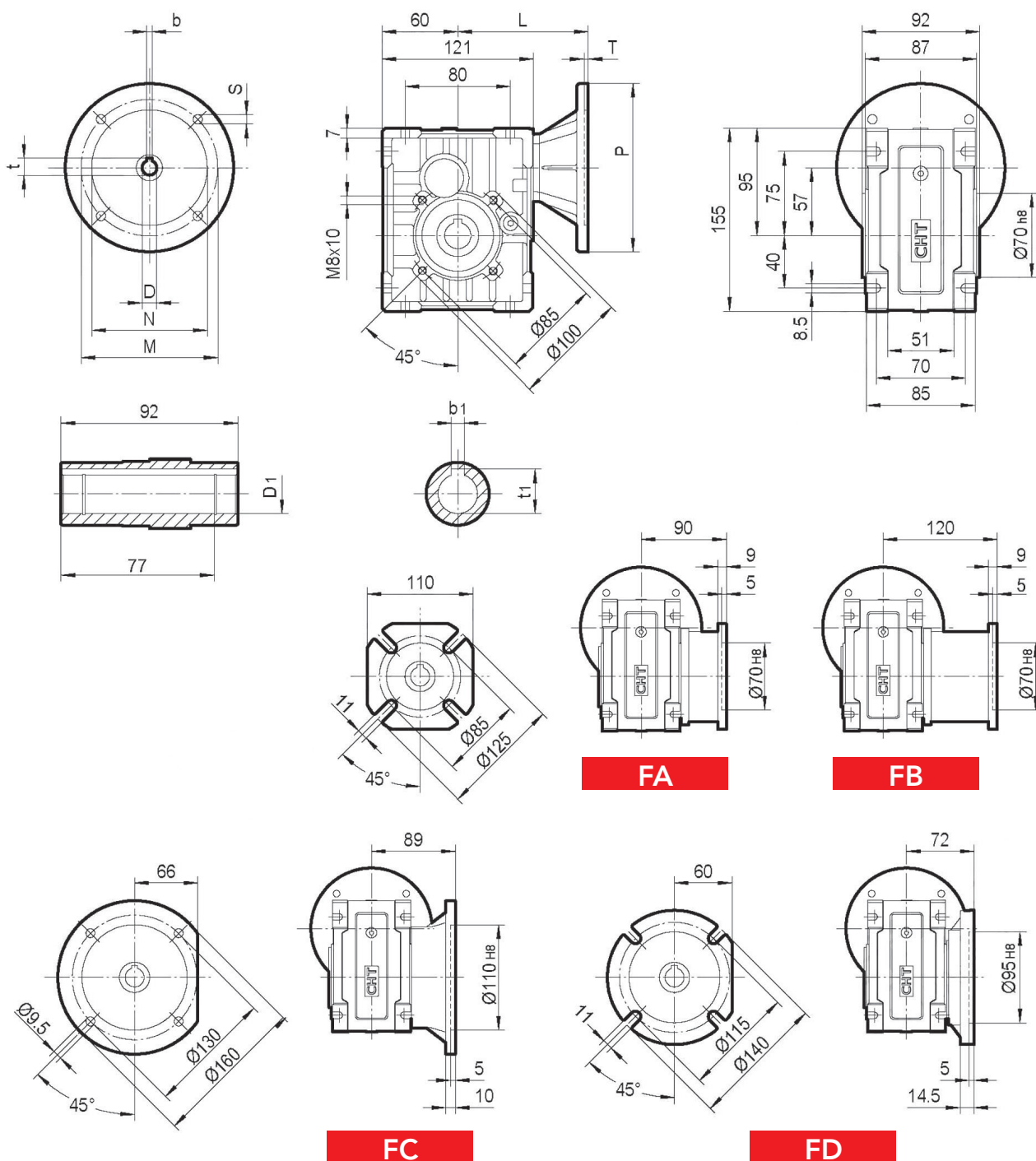
## GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$<br>nominal | $i$<br>actual | $F_{r2}$<br>[N] | $f_s$ |              |                  |               |
|------------------|------------------|------------------|----------------|---------------|-----------------|-------|--------------|------------------|---------------|
| <b>2.2</b>       | 112              | 176              | 12.5           | 12.49         | 3510            | 2.6   | <b>CHO82</b> | <b>100B5/B14</b> | <b>100A4</b>  |
| <b>3</b>         | 70               | 386              | 40             | 40.13         | 3240            | 0.9   | <b>CHO72</b> | <b>100B5/B14</b> | <b>100L2</b>  |
|                  | 93               | 291              | 30             | 30.24         | 2950            | 1.2   |              |                  |               |
|                  | 111              | 242              | 25             | 25.19         | 2770            | 1.4   |              |                  |               |
|                  | 141              | 191              | 20             | 19.84         | 2560            | 1.8   |              |                  |               |
|                  | 186              | 145              | 15             | 15.09         | 2340            | 2.4   |              |                  |               |
|                  | 224              | 120              | 12.5           | 12.49         | 2190            | 2.9   |              |                  |               |
|                  | 285              | 95               | 10             | 9.84          | 2030            | 3.7   |              |                  |               |
|                  | 374              | 72               | 7.5            | 7.48          | 1850            | 3.9   |              |                  |               |
|                  | 93               | 290              | 15             | 15.09         | 2950            | 1.2   | <b>CHO72</b> | <b>100B5/B14</b> | <b>100LB4</b> |
|                  | 112              | 240              | 12.5           | 12.49         | 2770            | 1.5   |              |                  |               |
|                  | 142              | 189              | 10             | 9.84          | 2550            | 1.8   |              |                  |               |
|                  | 187              | 144              | 7.5            | 7.48          | 2330            | 1.9   |              |                  |               |
|                  | 47               | 568              | 60             | 59.04         | 4670            | 0.8   | <b>CHO82</b> | <b>100B5/B14</b> | <b>100L2</b>  |
|                  | 58               | 463              | 50             | 48.18         | 4360            | 1.1   |              |                  |               |
|                  | 70               | 386              | 40             | 40.13         | 4110            | 1.3   |              |                  |               |
|                  | 93               | 291              | 30             | 30.24         | 3740            | 1.7   |              |                  |               |
|                  | 111              | 242              | 25             | 25.19         | 3520            | 2.1   |              |                  |               |
|                  | 141              | 191              | 20             | 19.84         | 3250            | 2.6   |              |                  |               |
|                  | 56               | 485              | 25             | 25.19         | 4430            | 1.0   | <b>CHO82</b> | <b>100B5/B14</b> | <b>100LB4</b> |
|                  | 71               | 382              | 20             | 19.84         | 4090            | 1.3   |              |                  |               |
|                  | 93               | 290              | 15             | 15.09         | 3730            | 1.7   |              |                  |               |
|                  | 112              | 240              | 12.5           | 12.49         | 3510            | 1.9   |              |                  |               |
|                  | 142              | 189              | 10             | 9.84          | 3240            | 2.4   |              |                  |               |
| <b>4</b>         | 111              | 323              | 25             | 25.19         | 2770            | 1.1   | <b>CHO72</b> | <b>112B5/B14</b> | <b>100LB2</b> |
|                  | 141              | 254              | 20             | 19.84         | 2560            | 1.4   |              |                  |               |
|                  | 186              | 194              | 15             | 15.09         | 2340            | 1.8   |              |                  |               |
|                  | 224              | 160              | 12.5           | 12.49         | 2190            | 2.2   |              |                  |               |
|                  | 285              | 126              | 10             | 9.84          | 2030            | 2.5   |              |                  |               |
|                  | 374              | 96               | 7.5            | 7.48          | 1850            | 2.9   |              |                  |               |
|                  | 112              | 320              | 12.5           | 12.49         | 2770            | 1.0   | <b>CHO72</b> | <b>112B5/B14</b> | <b>112M4</b>  |
|                  | 142              | 252              | 10             | 9.84          | 2550            | 1.3   |              |                  |               |
|                  | 187              | 192              | 7.5            | 7.48          | 2330            | 1.5   |              |                  |               |
|                  | 70               | 515              | 40             | 40.13         | 4110            | 1.0   | <b>CHO82</b> | <b>112B5/B14</b> | <b>100LB2</b> |
|                  | 93               | 388              | 30             | 30.24         | 3740            | 1.3   |              |                  |               |
|                  | 111              | 323              | 25             | 25.19         | 3520            | 2.0   |              |                  |               |
|                  | 141              | 254              | 20             | 19.84         | 3250            | 2.0   |              |                  |               |
|                  | 186              | 194              | 15             | 15.09         | 2960            | 2.6   |              |                  |               |
|                  | 71               | 509              | 20             | 19.84         | 4090            | 1.0   | <b>CHO82</b> | <b>112B5/B14</b> | <b>112M4</b>  |
|                  | 93               | 387              | 15             | 15.09         | 3730            | 1.3   |              |                  |               |
|                  | 112              | 320              | 12.5           | 12.49         | 3510            | 1.4   |              |                  |               |
|                  | 142              | 252              | 10             | 9.84          | 3240            | 1.8   |              |                  |               |
|                  | 187              | 192              | 7.5            | 7.48          | 2950            | 2.3   |              |                  |               |
|                  |                  |                  |                |               |                 |       |              |                  |               |
|                  |                  |                  |                |               |                 |       |              |                  |               |



# DIMENSION SHEET

## CHO 52



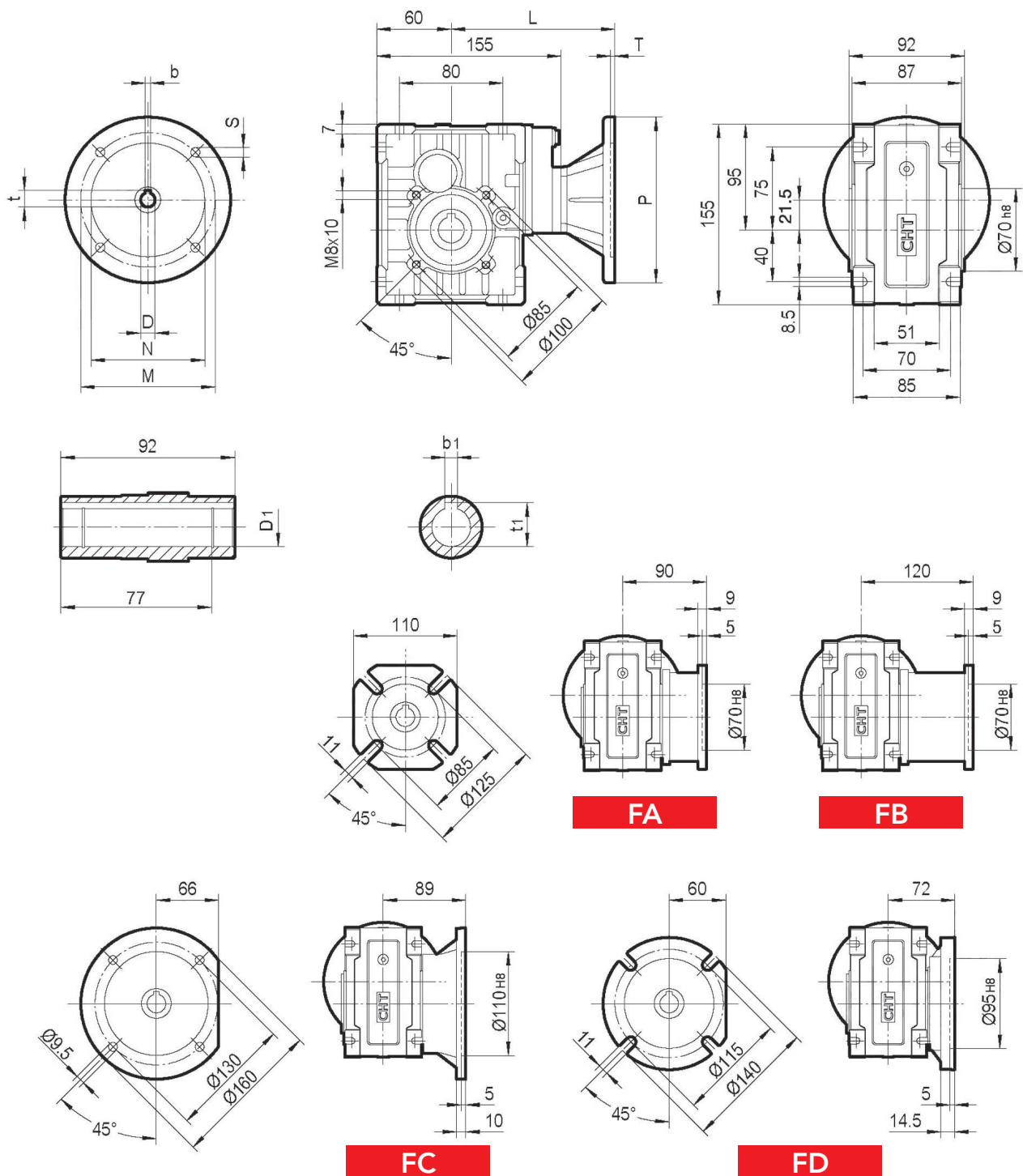
| IEC   | DE8 | b | t    | P   | M   | N   | S  | T | L   | D1 H8             | b1 | t1    |
|-------|-----|---|------|-----|-----|-----|----|---|-----|-------------------|----|-------|
| 63B5  | 11  | 4 | 12.8 | 140 | 115 | 95  | 9  | 4 | 106 | 20*               | 6* | 22.8* |
| 71B5  | 14  | 5 | 16.3 | 160 | 130 | 110 | 9  | 4 | 113 | 25                | 8  | 28.3  |
| 71B14 | 14  | 5 | 16.3 | 105 | 85  | 70  | 7  | 4 | 113 |                   |    |       |
| 80B5  | 19  | 6 | 21.8 | 200 | 165 | 130 | 11 | 4 | 133 |                   |    |       |
| 80B14 | 19  | 6 | 21.8 | 120 | 100 | 80  | 7  | 4 | 133 | * only on request |    |       |
| 90B14 | 24  | 8 | 27.3 | 140 | 115 | 95  | 9  | 4 | 133 |                   |    |       |
|       |     |   |      |     |     |     |    |   |     |                   |    |       |
|       |     |   |      |     |     |     |    |   |     |                   |    |       |

Weight 3.5 Kg excluding motor



# DIMENSION SHEET

## CHO 53



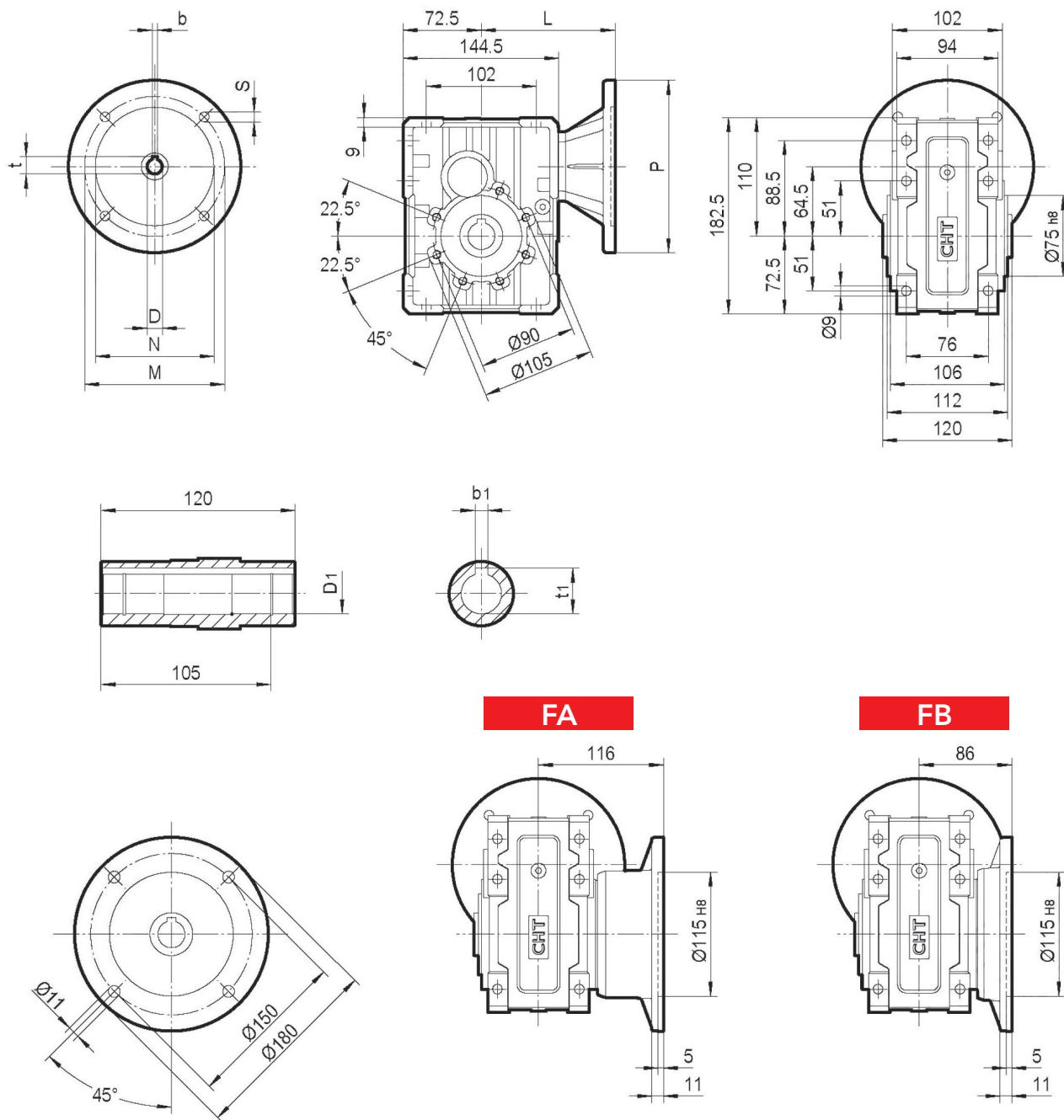
| IEC   | DE8 | b | t    | P   | M   | N   | S  | T | L   | D1 H8             | b1 | t1    |
|-------|-----|---|------|-----|-----|-----|----|---|-----|-------------------|----|-------|
| 63B5  | 11  | 4 | 12.8 | 140 | 115 | 95  | 9  | 4 | 140 | 20*               | 6* | 22.8* |
| 71B5  | 14  | 5 | 16.3 | 160 | 130 | 110 | 9  | 4 | 147 | 25                | 8  | 28.3  |
| 71B14 | 14  | 5 | 16.3 | 105 | 85  | 70  | 7  | 4 | 147 |                   |    |       |
| 80B5  | 19  | 6 | 21.8 | 200 | 165 | 130 | 11 | 4 | 167 |                   |    |       |
| 80B14 | 19  | 6 | 21.8 | 120 | 100 | 80  | 7  | 4 | 167 | * only on request |    |       |
| 90B14 | 24  | 8 | 27.3 | 140 | 115 | 95  | 9  | 4 | 167 |                   |    |       |
|       |     |   |      |     |     |     |    |   |     |                   |    |       |
|       |     |   |      |     |     |     |    |   |     |                   |    |       |

Weight 3.5 Kg excluding motor



# DIMENSION SHEET

## CHO 62



FA

FB

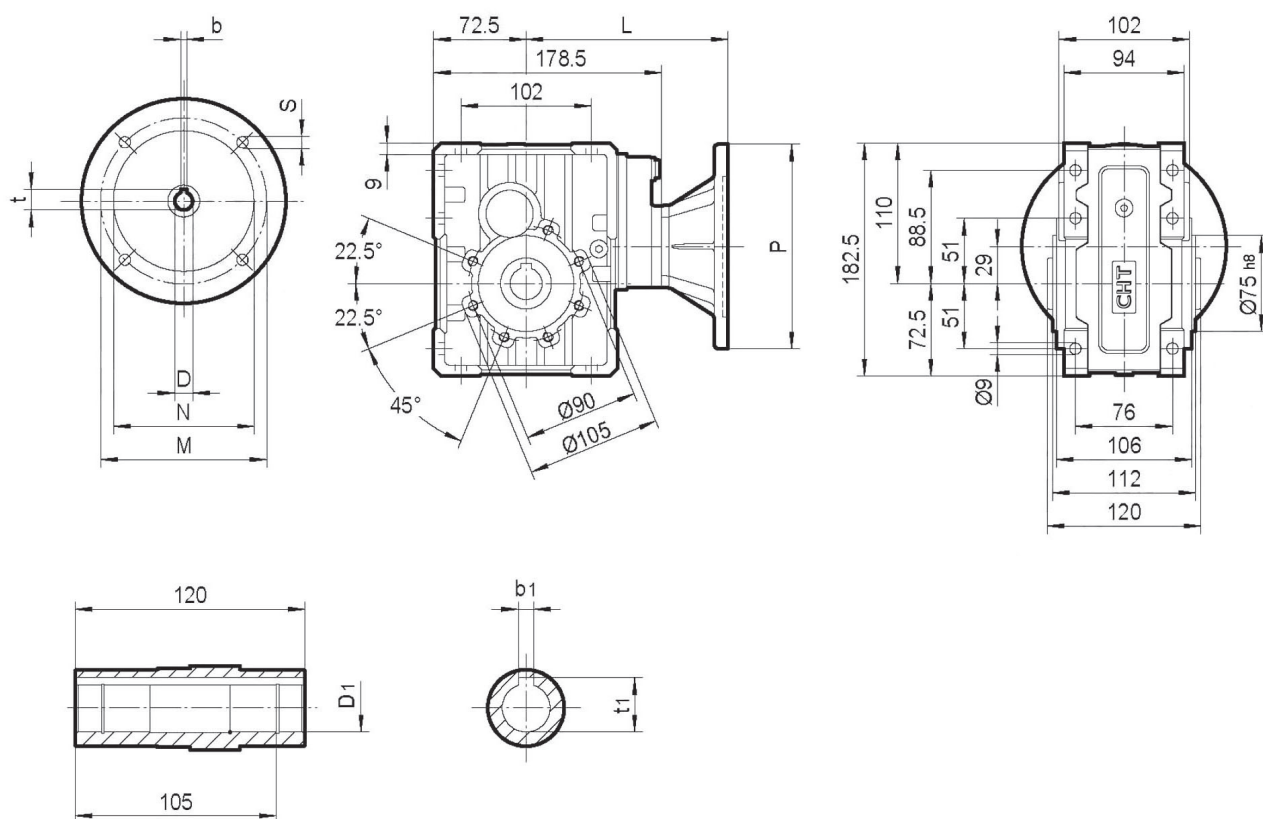
| IEC   | DE8 | b | t    | P   | M   | N   | S  | T | L   | D1 H8 | b1 | t1   |
|-------|-----|---|------|-----|-----|-----|----|---|-----|-------|----|------|
| 63B5  | 11  | 4 | 12.8 | 140 | 115 | 95  | 9  | 4 | 117 | 25    | 8  | 28.3 |
| 71B5  | 14  | 5 | 16.3 | 160 | 130 | 110 | 9  | 4 | 124 |       |    |      |
| 71B14 | 14  | 5 | 16.3 | 105 | 85  | 70  | 7  | 4 | 124 |       |    |      |
| 80B5  | 19  | 6 | 21.8 | 200 | 165 | 130 | 11 | 4 | 144 |       |    |      |
| 80B14 | 19  | 6 | 21.8 | 120 | 100 | 80  | 7  | 4 | 144 |       |    |      |
| 90B5  | 24  | 8 | 27.3 | 200 | 165 | 130 | 11 | 4 | 144 |       |    |      |
| 90B14 | 24  | 8 | 27.3 | 140 | 115 | 95  | 9  | 4 | 144 |       |    |      |

Weight 6.5 Kg excluding motor



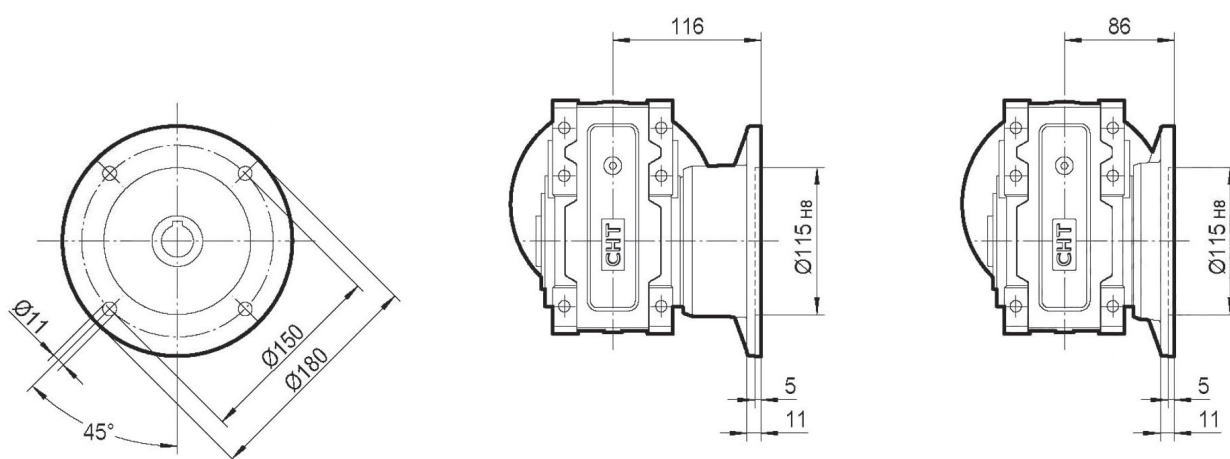
# DIMENSION SHEET

## CHO 63



FA

FB



| IEC   | DE8 | b | t    | P   | M   | N   | S  | T | L   | D1 H8 | b1 | t1   |
|-------|-----|---|------|-----|-----|-----|----|---|-----|-------|----|------|
| 63B5  | 11  | 4 | 12.8 | 140 | 115 | 95  | 9  | 4 | 151 | 25    | 8  | 28.3 |
| 71B5  | 14  | 5 | 16.3 | 160 | 130 | 110 | 9  | 4 | 158 |       |    |      |
| 71B14 | 14  | 5 | 16.3 | 105 | 85  | 70  | 7  | 4 | 158 |       |    |      |
| 80B5  | 19  | 6 | 21.8 | 200 | 165 | 130 | 11 | 4 | 178 |       |    |      |
| 80B14 | 19  | 6 | 21.8 | 120 | 100 | 80  | 7  | 4 | 178 |       |    |      |
| 90B5  | 24  | 8 | 27.3 | 200 | 165 | 130 | 11 | 4 | 178 |       |    |      |
| 90B14 | 24  | 8 | 27.3 | 140 | 115 | 95  | 9  | 4 | 178 |       |    |      |

Weight 6.5 Kg excluding motor

[illegible]

| IEC        | D <sub>E8</sub> | b | t    | P   | M   | N   | S    | T   | L   | D <sub>1 H8</sub> | b <sub>1</sub> | t <sub>1</sub> |
|------------|-----------------|---|------|-----|-----|-----|------|-----|-----|-------------------|----------------|----------------|
| 63B5       | 11              | 4 | 12.8 | 140 | 115 | 95  | 9    | 4   | 139 | 28*               | 8*             | 31.3*          |
| 71B5       | 14              | 5 | 16.3 | 160 | 130 | 110 | 9    | 4   | 146 | 30                | 8              | 33.3           |
| 80B5       | 19              | 6 | 21.8 | 200 | 165 | 130 | 11   | 4   | 166 |                   |                |                |
| 80B14      | 19              | 6 | 21.8 | 120 | 100 | 80  | 7    | 4   | 166 |                   |                |                |
| 90B5       | 24              | 8 | 27.3 | 200 | 165 | 130 | 11   | 4   | 166 |                   |                |                |
| 90B14      | 24              | 8 | 27.3 | 140 | 115 | 95  | 9    | 4   | 166 |                   |                |                |
| 100/112B5  | 28              | 8 | 31.3 | 250 | 215 | 180 | 13.5 | 4.5 | 176 | * only on request |                |                |
| 100/112B14 | 28              | 8 | 31.3 | 160 | 130 | 110 | 9    | 4.5 | 176 |                   |                |                |

Weight 9.5 Kg excluding motor



Technical drawing of the CHT 1000 pump assembly, showing various views and dimensions:

- Top View:** Dimensions include 87, 214, 126, 46.5, 16.5, 9, 22.5°, 22.5°, 45°, Ø110, Ø125, L, P, 113, 104, 220.5, 133.5, 109.5, 63, 30.5, 87, 63, Ø10.5, 82, 117, 123, 127, Ø90 H8.
- Front View (FA):** Dimensions include 127, 112, D1, b1, t1.
- Side View (FB):** Dimensions include Ø12, 45°, Ø165, Ø200.
- End View (FC):** Dimensions include 111, Ø130 H8, 5, 12, Ø11, 45°, Ø130, Ø160, Ø110 H8, 5, 12, 85.

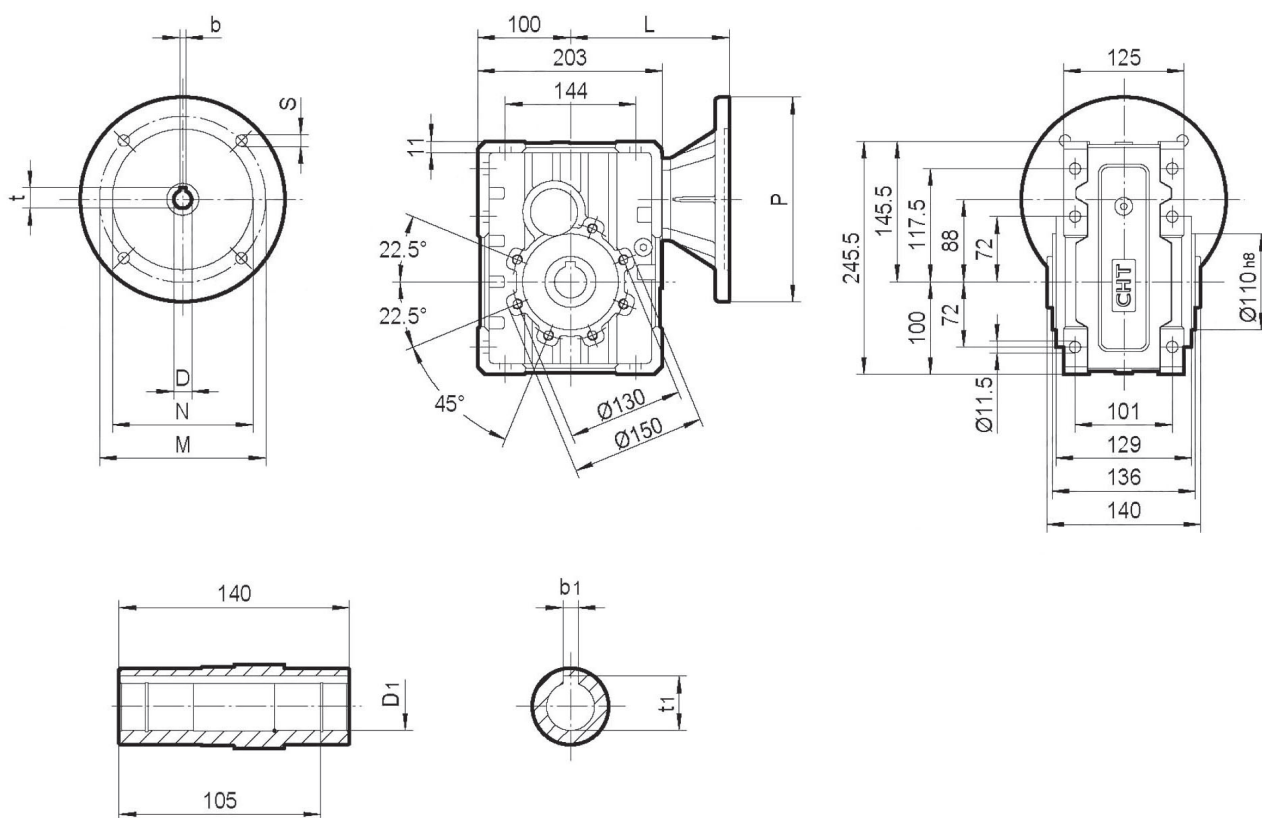
| IEC        | D <sub>E8</sub> | b | t    | P   | M   | N   | S    | T   | L   | D <sub>1 H8</sub> | b <sub>1</sub> | t <sub>1</sub> |
|------------|-----------------|---|------|-----|-----|-----|------|-----|-----|-------------------|----------------|----------------|
| 63B5       | 11              | 4 | 12.8 | 140 | 115 | 95  | 9    | 4   | 179 | 28*               | 8*             | 31.3*          |
| 71B5       | 14              | 5 | 16.3 | 160 | 130 | 110 | 9    | 4   | 186 | 30                | 8              | 33.3           |
| 80B5       | 19              | 6 | 21.8 | 200 | 165 | 130 | 11   | 4   | 206 |                   |                |                |
| 80B14      | 19              | 6 | 21.8 | 120 | 100 | 80  | 7    | 4   | 206 |                   |                |                |
| 90B5       | 24              | 8 | 27.3 | 200 | 165 | 130 | 11   | 4   | 206 |                   |                |                |
| 90B14      | 24              | 8 | 27.3 | 140 | 115 | 95  | 9    | 4   | 206 |                   |                |                |
| 100/112B5  | 28              | 8 | 31.3 | 250 | 215 | 180 | 13.5 | 4.5 | 216 | * only on request |                |                |
| 100/112B14 | 28              | 8 | 31.3 | 160 | 130 | 110 | 9    | 4.5 | 216 |                   |                |                |

Weight 9.5 Kg excluding motor



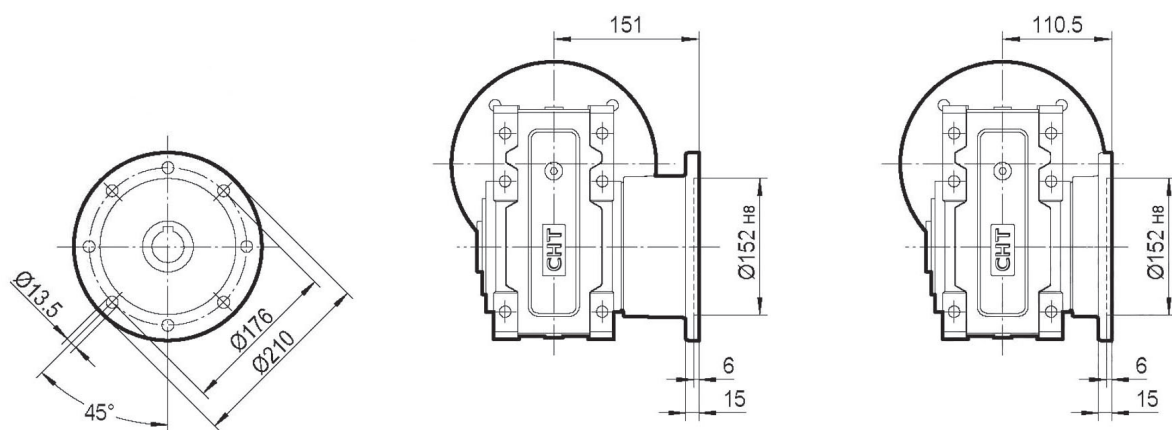
# DIMENSION SHEET

## CHO 82



FA

FB



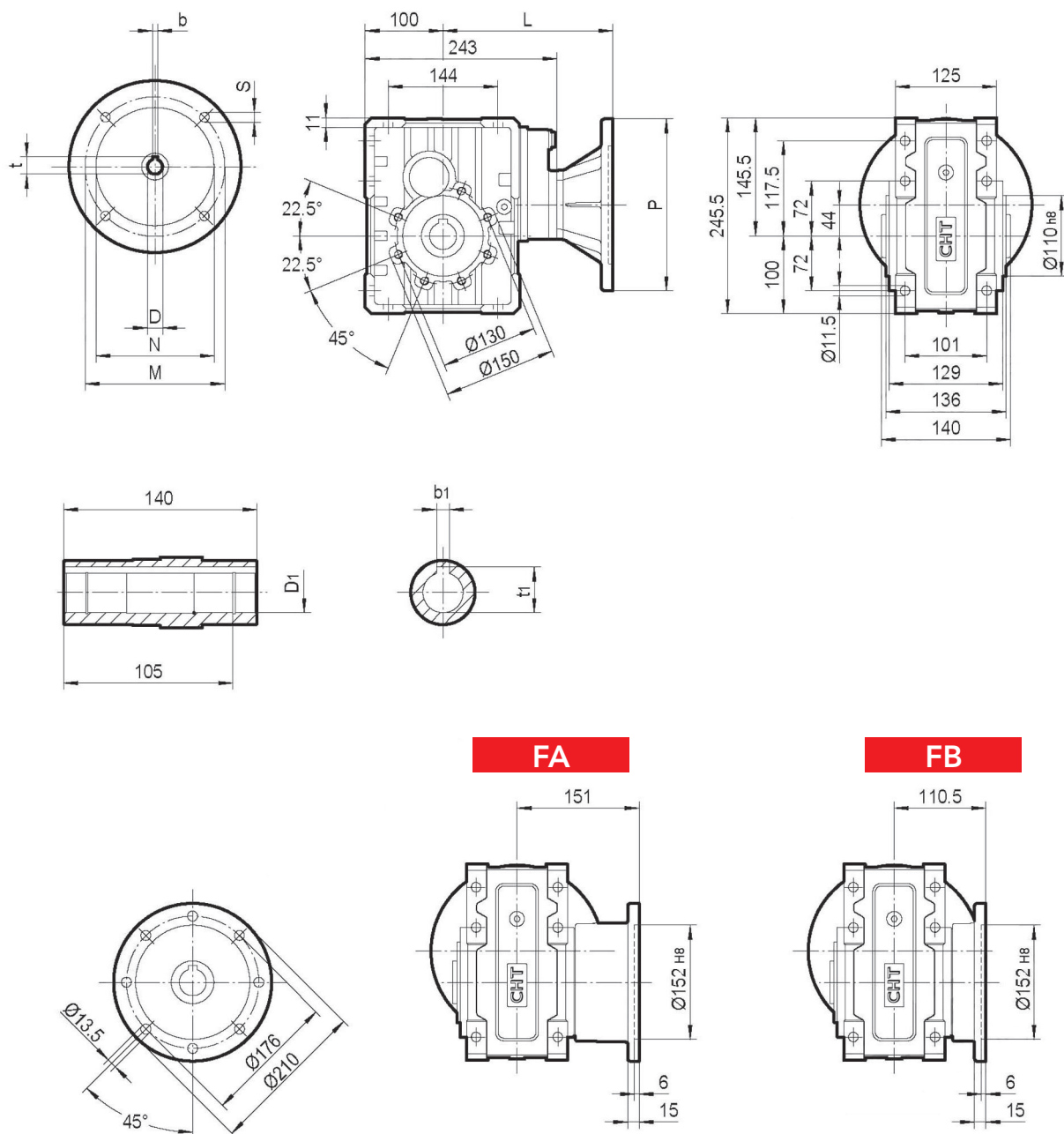
| IEC        | DE8 | b | t    | P   | M   | N   | S    | T   | L   | D1 H8 | b1 | t1   |
|------------|-----|---|------|-----|-----|-----|------|-----|-----|-------|----|------|
| 63B5       | 11  | 4 | 12.8 | 140 | 115 | 95  | 9    | 4   | 155 | 35    | 10 | 38.3 |
| 71B5       | 14  | 5 | 16.3 | 160 | 130 | 110 | 9    | 4   | 162 |       |    |      |
| 80B5       | 19  | 6 | 21.8 | 200 | 165 | 130 | 11   | 4   | 182 |       |    |      |
| 80B14      | 19  | 6 | 21.8 | 120 | 100 | 80  | 7    | 4   | 182 |       |    |      |
| 90B5       | 24  | 8 | 27.3 | 200 | 165 | 130 | 11   | 4   | 182 |       |    |      |
| 90B14      | 24  | 8 | 27.3 | 140 | 115 | 95  | 9    | 4   | 182 |       |    |      |
| 100/112B5  | 28  | 8 | 31.3 | 250 | 215 | 180 | 13.5 | 4.5 | 192 |       |    |      |
| 100/112B14 | 28  | 8 | 31.3 | 160 | 130 | 110 | 9    | 4.5 | 192 |       |    |      |

Weight 13.5 Kg excluding motor



# DIMENSION SHEET

## CHO 83



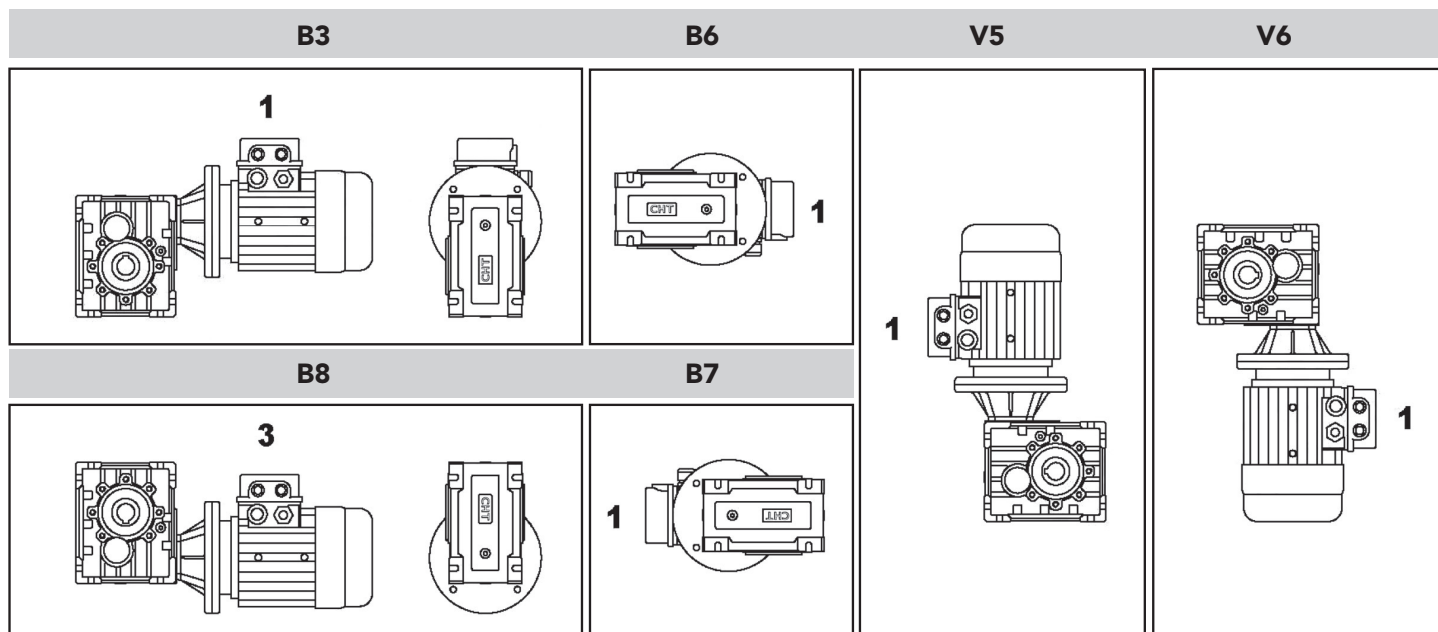
| IEC        | DE8 | b | t    | P   | M   | N   | S    | T   | L   | D1 H8 | b1 | t1   |
|------------|-----|---|------|-----|-----|-----|------|-----|-----|-------|----|------|
| 63B5       | 11  | 4 | 12.8 | 140 | 115 | 95  | 9    | 4   | 195 | 35    | 10 | 38.3 |
| 71B5       | 14  | 5 | 16.3 | 160 | 130 | 110 | 9    | 4   | 202 |       |    |      |
| 80B5       | 19  | 6 | 21.8 | 200 | 165 | 130 | 11   | 4   | 222 |       |    |      |
| 80B14      | 19  | 6 | 21.8 | 120 | 100 | 80  | 7    | 4   | 222 |       |    |      |
| 90B5       | 24  | 8 | 27.3 | 200 | 165 | 130 | 11   | 4   | 222 |       |    |      |
| 90B14      | 24  | 8 | 27.3 | 140 | 115 | 95  | 9    | 4   | 222 |       |    |      |
| 100/112B5  | 28  | 8 | 31.3 | 250 | 215 | 180 | 13.5 | 4.5 | 232 |       |    |      |
| 100/112B14 | 28  | 8 | 31.3 | 160 | 130 | 110 | 9    | 4.5 | 232 |       |    |      |

Weight 13.5 Kg excluding motor



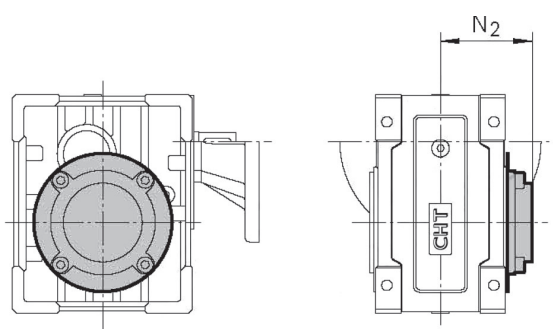
## ACCESSORIES

### MOUNTING POSITIONS



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## COVER



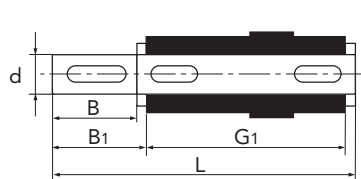
| TYPE      | $N_2$ |
|-----------|-------|
| CHO 52/53 | 59    |
| CHO 62/63 | 70    |
| CHO 72/73 | 85.5  |
| CHO 82/83 | 93.5  |



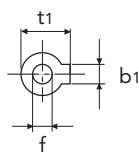
# DIMENSION SHEET

## ACCESSORIES

### OUTPUT SHAFT



**SS**



**DS**

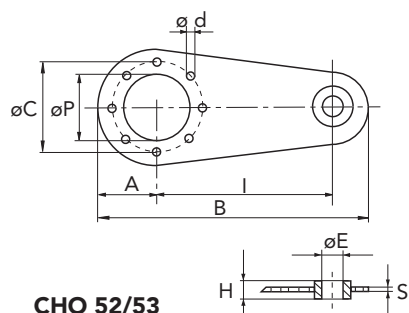
| TYPE                | $d_{h6}$ | B  | B <sub>1</sub> | G <sub>1</sub> | L   | L <sub>1</sub> | f   | b <sub>1</sub> | t <sub>1</sub> |
|---------------------|----------|----|----------------|----------------|-----|----------------|-----|----------------|----------------|
| <b>CHO 52/53</b>    | 25       | 50 | 53.5           | 92             | 153 | 199            | M10 | 8              | 28             |
| <b>CHO 62/63</b>    | 25       | 60 | 65             | 120            | 192 | 246.4          | M8  | 8              | 28             |
| <b>CHO 72/73-28</b> | 28       | 60 | 65             | 127            | 199 | 255            | M8  | 8              | 31             |
| <b>CHO 72/73-30</b> | 30       | 60 | 65             | 127            | 199 | 255            | M10 | 8              | 33             |
| <b>CHO 82/83</b>    | 35       | 60 | 65             | 140            | 214 | 268            | M12 | 10             | 38             |



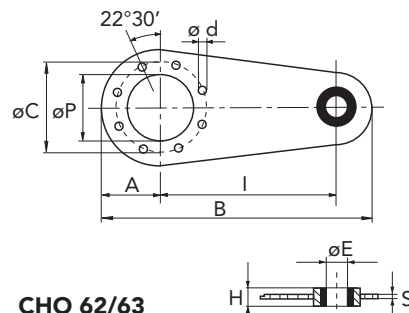
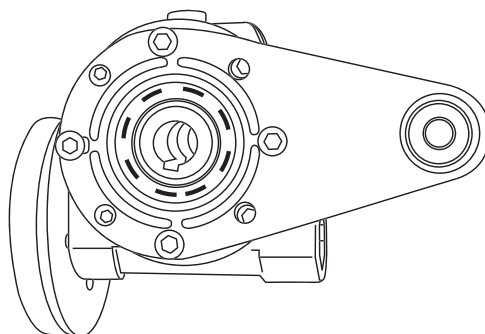
## TORQUE ARM

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| TYPE             | I   | A    | B     | Ø P | Ø C | Ø d | H  | Ø E | S |
|------------------|-----|------|-------|-----|-----|-----|----|-----|---|
| <b>CHO 52/53</b> | 100 | 50   | 168   | 70  | 85  | 9   | 14 | 10  | 4 |
| <b>CHO 62/63</b> | 150 | 52.5 | 232.5 | 75  | 90  | 9   | 20 | 10  | 6 |
| <b>CHO 72/73</b> | 200 | 62.5 | 300   | 90  | 110 | 9   | 25 | 20  | 6 |
| <b>CHO 82/83</b> | 200 | 75   | 312,5 | 110 | 130 | 11  | 25 | 20  | 6 |
|                  |     |      |       |     |     |     |    |     |   |
|                  |     |      |       |     |     |     |    |     |   |



**CHO 52/53**



**CHO 62/63**  
**CHO 72/73**  
**CHO 82/83**

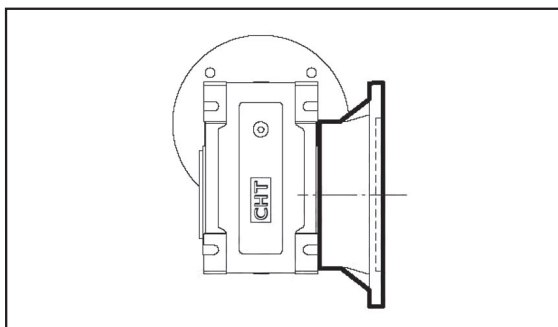
The anchoring point of the torque arm is equipped with a vibration resistant bushing.



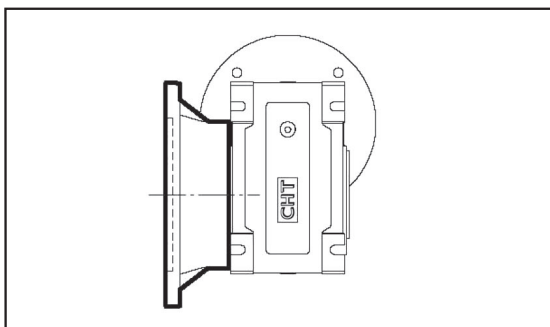
# FLANGE, SHAFTS AND TERMINAL BOXES MOUNTING POSITION

## POSITION DIAGRAM FOR OUTPUT

FA1, FB1, FC1, FD1, FE1



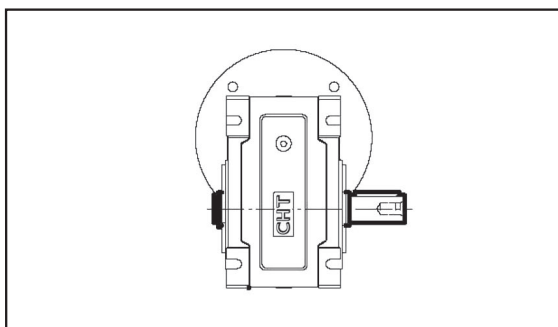
FA2, FB2, FC2, FD2, FE2



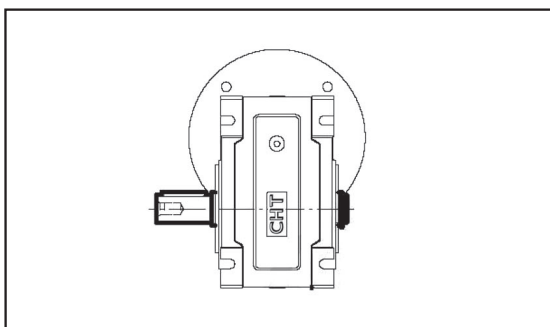
Unless specified otherwise, the reduction unit is supplied with the flange in pos. F.1 referred to position B3.

## POSITION DIAGRAM FOR SINGLE OUTPUT

SS1

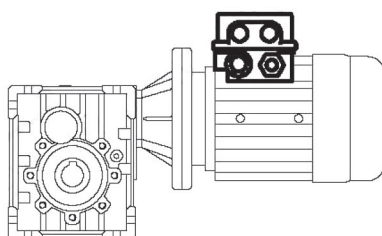
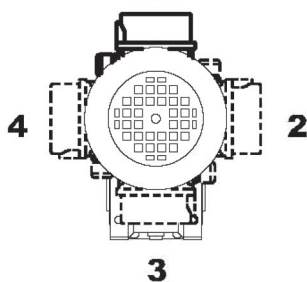


SS2

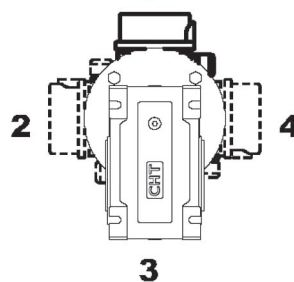


## POSITION OF TERMINAL BOX

1 Standard



1 Standard



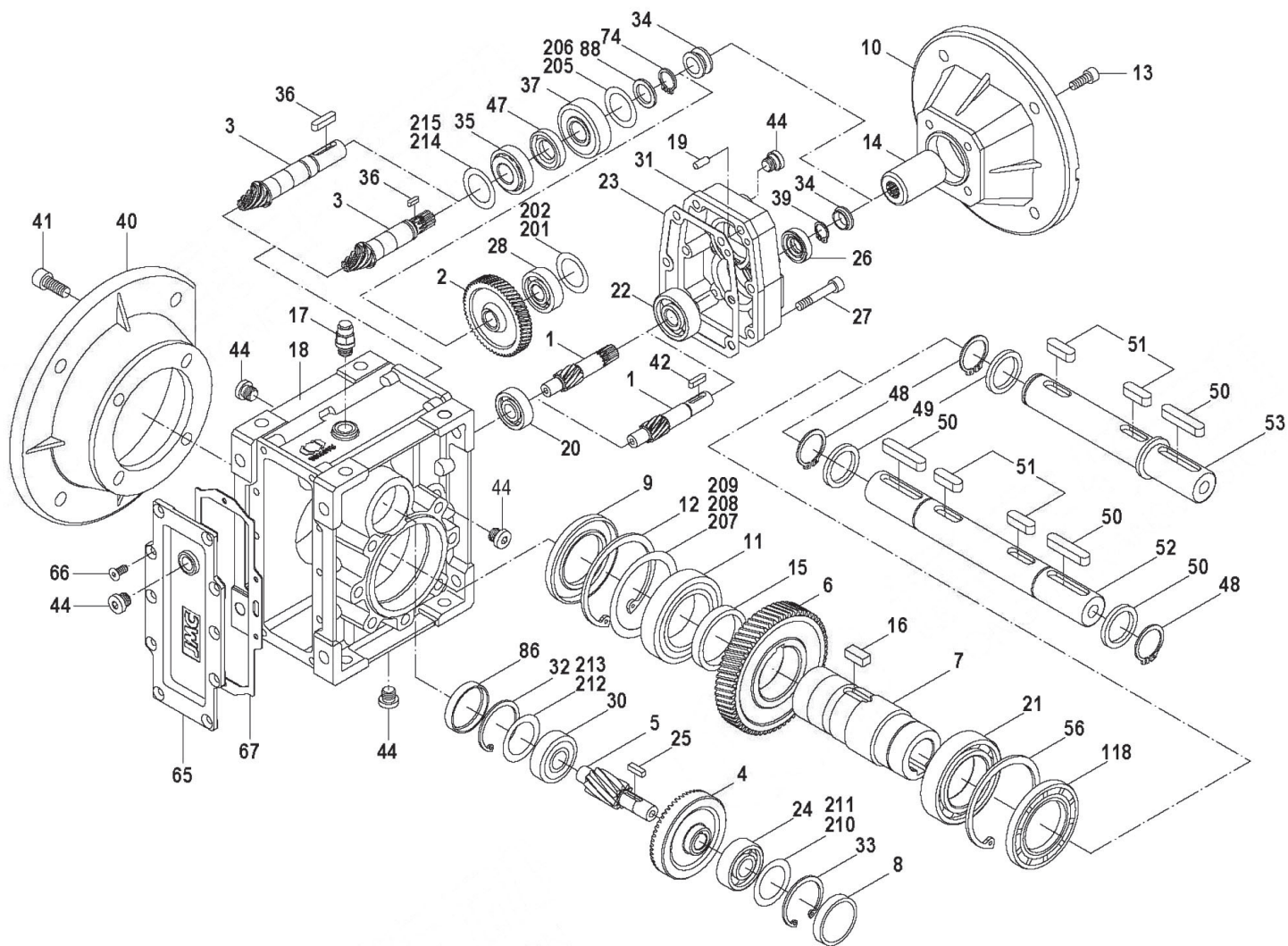
In the case of specific requirements, when ordering, specify the position of the terminal box as shown in the diagram.

2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

Quantity, availability and prices with Chiaravalli B2B



## EXPLODED DRAWING AND SPARE PARTS LIST



|    |                  |     |                     |
|----|------------------|-----|---------------------|
| 1  | PINION           | 39  | SHAFT-CIRCLIP       |
| 2  | GEAR             | 40  | OUTPUT FLANGE       |
| 3  | PINION SHAFT     | 41  | INNER HEX SCREW     |
| 4  | GEAR             | 42  | KEY                 |
| 5  | PINION SHAFT     | 44  | OIL PLUG            |
| 6  | GEAR             | 47  | OIL SEAL            |
| 7  | HOLLOW SHAFT     | 48  | SHAFT-CIRCLIP       |
| 8  | CLOSING CAP      | 49  | GASKET              |
| 9  | OIL SEAL         | 50  | KEY                 |
| 10 | INPUT FLANGE     | 51  | KEY                 |
| 11 | BEARING          | 52  | DOUBLE OUTPUT SHAFT |
| 12 | HOLE-CIRCLIP     | 53  | DOUBLE OUTPUT SHAFT |
| 13 | INNER HEX SCREW  | 56  | HOLE-CIRCLIP        |
| 14 | INPUT SHAFT      | 65  | GEARCASE COVER      |
| 15 | SPACER           | 66  | HEXAGON SCREW       |
| 16 | KEY              | 67  | RUBBER GASKET       |
| 17 | BREATHER VALVE   | 74  | SHAFT-CIRCLIP       |
| 18 | GEARCASE         | 86  | CLOSING CAP         |
| 19 | STIFTE           | 88  | WASHER              |
| 20 | BEARING          | 118 | OIL SEAL            |
| 21 | BEARING          | 201 | SHIM RING           |
| 22 | BEARING          | 202 | SHIM RING           |
| 23 | HOUSING GASKET   | 205 | SHIM RING           |
| 24 | BEARING          | 206 | SHIM RING           |
| 25 | KEY              | 207 | SHIM RING           |
| 26 | OIL SEAL         | 208 | SHIM RING           |
| 27 | INNER HEX SCREW  | 209 | SHIM RING           |
| 28 | BEARING          | 210 | SHIM RING           |
| 30 | BEARING          | 211 | SHIM RING           |
| 31 | 3 STAGE GEARCASE | 212 | SHIM RING           |
| 32 | HOLE-CIRCLIP     | 213 | SHIM RING           |
| 33 | HOLE-CIRCLIP     | 214 | SHIM RING           |
| 34 | RUBBER RING      | 215 | SHIM RING           |
| 35 | BEARING          | 216 | SHIM RING           |
| 36 | KEY              | 217 | SHIM RING           |
| 37 | BEARING          |     |                     |



### INSTALLATION

- The data shown on the identification name plate must correspond to the gearbox ordered.
- The oil level must correspond to the quantity foreseen for the assembly position requested (see catalogue).
- All of the other gearboxes are supplied complete with permanent synthetic oil in a quantity that is sufficient for any assembly position.
- The gearbox must be fixed on a flat surface that is sufficiently rigid in order to avoid any vibration.
- The gearbox and the axis of the machine to be driven must be perfectly aligned. In the event that knocks, overloading or blockage of the machine are foreseen, the client must install a limiting device, joints, overload cut-out etc.
- Coupling with pinions, joints, pulleys and other parts must be done after the parts have been cleaned and knocks should be avoided while assembling as they could damage the bearings and other internal parts.
- In the event that the motor is supplied by the client, he must check that the flange and shaft tolerances correspond to a "normal" class; our motors satisfy this requirement.
- Check that the fixing screws for the gear and the related accessories are correctly tightened.
- Take suitable measures to protect the groups from any aggressive atmospheric agents.
- Where foreseen, protect rotating parts from any possible contact with the operators.
- If the gears are painted, protect the oil seals and the machined surfaces gearboxes.
- All of the gears are painted RAL 9022 grey.

### OPERATION AND RUNNING-IN

- To obtain the best performance the gearboxes must first be run-in by gradually increasing the power in the first few hours of operation, in this phase an increase in temperature is considered normal.
- In the event of defective operation, noise, oil leakage, etc. stop the gear immediately and, when possible, remove the cause. Alternatively, send the piece to our factory to be controlled.

### MAINTENANCE see page 93

- The helical gearboxes are lubricated with mineral, oil do not mix with synthetic oil. Check oil level regularly.

### WAREHOUSE STORAGE

- If the warehouse storage will be for a long time, more than 3 months, the shafts and machined surfaces should be protected using antioxidants and the oil seals should be greased.

### HANDLING

- Care must be taken not to damage the oil seals and the machined surfaces when handling the groups.

### DISPOSAL OF PACKAGING

- The packaging in which our gears are delivered should be sent to specialised companies for recycling if possible.