

# **GEAR BOXES AND MOTORS**



# 60 YEARS OF HISTORY

The goal pursued by Chiaravalli during more than 60 years of history is to become the Italian and European technological center of excellence in the field of mechanical transmission.





# The MANUFACTURER distributor

Our Logistic Center in Cantalupa is a coordinated set of informatic functions intended for storage, picking, packaging and delivery of products.

All the functions have been automatized at the highest levels available today.

The Chiaravalli logistic group has established itself over the years becoming an example of excellence for all the European companies working in the same sector.



WE MANUFACTURE

## SPECIAL COMPONENTS

Production of special components with high complexity and extremely high precision



## MECHANICAL WORM SCREW JACKS

Customized and Standard products as per our catalogue



## STANDARD TRANSMISSION

Standard products as per our catalogue



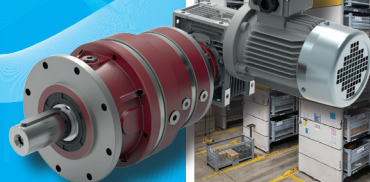
## URB BEARINGS



## BELTS



## GEAR BOXES & ELECTRIC MOTORS



WE DISTRIBUTE

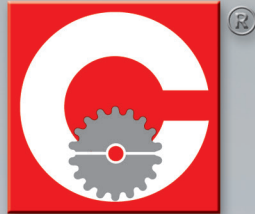
[chiaravalli.com](http://chiaravalli.com)





CHIARAVALLI GROUP world:  
much more than a collection of perfects mechanical components

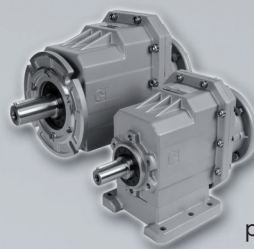




# CHIARAVALLI

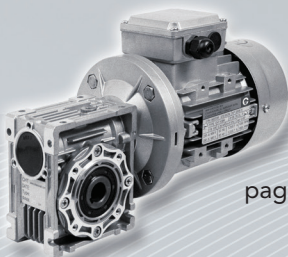
## GROUP *SpA*

**CHC**



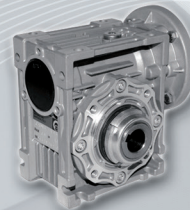
page 5

**CHM**



page 25

**CHML**



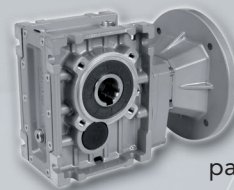
page 56

**CH**



page 58

**CHO**



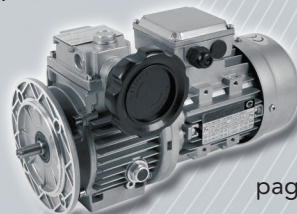
page 88

**CHA**



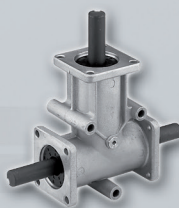
page 121

**CHV**



page 136

**BEVEL  
GEARS**



page 141

**ELECTRIC  
MOTORS**



page 153





|                                                                |                |
|----------------------------------------------------------------|----------------|
| Symbols                                                        | page 2         |
| General information                                            | page 2         |
| Radial loads Fr - Lubrication - Painting                       | page 3         |
| Service factor Fs                                              | page 4         |
| V6/B8 mounting position                                        | page 4         |
| <b>■ CHC SERIES HELICAL GEAR UNITS</b>                         | <b>page 5</b>  |
| Introduction                                                   | page 6         |
| Assembling possibility                                         | page 7         |
| General information                                            | page 8         |
| Radial loads Fr                                                | page 9         |
| Lubrication - Mounting position and terminal box orientation   | page 10        |
| Ratio and iec motor adapters                                   | page 11        |
| Gear unit selection tables                                     | page 12        |
| Performance parameter $f \cdot s = 1$                          | page 18        |
| Dimension sheet CHC 16 - CHC 20                                | page 19        |
| Dimension sheet CHC 25                                         | page 20        |
| Dimension sheet CHC 30                                         | page 21        |
| Dimension sheet CHC 35 - CHC 40                                | page 22        |
| Exploded drawing and spare parts list                          | page 23        |
| Use and maintenance instructions                               | page 24        |
| <b>■ CHM-CHMR-CHME-CHMRE</b>                                   |                |
| <b>WORM GEARED MOTORS AND WORM GEAR UNITS</b>                  | <b>page 25</b> |
| CHM worm geared motors and worm gear units                     | page 26        |
| Premessa - Introduction                                        | page 27        |
| Quantity of oil in litres - Motor mounting flanges             | page 28        |
| CHM/CHMR/CHME/CHMRE Designation - Example order                | page 29        |
| Mounting position                                              | page 30        |
| Performance and dimensions CHM 025/CHM 150 with 4-pole motors  | page 31/40     |
| CHMR Dimensions                                                | page 41        |
| CHPC/CHM worm gear with pre-stage module                       | page 42        |
| Performance CHTPC/CHM with 4-pole motors                       | page 43        |
| CHPC/CHM Dimensions                                            | page 44        |
| Double worm gears CHM/CHM-CHME                                 | page 45        |
| CHM/CHMR/CHME/CHMRE Designation - Example order                | page 46        |
| Execution                                                      | page 47        |
| Performance CHM/CHM with 4-pole motors                         | page 48        |
| CHM-CHM Dimensions of combined gears                           | page 49        |
| Torque arm - Single and double output shaft kit                | page 50        |
| Cover - BRM-S and BRM-D reduction bushings kit                 | page 51        |
| Radial loads on the output shaft CHM                           | page 52        |
| Radial loads on the centre line of the input shaft             | page 53        |
| Exploded drawing and spare parts list                          | page 54        |
| Use and maintenance instructions                               | page 55        |
| <b>■ CHML WORM GEARBOXES WITH TORQUE LIMITER</b>               | <b>page 56</b> |
| Design features - Dimensions                                   | page 57        |
| <b>■ CH WORM GEARED MOTORS AND WORM GEAR UNITS</b>             | <b>page 58</b> |
| Introduction - Lubrication                                     | page 59        |
| Quantity of oil in litres - Motor mounting flanges - New Model | page 60        |
| CH 03/04/05 Worm geared motors and worm gear units             | page 61        |
| CH - CH..P 03/04/05 Designation - Example order                | page 62        |
| CH 03/04/05 Mounting positions                                 | page 63        |
| CH 03 Performance and dimensions with 4-pole motors            | page 64        |
| CH 04 Performance and dimensions with 4-pole motors            | page 65        |
| CH 05 Performance and dimensions with 4-pole motors            | page 66        |
| CH 06/07/08 Worm geared motors and worm gear units             | page 67        |
| CH 06/07/08 - Designation - Example order                      | page 68        |
| Mounting position                                              | page 69        |
| CH 06 Performance and dimensions with 4-pole motors            | page 70        |
| CH 07 Performance and dimensions with 4-pole motors            | page 71        |
| CH 08 Performance and dimensions with 4-pole motors            | page 72        |
| CHR/CHRE Dimensions                                            | page 73        |





|                                                                             |                 |
|-----------------------------------------------------------------------------|-----------------|
| CHPC/CH worm gear with pre-stage module                                     | page 74         |
| CHPC worm gear with pre-stage module                                        | page 75         |
| CHPC/CH Performance and dimensions with 4-pole motors                       | page 76         |
| Double worm gear CH/CH                                                      | page 77         |
| Double worm gear CH/CH - Example order                                      | page 78         |
| Execution                                                                   | page 79         |
| CH/CH Performance and dimensions with 4-pole motors                         | page 80         |
| Torque arm - Single and double output shaft kit                             | page 81         |
| Cover - Reduction bushings kit                                              | page 82         |
| Exploded drawing and spare parts list CH 03/04/05                           | page 83         |
| Exploded drawing and spare parts list CH 06/07/08                           | page 84         |
| Radial loads on the output shaft                                            | page 85         |
| Radial loads on the centre line of the input shaft                          | page 86         |
| Use and maintenance instructions                                            | page 87         |
| <b>■ CHO BEVEL HELICAL GEAR UNITS</b>                                       | <b>page 88</b>  |
| Introduction                                                                | page 89         |
| General information                                                         | page 90         |
| Radial loads $F_r$                                                          | page 91         |
| Lubrication                                                                 | page 92         |
| Maintenance and designation                                                 | page 93         |
| Ratios and IEC motors adapters                                              | page 94         |
| Gear unit selection tables                                                  | page 96         |
| Dimension sheet                                                             | page 108        |
| Accessories and mounting positions                                          | page 116        |
| Exploded drawing and spare part list                                        | page 119        |
| CHO use and maintenance instructions                                        | page 120        |
| <b>■ CHA SHAFT MOUNTED SPEED REDUCERS</b>                                   | <b>page 121</b> |
| Introduction                                                                | page 122        |
| General information                                                         | page 123        |
| Service factor $F_s$                                                        | page 124        |
| Radial loads $F_r$ / Backstop device                                        | page 125        |
| Lubrication                                                                 | page 126        |
| Mounting position                                                           | page 127        |
| Gear unit selection table                                                   | page 128        |
| Dimension sheet                                                             | page 129        |
| Dimension shaft                                                             | page 131        |
| Torque tension arm                                                          | page 132        |
| Parts list                                                                  | page 133        |
| CHA use and maintenance instructions                                        | page 135        |
| <b>■ SPEED VARIATORS CHV SERIES</b>                                         | <b>page 136</b> |
| Speed variators CHV series - Designation                                    | page 137        |
| Performances with 4 poles motors - Lubrication - Recommended oils           | page 138        |
| CHV 02/05/10/20/30/50 dimensions - Accessories                              | page 139        |
| Use and maintenance - Spare part list                                       | page 140        |
| <b>■ RIGHT-ANGLE PRECISION BEVEL GEAR DRIVERS</b>                           | <b>page 141</b> |
| Right-angle precision bevel gear drives                                     | page 142        |
| How to select the correct right-angle bevel gear drive for your application | page 144        |
| Input power                                                                 | page 145        |
| External load in connection with speed                                      | page 146        |
| Right-angle precision bevel gear drives                                     | page 147        |
| <b>■ ELECTRIC MOTORS</b>                                                    | <b>page 153</b> |
| <b>■ General sales conditions</b>                                           | <b>page 175</b> |





## SYMBOLS

**P** = Power (Kw)  
**i** = Ratio  
**T** = Torque (Nm)  
**n** = Speed (RPM)  
**Fr** = Radial Load (N)  
**Fa** = Axial Load (N)  
**f.s.** = Service Factor  
**D** = Diameter (mm)

**1 Kw** = 1,36 HP

**9,81 N** = 1 Kp

1 Input  
 2 Output



## GENERAL INFORMATION

### POWER P

$P_1 \cdot \eta = P_2$

$P_1$  = Input power

$P_2$  = Output power

$\eta$  = Transmission efficiency

2

### VELOCITA' DI ROTAZIONE 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.

### TRANSMISSION RATIO i

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

### TORQUE T

$$T_2 = \frac{9550 \cdot P_1 \cdot \eta}{n_2} \left[ \text{Nm} \right]$$

$$T_{2n} \geq T_2 \cdot f_s \left[ \text{Nm} \right]$$

$T_2$  = Output torque

$T_{2n}$  = Rated output torque

$P_1$  = Input power

$\eta$  = Transmission efficiency

$f_s$  = Service factor

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

Quantity, availability and prices with Chiaravalli B2B





## 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  
          = 1,4 chain sprocket  
          = 1,75 v-pulley  
          = 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 tables page 9-46-47-77-78



## LUBRICATION

All, gearboxes and variators are supplied, CHA type excluded, complete with lubricant. The gearboxes maintenance free are lubricated with synthetic oil the others with mineral oil. It is very important to verify the mounting position because sometimes adding some oil is enough, in other case to lubricate bearings with special grease would be necessary. Use only recommended oils.

Warning in case of heavy work it is better to install, where possible, breather plug.



## PAINTING

All the gearboxes and electrical motors are painted Grey RAL 9022 with epoxy resins powder. Big gearboxes and motors are cast iron made, aluminium all the others.

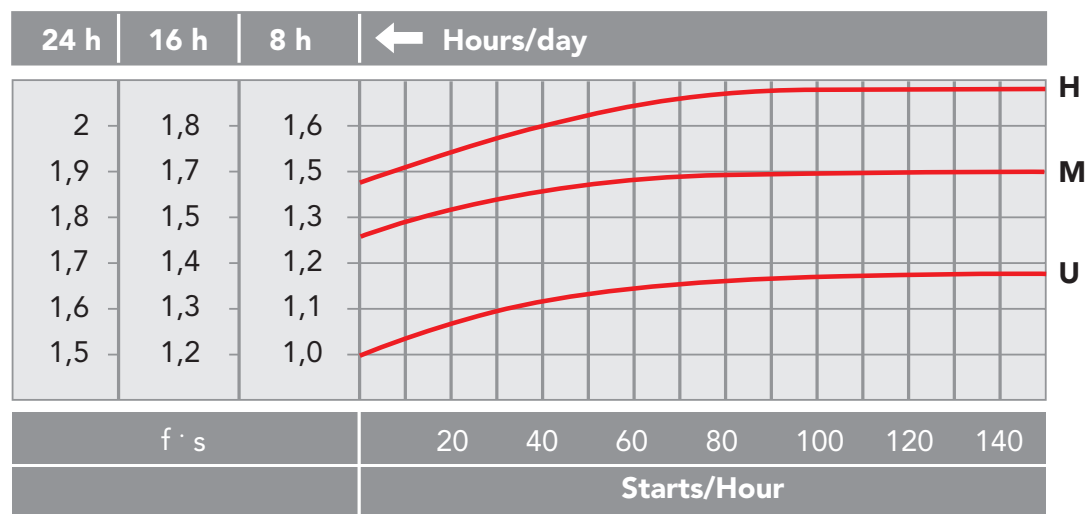


## SERVICE FACTOR $F_s$

The service factor mainly depends on three parameters:

- type to load: U - M - H
- run time: h/day
- start-up frequency: na/h

**U** = uniform  
**M** = moderate  
**H** = heavy  
**na/h** = starts/hour



### LOAD TYPE - APPLICATION

- U** Conveyor belts for light weights - centrifugal pumps - lifts - bottling machines
- M** Conveyor belts for heavy weights - packing machines - wood working machines - gear pumps
- H** Mixers - bucket elevators - tooling machines - machinery for bricks - vibrators



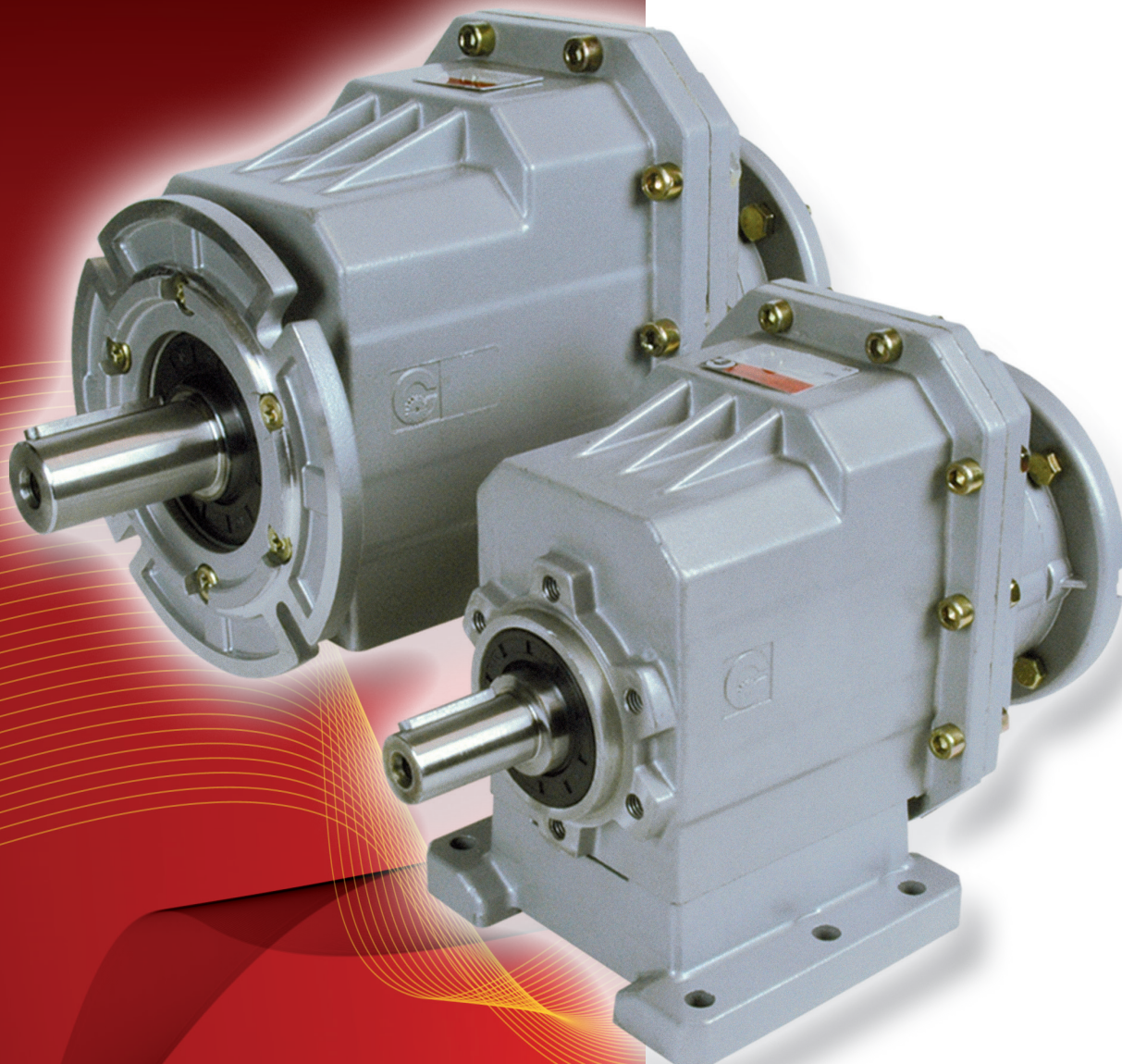
## V6/B8 MOUNTING POSITION

When the worm gearboxes mounting position is V6 or B8, with continuous work or input speed >1400 p.p.m, it is necessary to call our technical service.

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

Quantity, availability and prices with Chiaravalli B2B





**CHC SERIES HELICAL  
GEAR UNITS**



## INTRODUCTION

CHC series helical gear units is a new generation product, which designed basing on the modular system.

It can be connected respectively with motors such as standard motor, brake motor, explosion-proof motor, IECmotor B5 - B14. This kind of product is widely used in drive fields such as textile, foodstuff, beverage, chemical industry, packaging and so on.

## PRODUCT FEATURES

- Modularity
- High efficiency
- Low noise
- Universal mounting
- Aluminum housing, light in weight
- **Gears in carbonize hard, grinded**
- Lubricant maintenance free

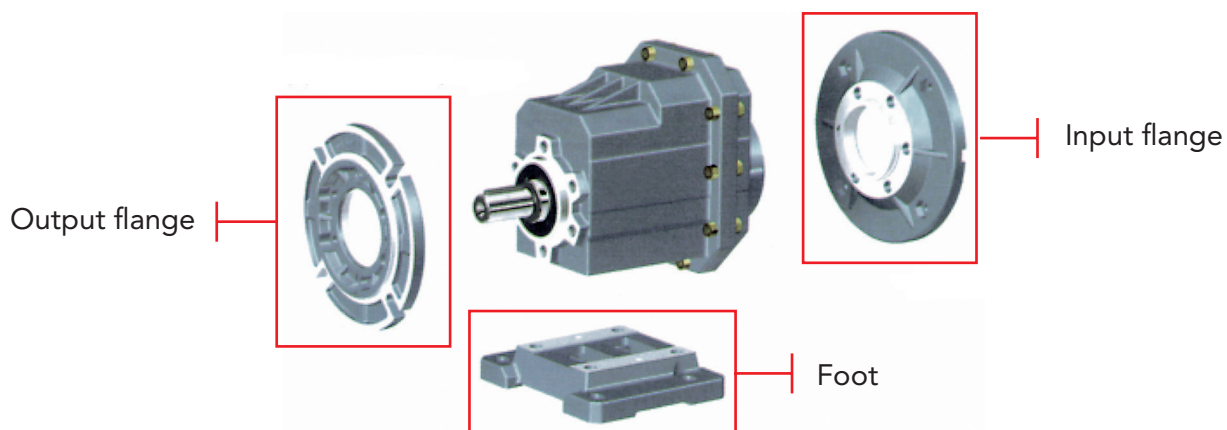
CHC Series helical gear units are manufactured in 5 sizes (+ 1 on request). Power 0.12-4 Kw; Ratio 5-46.

Torque max 120-500 Nm. It can be connected (foot, flange) discretionary and use multi-mounting positions according to cutomers' requirements.

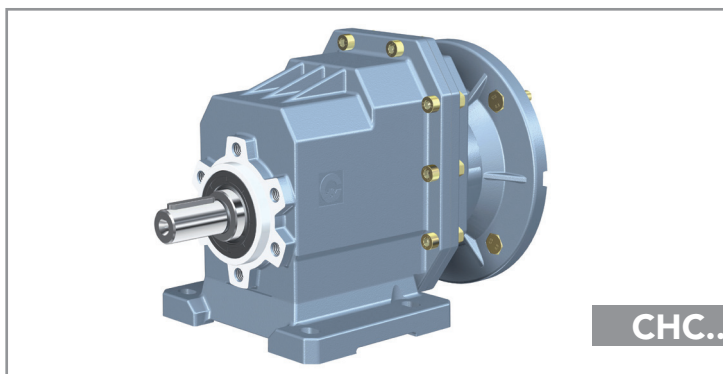




## ASSEMBLING POSSIBILITY



## DESIGNATION

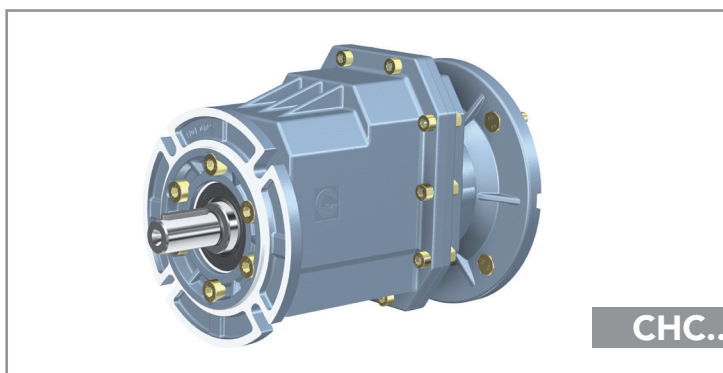


**CHC...P**

ORDER EXAMPLE  
**CHC 25PB 28,9 80B5 B3**

Type CHC  
Size 16\*-20-25-30-35-40  
The number indicates the output shaft diameter  
\*CHC 16 on request

Version P foot  
F flange  
no foot  
no flange

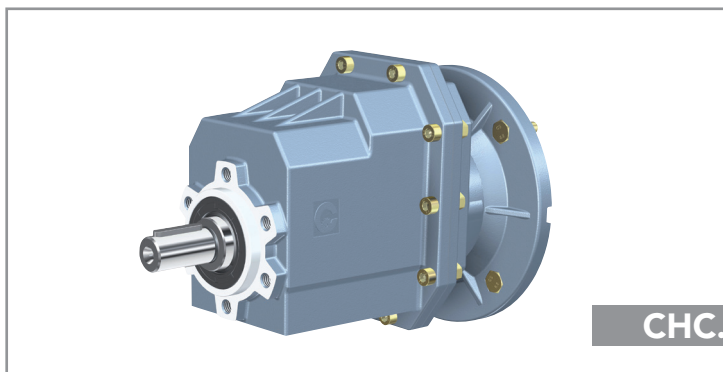


**CHC...F**

Flange type 1 2 3

Foot type M / B / C

Ratio see catalogue  
IEC Motor flange size  
Version B5-B14  
Mounting position B3-B8-B6-B7  
V5-V6-B5-V1-V3



**CHC...**

**If the motor is also required  
please specify**

Size es. 71B4  
Power es. Kw. 0,37  
Poles es. 4  
Voltage es. 230 / 400  
Frequency es. 50 Hz.  
Flange es. B5



## 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

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

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

$M_2$  = Output torque

$M_{2n}$  = Rated output torque

$P_1$  = Input power

$\eta$  = Transmission efficiency

$f_s$  = Service factor

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

Quantity, availability and prices with Chiaravalli B2B





## 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 sprocket  
 $T.e.f.$  = 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.

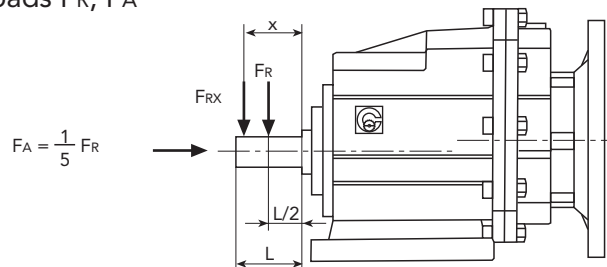
$$F_{Rx} \leq \frac{F_R \cdot a}{(b+x)} \left[ N \right]$$

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

### CONSTANTS' VALUES

|          | CHC 16-20 | CHC 25 | CHC 30 | CHC 35-40 |
|----------|-----------|--------|--------|-----------|
| <b>a</b> | 103       | 116,5  | 130    | 147       |
| <b>b</b> | 83        | 91,5   | 100    | 112       |

Output shaft radial loads & axial loads  $F_R$ ,  $F_A$



| $n_2$ [min <sup>1</sup> ] | 10   | 40   | 60   | 80   | 100  | 120  | 150  | 180  | 250  | 400  |
|---------------------------|------|------|------|------|------|------|------|------|------|------|
| <b>CHC 16-20</b>          | 2300 | 2300 | 2180 | 1980 | 1840 | 1630 | 1400 | 1320 | 1080 | 920  |
| <b>CHC 25</b>             | 4800 | 4800 | 4370 | 3970 | 3680 | 3470 | 2710 | 2550 | 2150 | 1840 |
| <b>CHC 30</b>             | 6300 | 6300 | 5550 | 5040 | 4510 | 3800 | 3530 | 3320 | 2800 | 2390 |
| <b>CHC 35-40</b>          | 7500 | 7500 | 6590 | 5990 | 5230 | 4570 | 4240 | 3900 | 3350 | 2860 |

$F_R$   
 $[N]$



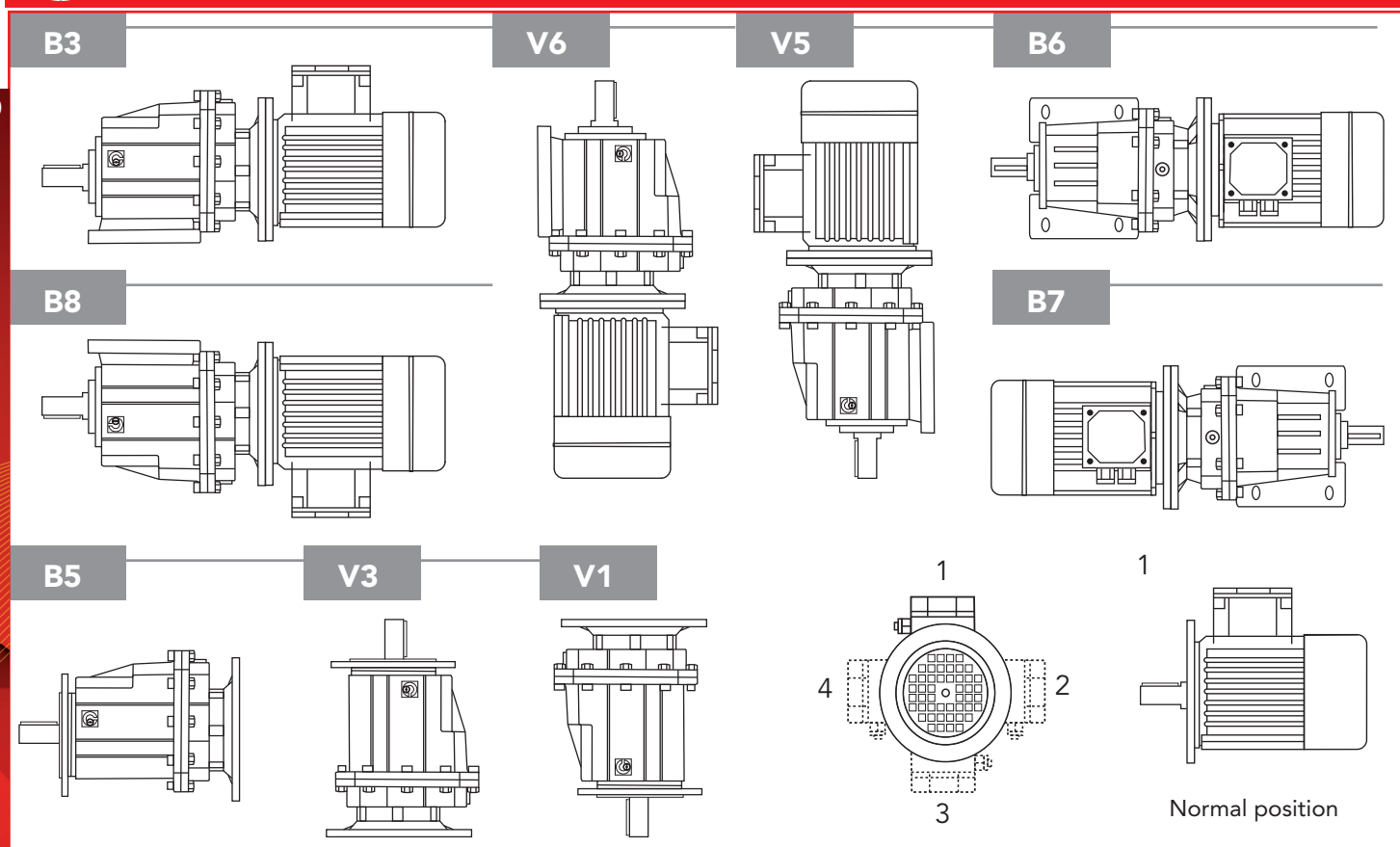
# LUBRICATION

## TYPES OF LUBRICATION

|     |  | ISO               | SHELL              | MOBIL            | BP                   | Lubrication type |
|-----|--|-------------------|--------------------|------------------|----------------------|------------------|
| CHC |  | VG 220            | Shell Omala 220    | Mobilgear 630    | BP Energol GR-XP 220 | Mineral Oil      |
|     |  | VG 150<br>VG 100  | Shell Omala 100    | Mobilgear 627    | BP Energol GR-XP 100 |                  |
|     |  | VG 68-46<br>VG 32 | Shell Tellus T 32  | Mobil D.T.E. 13M |                      |                  |
|     |  | VG 22<br>VG 15    | Shell Tellus T 15  | Mobil D.T.E. 11M | BP Energol HLP-HM 15 |                  |
|     |  | VG 150            | Shell Omala HD 150 | Mobil SHC 629    |                      | Synthetic oil    |
|     |  | VG 220            | Shell Omala HD 220 | Mobil SHC 630    |                      |                  |
|     |  | VG 320            | Shell Tivela S 320 |                  |                      |                  |



## MOUNTING POSITION AND TERMINAL BOX ORIENTATION



Size

Fill quantity in litres

|           | B3/B8 | V6/V3 | V5/V1 | B6/B7 |
|-----------|-------|-------|-------|-------|
| CHC 16/20 | 0,4   | 0,6   | 0,3   | 0,3   |
| CHC 25    | 0,5   | 0,7   | 0,4   | 0,4   |
| CHC 30    | 0,8   | 1,1   | 0,6   | 0,6   |
| CHC 35/40 | 1,2   | 1,6   | 1,0   | 0,9   |

The CHC gearboxes are supplied with Shell Tivela S 320 oil for STANDARD position, when mounted in V6/V3 it is necessary to add the correct quantity of oil.





# RATIO AND IEC MOTOR ADAPTERS

| CHC 20 | (CHC16)* | IEC           |               |
|--------|----------|---------------|---------------|
| i      | 63B5     | 71B5<br>71B14 | 80B5<br>80B14 |
| 45,9   | B        |               |               |
| 40,1   | B        |               |               |
| 35,5   | B        |               |               |
| 28,5   | B        |               |               |
| 23,6   | B        |               |               |
| 19,8   | B        |               |               |
| 17,9   | B        |               |               |
| 13,8   | B        |               |               |
| 11,9   | B        |               |               |
| 9,8    | B        |               |               |
| 7,7    | B        |               |               |
| 5,7    | B        |               |               |
| 4,6    | B        | B             |               |

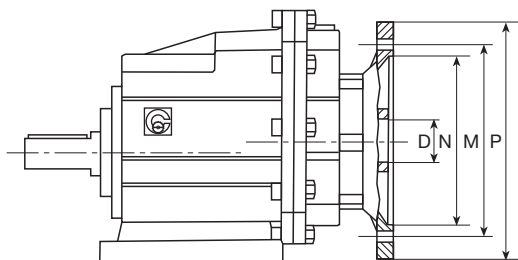
| CHC 25 | IEC           |               |               |
|--------|---------------|---------------|---------------|
| i      | 71B5<br>71B14 | 80B5<br>80B14 | 90B5<br>90B14 |
| 46,5   | B             |               |               |
| 40,6   | B             |               |               |
| 35,9   | B             |               |               |
| 28,9   | B             |               |               |
| 23,9   | B             |               |               |
| 20,1   |               | B             |               |
| 17,1   |               | B             |               |
| 14,8   |               | B             |               |
| 12,1   |               | B             |               |
| 9,9    |               | B             |               |
| 7,4    |               | B             |               |
| 5,5    |               | B             |               |

| CHC 30 | IEC           |               |                         |
|--------|---------------|---------------|-------------------------|
| i      | 80B5<br>80B14 | 90B5<br>90B14 | 100/112B5<br>100/112B14 |
| 58,1   | B             |               |                         |
| 50,0   | B             |               |                         |
| 43,7   | B             |               |                         |
| 38,7   | B             |               |                         |
| 34,6   | B             |               |                         |
| 30,6   | B             |               |                         |
| 25,0   | B             |               |                         |
| 21,7   | B             | B             |                         |
| 17,3   | B             | B             |                         |
| 15,0   | B             | B             |                         |
| 12,3   |               | B             |                         |
| 10,2   |               | B             |                         |
| 7,9    |               | B             |                         |
| 5,5    |               | B             |                         |

| CHC 35 | CHC 40        | IEC           |                         |
|--------|---------------|---------------|-------------------------|
| i      | 80B5<br>80B14 | 90B5<br>90B14 | 100/112B5<br>100/112B14 |
| 58,1   | B             |               |                         |
| 50,0   | B             |               |                         |
| 43,7   | B             |               |                         |
| 34,6   | B             | B             |                         |
| 28,3   | B             | B             |                         |
| 21,7   | B             | B             |                         |
| 17,3   | B             | B             |                         |
| 15,1   | B             | B             |                         |
| 12,3   |               | B             |                         |
| 10,2   |               | B             |                         |
| 7,9    |               | B             |                         |
| 5,5    |               | B             |                         |

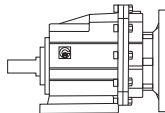
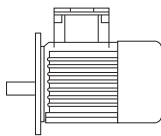
\* CHC 16 Only on request  
 Ratios are rounded  
 B= Metal reduction bushing

| IEC | 63B5 | 71B5 | 71B14 | 80B5 | 80B14 | 90B5 | 90B14 | 100B5 | 100B14 | 112B5 | 112B14 |
|-----|------|------|-------|------|-------|------|-------|-------|--------|-------|--------|
| DE8 | 11   | 14   |       | 19   |       | 24   |       | 28    |        | 28    |        |
| P   | 140  | 160  | 105   | 200  | 120   | 200  | 140   | 250   | 160    | 250   | 160    |
| M   | 115  | 130  | 85    | 165  | 100   | 165  | 115   | 215   | 130    | 215   | 130    |
| N   | 95   | 110  | 70    | 130  | 80    | 130  | 95    | 180   | 110    | 180   | 110    |



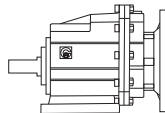
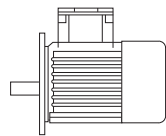


# GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$  | $f_s$ |  |  | page     |      |    |
|------------------|------------------|------------------|------|-------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|------|----|
| 0.12             | 30.5             | 36               | 45.9 | 3.3   | CHC20                                                                              | 63B5                                                                                | 63A4     | 16   |    |
|                  | 34.9             | 32               | 40.1 | 3.8   | (CHC16)                                                                            |                                                                                     |          |      |    |
|                  | 39.5             | 28               | 35.5 | 4.3   |                                                                                    |                                                                                     |          |      |    |
|                  | 49.1             | 22               | 28.5 | 5.4   |                                                                                    |                                                                                     |          |      |    |
|                  | 59.4             | 18.5             | 23.6 | 6.5   |                                                                                    |                                                                                     |          |      |    |
|                  | 70.6             | 15.6             | 19.8 | 7.7   |                                                                                    |                                                                                     |          |      |    |
|                  | 78.4             | 14.0             | 17.9 | 7.1   |                                                                                    |                                                                                     |          |      |    |
|                  | 101              | 10.8             | 13.8 | 9.2   |                                                                                    |                                                                                     |          |      |    |
|                  | 118              | 9.4              | 11.9 | 12.8  |                                                                                    |                                                                                     |          |      |    |
|                  | 143              | 7.7              | 9.8  | 13.0  |                                                                                    |                                                                                     |          |      |    |
|                  | 181              | 6.1              | 7.7  | 13.2  |                                                                                    |                                                                                     |          |      |    |
|                  | 246              | 4.5              | 5.7  | 13.4  |                                                                                    |                                                                                     |          |      |    |
|                  | 0.18             | 19.6             | 84   | 45.9  | 1.4                                                                                | CHC20                                                                               | 71B5/B14 | 71A6 | 16 |
|                  |                  | 22.4             | 74   | 40.1  | 1.6                                                                                | (CHC16)                                                                             |          |      |    |
| 25.4             |                  | 65               | 35.5 | 1.8   |                                                                                    |                                                                                     |          |      |    |
| 31.6             |                  | 52               | 28.5 | 2.3   |                                                                                    |                                                                                     |          |      |    |
| 30.5             |                  | 54               | 45.9 | 2.2   | CHC20                                                                              | 63B5                                                                                | 63B4     | 16   |    |
| 34.9             |                  | 47               | 40.1 | 2.5   | (CHC16)                                                                            |                                                                                     |          |      |    |
| 39.5             |                  | 42               | 35.5 | 2.9   |                                                                                    |                                                                                     |          |      |    |
| 49.1             |                  | 34               | 28.5 | 3.6   |                                                                                    |                                                                                     |          |      |    |
| 59.4             |                  | 28               | 23.6 | 4.3   |                                                                                    |                                                                                     |          |      |    |
| 70.6             |                  | 23               | 19.8 | 5.1   |                                                                                    |                                                                                     |          |      |    |
| 78.4             |                  | 21               | 17.9 | 4.8   |                                                                                    |                                                                                     |          |      |    |
| 101              |                  | 16.3             | 13.8 | 6.1   |                                                                                    |                                                                                     |          |      |    |
| 118              |                  | 14.0             | 11.9 | 8.6   |                                                                                    |                                                                                     |          |      |    |
| 143              |                  | 11.6             | 9.8  | 8.6   |                                                                                    |                                                                                     |          |      |    |
| 181              | 9.1              | 7.7              | 8.8  |       |                                                                                    |                                                                                     |          |      |    |
| 246              | 6.7              | 5.7              | 8.9  |       |                                                                                    |                                                                                     |          |      |    |
|                  | 19.4             | 85               | 46.5 | 2.3   | CHC25                                                                              | 71B5/B14                                                                            | 71A6     | 17   |    |
|                  | 22.2             | 74               | 40.6 | 2.7   |                                                                                    |                                                                                     |          |      |    |
|                  | 25.1             | 66               | 35.9 | 3.0   |                                                                                    |                                                                                     |          |      |    |
|                  | 31.2             | 53               | 28.9 | 3.8   |                                                                                    |                                                                                     |          |      |    |
|                  | 30.1             | 55               | 46.5 | 3.7   | CHC25                                                                              | 63B5                                                                                | 63B4     | 17   |    |
|                  | 34.5             | 48               | 40.6 | 4.2   |                                                                                    |                                                                                     |          |      |    |
| 0.25             | 19.6             | 117              | 45.9 | 1.0   | CHC20                                                                              | 71B5/B14                                                                            | 71B6     | 16   |    |
|                  | 22.4             | 102              | 40.1 | 1.2   | (CHC16)                                                                            |                                                                                     |          |      |    |
|                  | 25.4             | 90               | 35.5 | 1.3   |                                                                                    |                                                                                     |          |      |    |
|                  | 31.6             | 73               | 28.5 | 1.7   |                                                                                    |                                                                                     |          |      |    |
|                  | 30.5             | 75               | 45.9 | 1.6   | CHC20                                                                              | 71B5/B14                                                                            | 71A4     | 16   |    |
|                  | 34.9             | 66               | 40.1 | 1.8   | (CHC16)                                                                            |                                                                                     |          |      |    |
|                  | 39.5             | 58               | 35.5 | 2.1   |                                                                                    |                                                                                     |          |      |    |
|                  | 49.1             | 47               | 28.5 | 2.6   |                                                                                    |                                                                                     |          |      |    |
|                  | 59.4             | 39               | 23.6 | 3.1   |                                                                                    |                                                                                     |          |      |    |
|                  | 70.6             | 32               | 19.8 | 3.7   |                                                                                    |                                                                                     |          |      |    |

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

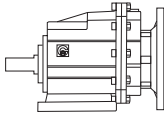
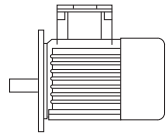
Quantity, availability and prices with Chiaravalli B2B

| $P_{1n}$<br>[ Kw ] | $n_2$<br>[ r/min ] | $M_{2n}$<br>[ Nm ] | i    | $f_s$ |  |  | page |    |    |    |
|--------------------|--------------------|--------------------|------|-------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|----|----|----|
| 0.25               | 78.4               | 29                 | 17.9 | 3.4   | CHC20                                                                              | 71B5/B14                                                                            | 71A4 | 16 |    |    |
|                    | 101                | 23                 | 13.8 | 4.4   | (CHC16)                                                                            |                                                                                     |      |    |    |    |
|                    | 118                | 19.5               | 11.9 | 6.2   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 143                | 16.1               | 9.8  | 6.2   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 181                | 12.6               | 7.7  | 6.3   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 246                | 9.3                | 5.7  | 6.4   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 19.4               | 118                | 46.5 | 1.7   | CHC25                                                                              | 71B5/B14                                                                            | 71B6 | 17 |    |    |
|                    | 22.2               | 103                | 40.6 | 1.9   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 25.1               | 91                 | 35.9 | 2.2   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 31.2               | 74                 | 28.9 | 2.7   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 30.1               | 76                 | 46.5 | 2.6   | CHC25                                                                              | 71B5/B14                                                                            | 71A4 |    | 17 |    |
|                    | 34.5               | 66                 | 40.6 | 3.0   |                                                                                    |                                                                                     |      |    |    |    |
| 39.0               | 59                 | 35.9               | 3.4  |       |                                                                                    |                                                                                     |      |    |    |    |
| 48.5               | 47                 | 28.9               | 4.2  |       |                                                                                    |                                                                                     |      |    |    |    |
| 0.37               | 30.5               | 111                | 45.9 | 1.1   | CHC20                                                                              | 71B5/B14                                                                            | 71B4 | 16 |    |    |
|                    | 34.9               | 97                 | 40.1 | 1.2   | (CHC16)                                                                            |                                                                                     |      |    |    |    |
|                    | 39.5               | 86                 | 35.5 | 1.4   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 49.1               | 69                 | 28.5 | 1.7   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 59.4               | 57                 | 23.6 | 2.1   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 70.6               | 48                 | 19.8 | 2.5   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 78.4               | 43                 | 17.9 | 2.3   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 101                | 33                 | 13.8 | 3.0   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 118                | 29                 | 11.9 | 4.2   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 143                | 24                 | 9.8  | 4.2   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 181                | 19                 | 7.7  | 4.3   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 246                | 14                 | 5.7  | 4.4   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 19.4               | 175                | 46.5 | 1.1   | CHC25                                                                              | 80B4/B14                                                                            | 80A6 |    | 17 |    |
|                    | 22.2               | 153                | 40.6 | 1.3   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 25.1               | 135                | 35.9 | 1.5   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 31.2               | 109                | 28.9 | 1.8   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 30.1               | 113                | 46.5 | 1.8   | CHC25                                                                              | 71B5/B14                                                                            | 71B4 |    |    | 17 |
|                    | 34.5               | 98                 | 40.6 | 2.0   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 39                 | 87                 | 35.9 | 2.3   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 48.5               | 70                 | 28.9 | 2.9   |                                                                                    |                                                                                     |      |    |    |    |
| 58.7               | 58                 | 23.8               | 3.5  |       |                                                                                    |                                                                                     |      |    |    |    |
| 81.9               | 41                 | 17.1               | 3.9  |       |                                                                                    |                                                                                     |      |    |    |    |
|                    | 15.5               | 219                | 58.1 | 1.4   | CHC30                                                                              | 80B5/B14                                                                            | 80A6 | 18 |    |    |
|                    | 18.0               | 189                | 50.0 | 1.6   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 21.0               | 165                | 43.7 | 1.8   |                                                                                    |                                                                                     |      |    |    |    |
| 0.55               | 101                | 50                 | 13.8 | 2.0   | CHC20                                                                              | 80B5/B14                                                                            | 80A4 | 16 |    |    |
|                    | 118                | 43                 | 11.9 | 2.8   | (CHC16)                                                                            |                                                                                     |      |    |    |    |
|                    | 143                | 35                 | 9.8  | 2.8   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 181                | 28                 | 7.7  | 2.9   |                                                                                    |                                                                                     |      |    |    |    |
|                    | 246                | 20                 | 5.7  | 2.9   |                                                                                    |                                                                                     |      |    |    |    |



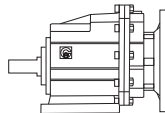
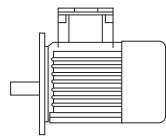


# GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$  | $f_s$ |                                                                                    |                                                                                     |             | page      |
|------------------|------------------|------------------|------|-------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------|-----------|
|                  |                  |                  |      |       |  |  |             |           |
| <b>0.55</b>      | 19.4             | 260              | 46.5 | 0.8   | <b>CHC25</b>                                                                       | <b>80B5/B14</b>                                                                     | <b>80B6</b> | <b>17</b> |
|                  | 22.2             | 227              | 40.6 | 0.9   |                                                                                    |                                                                                     |             |           |
|                  | 25.1             | 201              | 35.9 | 1.0   |                                                                                    |                                                                                     |             |           |
|                  | 31.2             | 162              | 28.9 | 1.2   |                                                                                    |                                                                                     |             |           |
|                  | 37.7             | 134              | 23.9 | 1.5   |                                                                                    |                                                                                     |             |           |
|                  | 30.1             | 167              | 46.5 | 1.2   | <b>CHC25</b>                                                                       | <b>80B5/B14</b>                                                                     | <b>80A4</b> | <b>17</b> |
|                  | 34.5             | 146              | 40.6 | 1.4   |                                                                                    |                                                                                     |             |           |
|                  | 39               | 129              | 35.9 | 1.5   |                                                                                    |                                                                                     |             |           |
|                  | 48.5             | 104              | 28.9 | 1.9   |                                                                                    |                                                                                     |             |           |
|                  | 58.7             | 86               | 23.9 | 2.3   |                                                                                    |                                                                                     |             |           |
|                  | 69.7             | 72               | 20.1 | 2.8   |                                                                                    |                                                                                     |             |           |
|                  | 81.9             | 62               | 17.1 | 2.6   |                                                                                    |                                                                                     |             |           |
|                  | 94.5             | 53               | 14.8 | 3.7   |                                                                                    |                                                                                     |             |           |
|                  | 15.5             | 325              | 58.1 | 0.9   | <b>CHC30</b>                                                                       | <b>80B5/B14</b>                                                                     | <b>80B6</b> | <b>18</b> |
|                  | 18.0             | 280              | 50.0 | 1.1   |                                                                                    |                                                                                     |             |           |
|                  | 21.0             | 245              | 43.7 | 1.2   |                                                                                    |                                                                                     |             |           |
|                  | 23.0             | 217              | 38.7 | 1.4   |                                                                                    |                                                                                     |             |           |
|                  | 24.0             | 209              | 58.1 | 1.4   | <b>CHC30</b>                                                                       | <b>80B5/B14</b>                                                                     | <b>80A4</b> | <b>18</b> |
|                  | 28.0             | 180              | 50.0 | 1.7   |                                                                                    |                                                                                     |             |           |
|                  | 32.0             | 158              | 43.7 | 1.9   |                                                                                    |                                                                                     |             |           |
|                  | 36.0             | 139              | 38.7 | 2.2   |                                                                                    |                                                                                     |             |           |
| <b>0.75</b>      | 101              | 68               | 13.8 | 1.5   | <b>CHC20</b>                                                                       | <b>80B5/B14</b>                                                                     | <b>80B4</b> | <b>16</b> |
|                  | 118              | 58               | 11.9 | 2.1   | (CHC16)                                                                            |                                                                                     |             |           |
|                  | 143              | 48               | 9.8  | 2.1   |                                                                                    |                                                                                     |             |           |
|                  | 181              | 38               | 7.7  | 2.1   |                                                                                    |                                                                                     |             |           |
|                  | 246              | 28               | 5.7  | 2.1   |                                                                                    |                                                                                     |             |           |
|                  | 302              | 23               | 4.6  | 2.6   |                                                                                    |                                                                                     |             |           |
|                  | 30.1             | 228              | 46.5 | 0.9   | <b>CHC25</b>                                                                       | <b>80B5/B14</b>                                                                     | <b>80B4</b> | <b>17</b> |
|                  | 34.5             | 199              | 40.6 | 1.0   |                                                                                    |                                                                                     |             |           |
|                  | 39               | 176              | 35.9 | 1.1   |                                                                                    |                                                                                     |             |           |
|                  | 48.5             | 142              | 28.9 | 1.4   |                                                                                    |                                                                                     |             |           |
|                  | 58.7             | 117              | 23.9 | 1.7   |                                                                                    |                                                                                     |             |           |
|                  | 69.7             | 99               | 20.1 | 2.0   |                                                                                    |                                                                                     |             |           |
|                  | 81.9             | 84               | 17.1 | 1.9   |                                                                                    |                                                                                     |             |           |
|                  | 94.5             | 73               | 14.8 | 2.7   |                                                                                    |                                                                                     |             |           |
|                  | 116.2            | 59               | 12.1 | 3.4   |                                                                                    |                                                                                     |             |           |
|                  | 141              | 49               | 9.9  | 3.3   |                                                                                    |                                                                                     |             |           |
|                  | 189              | 36               | 7.4  | 3.3   |                                                                                    |                                                                                     |             |           |
|                  | 257              | 27               | 5.5  | 3.7   |                                                                                    |                                                                                     |             |           |
|                  | 23.3             | 296              | 38.7 | 1.0   | <b>CHC30</b>                                                                       | <b>90B5/B14</b>                                                                     | <b>90S6</b> | <b>18</b> |
|                  | 26.0             | 264              | 34.6 | 1.1   |                                                                                    |                                                                                     |             |           |
|                  | 29.4             | 234              | 30.6 | 1.3   |                                                                                    |                                                                                     |             |           |
|                  | 36               | 191              | 25.0 | 1.6   |                                                                                    |                                                                                     |             |           |
|                  | 24.0             | 285              | 58.1 | 1.1   | <b>CHC30</b>                                                                       | <b>80B5/B14</b>                                                                     | <b>80B4</b> | <b>18</b> |

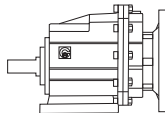
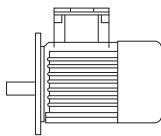
2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

Quantity, availability and prices with Chiaravalli B2B

| $P_{1n}$<br>[ Kw ] | $n_2$<br>[ r/min ] | $M_{2n}$<br>[ Nm ] | i    | $f_s$ |  |  | page |    |
|--------------------|--------------------|--------------------|------|-------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|----|
| 0.75               | 28.0               | 246                | 50.0 | 1.2   | CHC30                                                                              | 80B5/B14                                                                            | 80B4 | 18 |
|                    | 32.0               | 215                | 43.7 | 1.4   |                                                                                    |                                                                                     |      |    |
|                    | 36.2               | 190                | 38.7 | 1.6   |                                                                                    |                                                                                     |      |    |
|                    | 40.5               | 160                | 34.6 | 1.8   |                                                                                    |                                                                                     |      |    |
|                    | 45.8               | 150                | 30.6 | 2.0   |                                                                                    |                                                                                     |      |    |
|                    | 56.0               | 123                | 25.0 | 2.4   |                                                                                    |                                                                                     |      |    |
|                    | 64.5               | 107                | 21.7 | 2.6   |                                                                                    |                                                                                     |      |    |
|                    | 15.5               | 444                | 58.1 | 1.1   | CHC35                                                                              | 90B5/B14                                                                            | 90S6 | 19 |
| 18.0               | 382                | 50.0               | 1.3  | CHC40 |                                                                                    |                                                                                     |      |    |
| 20.6               | 334                | 43.7               | 1.5  |       |                                                                                    |                                                                                     |      |    |
| 26.0               | 264                | 34.6               | 1.9  |       |                                                                                    |                                                                                     |      |    |
| 24.0               | 285                | 58.1               | 1.8  | CHC35 | 80B5/B14                                                                           | 80B4                                                                                | 19   |    |
| 28.0               | 246                | 50.0               | 2.0  | CHC40 |                                                                                    |                                                                                     |      |    |
| 32.0               | 215                | 43.7               | 2.3  |       |                                                                                    |                                                                                     |      |    |
| 1.1                | 101                | 99                 | 13.8 | 1.0   | CHC20                                                                              | 80B5/B14                                                                            | 80C4 | 16 |
|                    | 118                | 86                 | 11.9 | 1.4   | (CHC16)                                                                            |                                                                                     |      |    |
|                    | 143                | 71                 | 9.8  | 1.4   |                                                                                    |                                                                                     |      |    |
|                    | 181                | 56                 | 7.7  | 1.4   |                                                                                    |                                                                                     |      |    |
|                    | 246                | 41                 | 5.7  | 1.5   |                                                                                    |                                                                                     |      |    |
|                    | 302                | 33                 | 4.6  | 1.8   |                                                                                    |                                                                                     |      |    |
|                    | 48.5               | 208                | 28.9 | 1.0   | CHC25                                                                              | 80B5/B14                                                                            | 80C4 | 17 |
|                    | 58.7               | 172                | 23.9 | 1.2   |                                                                                    |                                                                                     |      |    |
| 69.7               | 145                | 20.1               | 1.4  | CHC25 | 90B5/B14                                                                           | 90S4                                                                                | 17   |    |
| 81.9               | 123                | 17.1               | 1.3  |       |                                                                                    |                                                                                     |      |    |
| 94.5               | 107                | 14.8               | 1.9  |       |                                                                                    |                                                                                     |      |    |
| 116                | 87                 | 12.1               | 2.3  |       |                                                                                    |                                                                                     |      |    |
| 141                | 72                 | 9.9                | 2.2  |       |                                                                                    |                                                                                     |      |    |
| 189                | 53                 | 7.4                | 2.3  |       |                                                                                    |                                                                                     |      |    |
| 257                | 39                 | 5.5                | 2.5  |       |                                                                                    |                                                                                     |      |    |
| 32.0               | 315                | 43.7               | 0.9  | CHC30 | 90B5/B14                                                                           | 90S4                                                                                | 18   |    |
| 36.2               | 279                | 38.7               | 1.1  |       |                                                                                    |                                                                                     |      |    |
| 40.4               | 249                | 34.6               | 1.2  |       |                                                                                    |                                                                                     |      |    |
| 45.8               | 220                | 30.6               | 1.4  |       |                                                                                    |                                                                                     |      |    |
| 56.0               | 180                | 25.0               | 1.7  |       |                                                                                    |                                                                                     |      |    |
| 64.5               | 157                | 21.7               | 1.8  |       |                                                                                    |                                                                                     |      |    |
| 81.0               | 125                | 17.3               | 2.2  |       |                                                                                    |                                                                                     |      |    |
| 24.0               | 418                | 58.1               | 1.2  | CHC35 | 90B5/B14                                                                           | 90S4                                                                                | 19   |    |
| 28.0               | 360                | 50.0               | 1.4  | CHC40 |                                                                                    |                                                                                     |      |    |
| 32.0               | 315                | 43.7               | 1.6  |       |                                                                                    |                                                                                     |      |    |
| 40.5               | 249                | 34.6               | 2.0  |       |                                                                                    |                                                                                     |      |    |
| 49.5               | 204                | 28.3               | 2.5  |       |                                                                                    |                                                                                     |      |    |
| 64.5               | 157                | 21.7               | 3.1  |       |                                                                                    |                                                                                     |      |    |
| 81.0               | 125                | 17.3               | 3.8  |       |                                                                                    |                                                                                     |      |    |
| 92.7               | 108                | 15.1               | 4.2  |       |                                                                                    |                                                                                     |      |    |



# GEAR UNIT SELECTION TABLES

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$  | $f_s$ |  |  | page   |    |
|------------------|------------------|------------------|------|-------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|----|
| 1.5              | 69.7             | 197              | 20.1 | 1.0   | CHC25                                                                              | 90B5/B14                                                                            | 90L4   | 17 |
|                  | 81.9             | 168              | 17.1 | 1.0   |                                                                                    |                                                                                     |        |    |
|                  | 94.5             | 145              | 14.8 | 1.4   |                                                                                    |                                                                                     |        |    |
|                  | 116              | 118              | 12.1 | 1.7   |                                                                                    |                                                                                     |        |    |
|                  | 141              | 98               | 9.9  | 1.6   |                                                                                    |                                                                                     |        |    |
|                  | 189              | 73               | 7.4  | 1.7   |                                                                                    |                                                                                     |        |    |
| 1.5              | 257              | 54               | 5.5  | 1.9   | CHC25                                                                              | 90B5/B14                                                                            | 90L4   | 17 |
|                  | 40.4             | 340              | 34.6 | 0.9   | CHC30                                                                              | 90B5/B14                                                                            | 90L4   | 18 |
|                  | 45.8             | 300              | 30.6 | 1.0   |                                                                                    |                                                                                     |        |    |
|                  | 56               | 245              | 25.0 | 1.2   |                                                                                    |                                                                                     |        |    |
|                  | 64.5             | 214              | 21.7 | 1.3   |                                                                                    |                                                                                     |        |    |
|                  | 81.0             | 170              | 17.3 | 1.6   |                                                                                    |                                                                                     |        |    |
|                  | 93.0             | 148              | 15.0 | 1.8   |                                                                                    |                                                                                     |        |    |
|                  | 113.8            | 122              | 12.3 | 2.1   |                                                                                    |                                                                                     |        |    |
|                  | 136.0            | 101              | 10.3 | 2.4   |                                                                                    |                                                                                     |        |    |
|                  | 177              | 78               | 7.9  | 2.3   |                                                                                    |                                                                                     |        |    |
|                  | 255              | 54               | 5.5  | 2.8   |                                                                                    |                                                                                     |        |    |
|                  | 26.0             | 529              | 34.6 | 0.9   | CHC35                                                                              | 100B5/B14                                                                           | 100L6  | 19 |
|                  | 31.8             | 432              | 28.3 | 1.2   | CHC40                                                                              |                                                                                     |        |    |
|                  | 41,5             | 333              | 21.7 | 1.4   |                                                                                    |                                                                                     |        |    |
|                  | 24.0             | 571              | 58.1 | 0.9   | CHC35                                                                              | 90B5/B14                                                                            | 90L4   | 19 |
|                  | 28.0             | 491              | 50.0 | 1.0   | CHC40                                                                              |                                                                                     |        |    |
|                  | 32.0             | 430              | 43.7 | 1.2   |                                                                                    |                                                                                     |        |    |
|                  | 40.4             | 340              | 34.6 | 1.5   |                                                                                    |                                                                                     |        |    |
|                  | 49.5             | 278              | 28.3 | 1.8   |                                                                                    |                                                                                     |        |    |
|                  | 64.5             | 214              | 21.7 | 2.2   |                                                                                    |                                                                                     |        |    |
|                  | 81.0             | 170              | 17.3 | 2.8   |                                                                                    |                                                                                     |        |    |
|                  | 92.7             | 148              | 15.1 | 3.1   |                                                                                    |                                                                                     |        |    |
| 2.2              | 81.0             | 250              | 17.3 | 1.1   | CHC30                                                                              | 100B5/B14                                                                           | 100LA4 | 18 |
|                  | 93.0             | 217              | 15.0 | 1.2   |                                                                                    |                                                                                     |        |    |
|                  | 113.8            | 178              | 12.3 | 1.5   |                                                                                    |                                                                                     |        |    |
|                  | 136.0            | 148              | 10.2 | 1.6   |                                                                                    |                                                                                     |        |    |
|                  | 177              | 114              | 7.9  | 1.6   |                                                                                    |                                                                                     |        |    |
|                  | 255              | 79               | 5.5  | 1.9   |                                                                                    |                                                                                     |        |    |
|                  | 41.5             | 488              | 21.7 | 1.0   | CHC35                                                                              | 112B5/B14                                                                           | 112M6  | 19 |
|                  | 52.0             | 388              | 17.3 | 1.2   | CHC40                                                                              |                                                                                     |        |    |
|                  | 59.6             | 338              | 15.1 | 1.4   |                                                                                    |                                                                                     |        |    |
|                  | 40.4             | 499              | 34.6 | 1.0   | CHC35                                                                              | 100B5/B14                                                                           | 100LA4 | 19 |
|                  | 49.5             | 408              | 28.3 | 1.2   | CHC40                                                                              |                                                                                     |        |    |
|                  | 64.5             | 314              | 21.7 | 1.5   |                                                                                    |                                                                                     |        |    |
|                  | 81.0             | 250              | 17.3 | 1.9   |                                                                                    |                                                                                     |        |    |
|                  | 92.7             | 217              | 15.1 | 2.1   |                                                                                    |                                                                                     |        |    |
|                  | 113.8            | 178              | 12.3 | 2.6   |                                                                                    |                                                                                     |        |    |
|                  | 136.0            | 148              | 10.2 | 3.0   |                                                                                    |                                                                                     |        |    |

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

Quantity, availability and prices with Chiaravalli B2B



17



# PERFORMANCE PARAMETER $f \cdot s = 1$

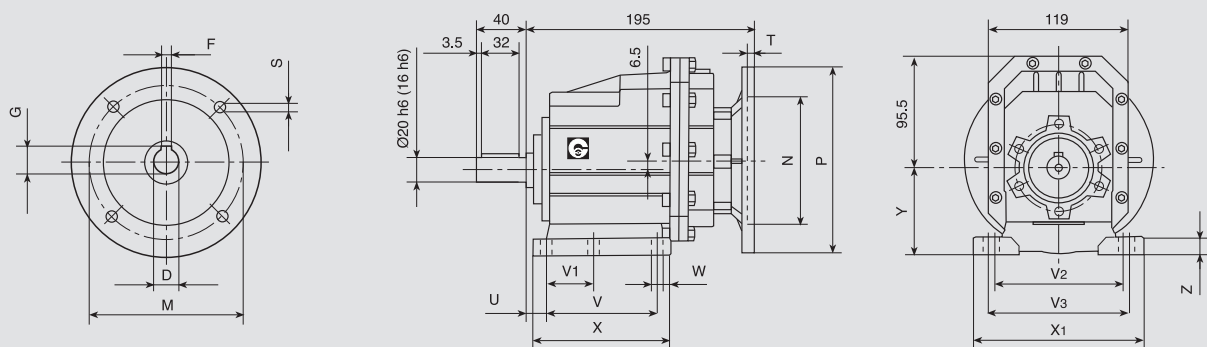
| $M_{2max}$<br>[Nm] | $n_1$<br>[r/min] | $i$  | $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] |         |  |  |
|--------------------|------------------|------|------------------|------------------|---------|--|--|
| 120                | 1400             | 45.9 | 0.40             | 30.5             | CHC20   |  |  |
| 120                | 1400             | 40.1 | 0.46             | 34.9             | (CHC16) |  |  |
| 120                | 1400             | 35.5 | 0.52             | 39.5             |         |  |  |
| 120                | 1400             | 28.5 | 0.64             | 49.1             |         |  |  |
| 120                | 1400             | 23.6 | 0.78             | 59.4             |         |  |  |
| 120                | 1400             | 19.8 | 0.92             | 70.6             |         |  |  |
| 90                 | 1400             | 17.9 | 0.77             | 78.4             |         |  |  |
| 90                 | 1400             | 13.8 | 1.00             | 101              |         |  |  |
| 120                | 1400             | 11.9 | 1.54             | 118              |         |  |  |
| 120                | 1400             | 9.8  | 1.87             | 143              |         |  |  |
| 80                 | 1400             | 7.7  | 1.58             | 181              |         |  |  |
| 70                 | 1400             | 5.7  | 1.88             | 246              |         |  |  |
| 70                 | 1400             | 4.6  | 2.31             | 302              |         |  |  |
| 200                | 1400             | 46.5 | 0.66             | 30.1             | CHC25   |  |  |
| 200                | 1400             | 40.6 | 0.75             | 34.5             |         |  |  |
| 200                | 1400             | 35.9 | 0.85             | 39.0             |         |  |  |
| 200                | 1400             | 28.9 | 1.06             | 48.5             |         |  |  |
| 200                | 1400             | 23.9 | 1.28             | 58.7             |         |  |  |
| 200                | 1400             | 20.1 | 1.52             | 69.7             |         |  |  |
| 140                | 1400             | 17.1 | 1.25             | 81.9             |         |  |  |
| 200                | 1400             | 14.8 | 2.06             | 94.6             |         |  |  |
| 200                | 1400             | 12.1 | 2.53             | 116              |         |  |  |
| 200                | 1400             | 9.9  | 3.08             | 141              |         |  |  |
| 120                | 1400             | 7.4  | 2.49             | 190              |         |  |  |
| 100                | 1400             | 5.5  | 2.80             | 257              |         |  |  |
| 300                | 1400             | 58.1 | 0.79             | 24.0             | CHC30   |  |  |
| 300                | 1400             | 50.0 | 0.92             | 28.0             |         |  |  |
| 300                | 1400             | 43.7 | 1.04             | 32.0             |         |  |  |
| 300                | 1400             | 38.7 | 1.18             | 36.1             |         |  |  |
| 300                | 1400             | 34.6 | 1.32             | 40.5             |         |  |  |
| 300                | 1400             | 30.6 | 1.50             | 45.8             |         |  |  |
| 300                | 1400             | 25.0 | 1.83             | 56.0             |         |  |  |
| 280                | 1400             | 21.7 | 1.96             | 64.5             |         |  |  |
| 280                | 1400             | 17.3 | 2.47             | 81.0             |         |  |  |
| 260                | 1400             | 15.0 | 2.64             | 93.0             |         |  |  |
| 260                | 1400             | 12.3 | 3.21             | 113.8            |         |  |  |
| 240                | 1400             | 10.2 | 3.57             | 137.0            |         |  |  |
| 180                | 1400             | 7.9  | 3.46             | 176              |         |  |  |
| 150                | 1400             | 5.5  | 4.17             | 255              |         |  |  |
| 500                | 1400             | 58.1 | 1.31             | 24.0             | CHC35   |  |  |
| 500                | 1400             | 50.0 | 1.53             | 28.0             | CHC40   |  |  |
| 500                | 1400             | 43.7 | 1.75             | 32.0             |         |  |  |
| 500                | 1400             | 34.6 | 2.21             | 40.5             |         |  |  |
| 500                | 1400             | 28.3 | 2.70             | 49.5             |         |  |  |
| 480                | 1400             | 21.7 | 3.37             | 64.5             |         |  |  |
| 480                | 1400             | 17.3 | 4.23             | 81.0             |         |  |  |
| 460                | 1400             | 15.1 | 4.66             | 93.0             |         |  |  |
| 460                | 1400             | 12.3 | 5.68             | 113.8            |         |  |  |
| 440                | 1400             | 10.2 | 6.54             | 136.0            |         |  |  |
| 260                | 1400             | 7.9  | 5.01             | 177              |         |  |  |
| 230                | 1400             | 5.5  | 6.41             | 255              |         |  |  |



# DIMENSION SHEET

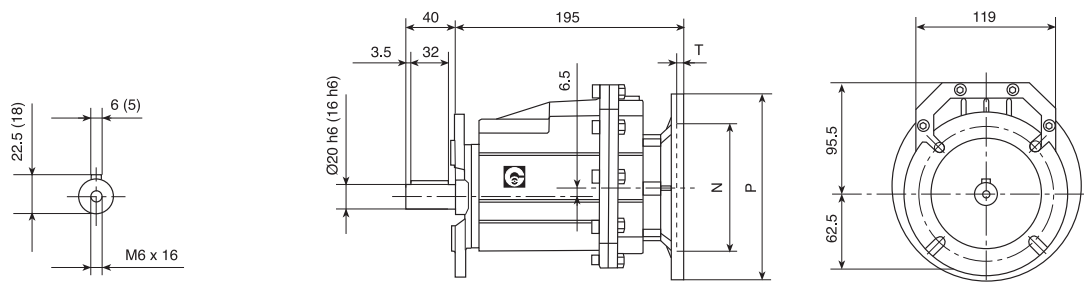
## CHC 20 (CHC16) P (IEC)

### INPUT

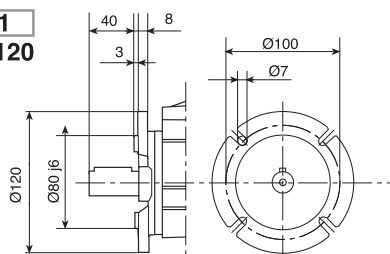


## CHC 20 (CHC16) F (IEC)

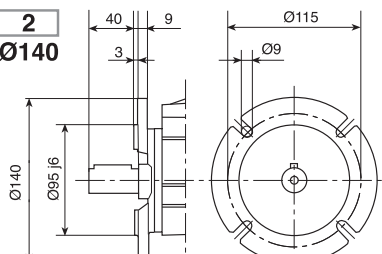
### OUTPUT



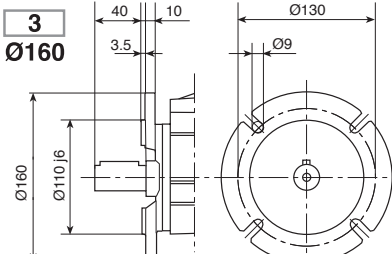
**1**  
Ø120



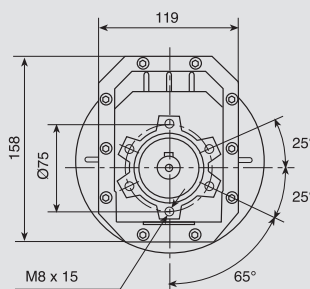
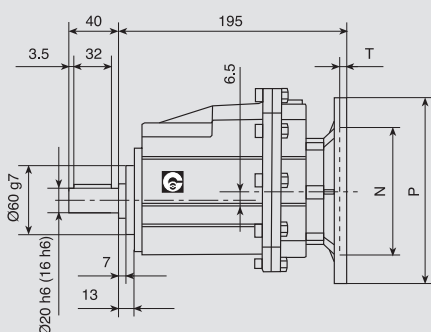
**2**  
Ø140



**3**  
Ø160



## CHC 20 (CHC16) (IEC)



(CHC16) On request

kg. 4,7

| IEC          | D  | F | G    | P   | M   | N   | S  | T |
|--------------|----|---|------|-----|-----|-----|----|---|
| <b>63B5</b>  | 11 | 4 | 12.8 | 140 | 115 | 95  | 9  | 5 |
| <b>71B5</b>  | 14 | 5 | 16.3 | 160 | 130 | 110 | 9  | 5 |
| <b>71B14</b> | 14 | 5 | 16.3 | 105 | 85  | 70  | 7  | 5 |
| <b>80B5</b>  | 19 | 6 | 21.8 | 200 | 165 | 130 | 11 | 5 |
| <b>80B14</b> | 19 | 6 | 21.8 | 120 | 100 | 80  | 7  | 5 |

| Foot cod. | U  | V  | V <sub>1</sub> | V <sub>2</sub> | V <sub>3</sub> | W | X   | X <sub>1</sub> | Y  | Z  |
|-----------|----|----|----------------|----------------|----------------|---|-----|----------------|----|----|
| <b>B</b>  | 18 | 87 | 50             | 110            | -              | 9 | 118 | 130            | 85 | 15 |
| <b>M</b>  | 18 | 80 | -              | 110            | 120            | 9 | 118 | 145            | 75 | 15 |

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

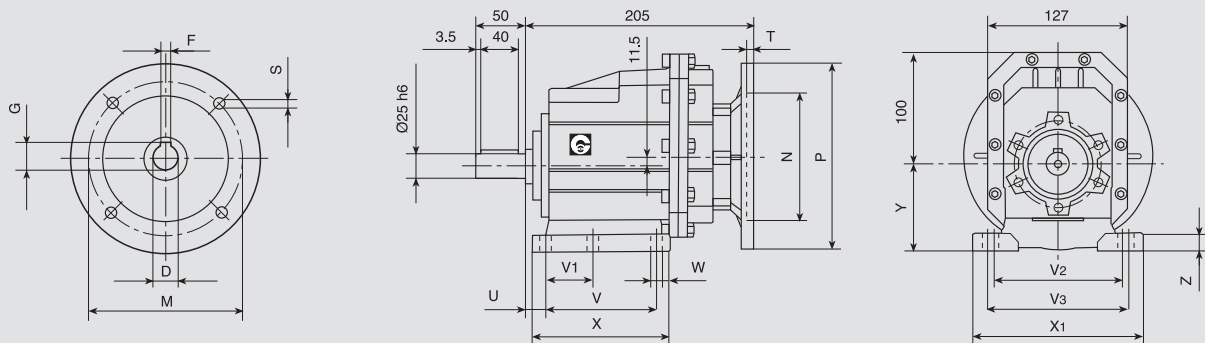
Quantity, availability and prices with Chiaravalli B2B



# DIMENSION SHEET

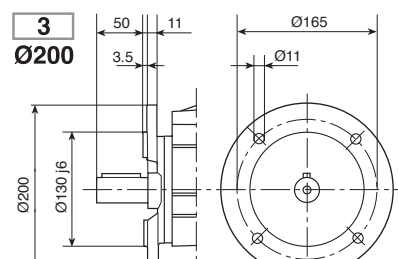
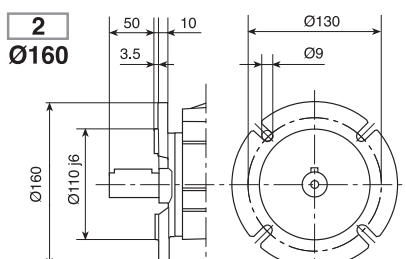
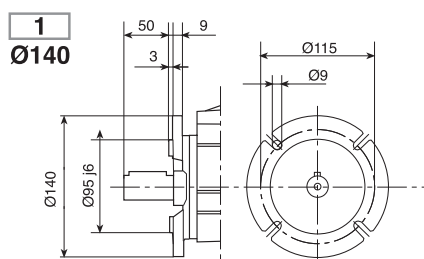
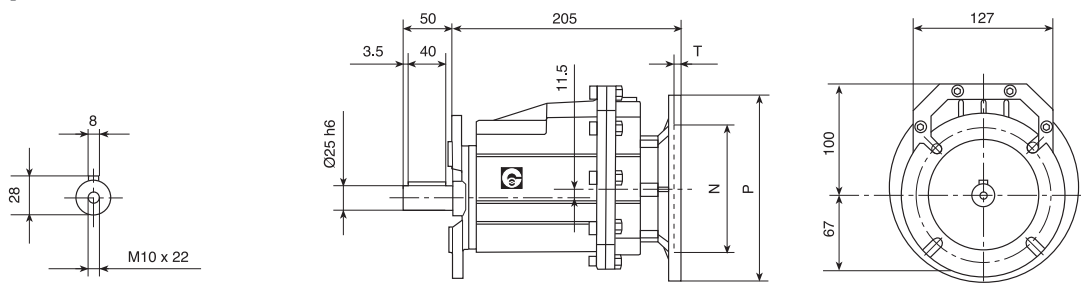
## CHC 25 P (IEC)

### INPUT

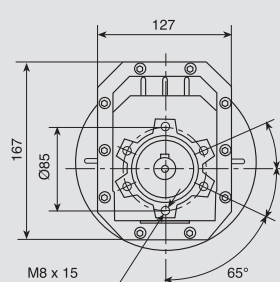
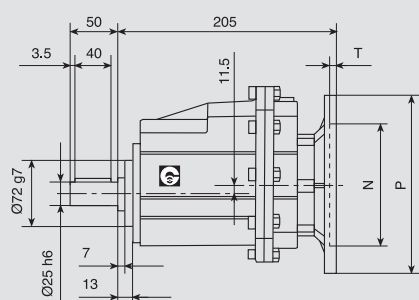


## CHC 25 F (IEC)

### OUTPUT



## CHC 25 (IEC)



kg. 5,8

| Foot cod. | U  | V     | V <sub>1</sub> | V <sub>2</sub> | V <sub>3</sub> | W  | X   | X <sub>1</sub> | Y   | Z  |
|-----------|----|-------|----------------|----------------|----------------|----|-----|----------------|-----|----|
| <b>B</b>  | 18 | 107,5 | 60             | -              | 130            | 11 | 136 | 155            | 100 | 17 |
| <b>M</b>  | 25 | 85    | -              | 110            | 120            | 9  | 112 | 145            | 80  | 15 |

| IEC          | D  | F | G    | P   | M   | N   | S  | T |
|--------------|----|---|------|-----|-----|-----|----|---|
| <b>71B5</b>  | 14 | 5 | 16.3 | 160 | 130 | 110 | 9  | 5 |
| <b>71B14</b> | 14 | 5 | 16.3 | 105 | 85  | 70  | 7  | 5 |
| <b>80B5</b>  | 19 | 6 | 21.8 | 200 | 165 | 130 | 11 | 5 |
| <b>80B14</b> | 19 | 6 | 21.8 | 120 | 100 | 80  | 7  | 5 |
| <b>90B5</b>  | 24 | 8 | 27.3 | 200 | 165 | 130 | 11 | 5 |
| <b>90B14</b> | 24 | 8 | 27.3 | 140 | 115 | 95  | 9  | 5 |

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

Quantity, availability and prices with Chiaravalli B2B

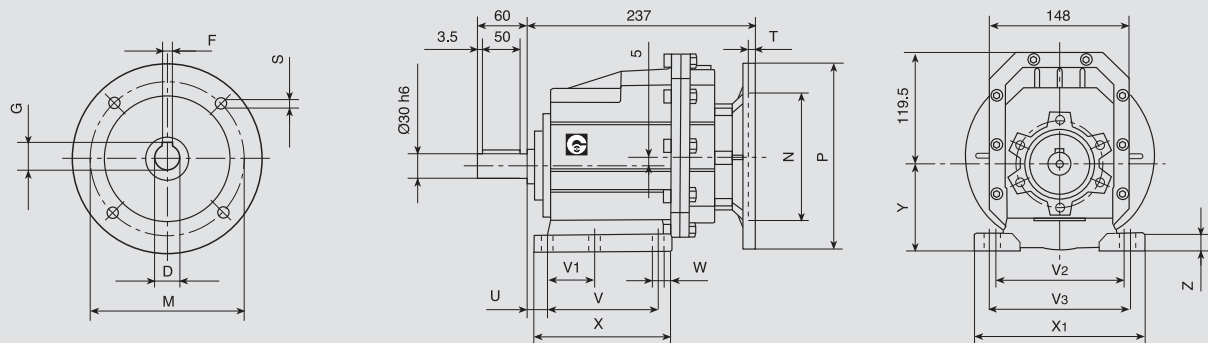




# DIMENSION SHEET

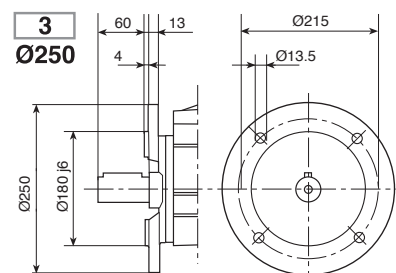
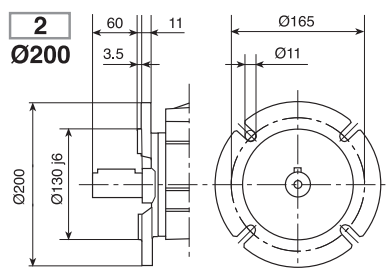
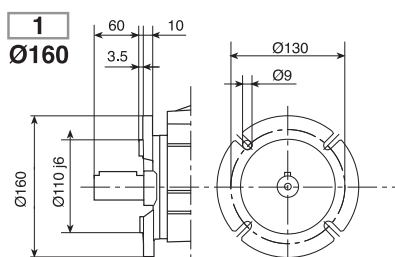
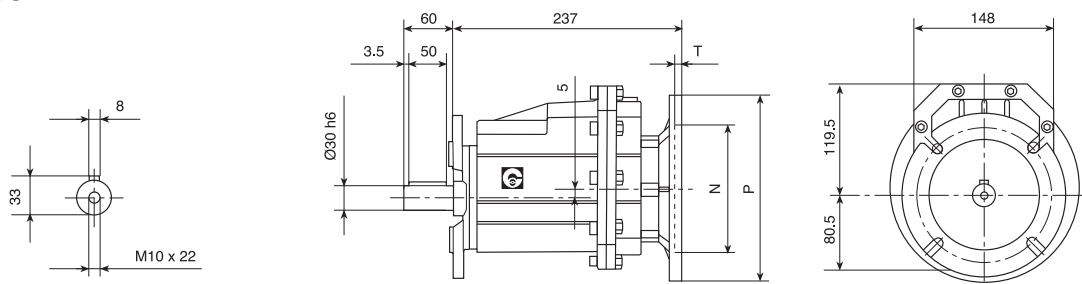
## CHC 30 P (IEC)

### INPUT

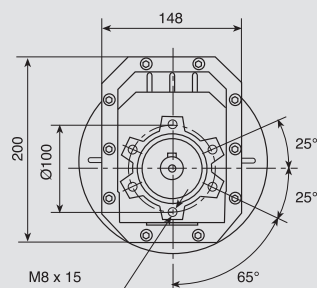
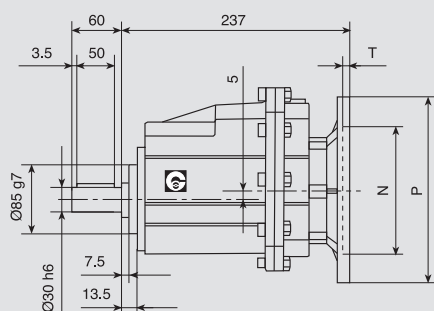


## CHC 30 F (IEC)

### OUTPUT



## CHC 30 (IEC)



kg. 9,2

| IEC               | D  | F | G    | P   | M   | N   | S    | T |
|-------------------|----|---|------|-----|-----|-----|------|---|
| <b>80B5</b>       | 19 | 6 | 21.8 | 200 | 165 | 130 | 11   | 5 |
| <b>80B14</b>      | 19 | 6 | 21.8 | 120 | 100 | 80  | 7    | 5 |
| <b>90B5</b>       | 24 | 8 | 27.3 | 200 | 165 | 130 | 11   | 5 |
| <b>90B14</b>      | 24 | 8 | 27.3 | 140 | 115 | 95  | 9    | 5 |
| <b>100/112B5</b>  | 28 | 8 | 31.3 | 250 | 215 | 180 | 13.5 | 5 |
| <b>100/112B14</b> | 28 | 8 | 31.3 | 160 | 130 | 110 | 9    | 5 |

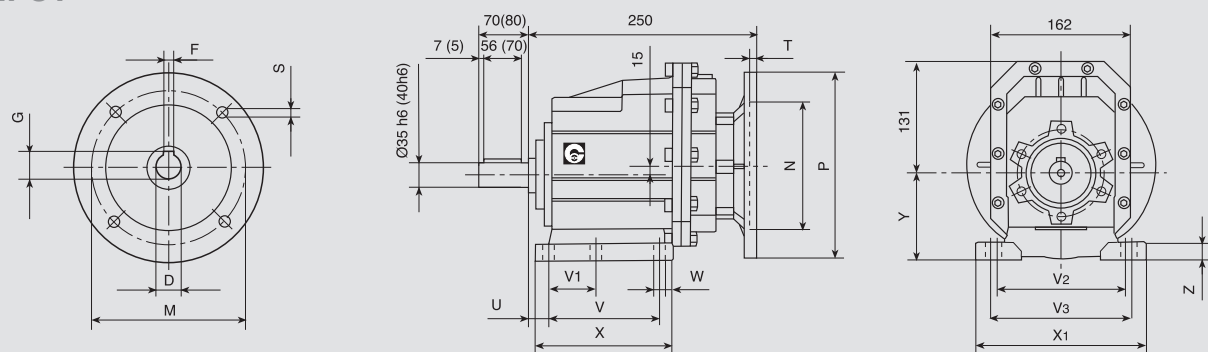
| Foot cod. | U  | V   | V1 | V2  | V3  | W  | X   | X1  | Y   | Z  |
|-----------|----|-----|----|-----|-----|----|-----|-----|-----|----|
| <b>B</b>  | 18 | 130 | 70 | -   | 160 | 11 | 156 | 190 | 110 | 20 |
| <b>M</b>  | 30 | 100 | -  | 135 | 150 | 11 | 150 | 190 | 110 | 18 |



# DIMENSION SHEET

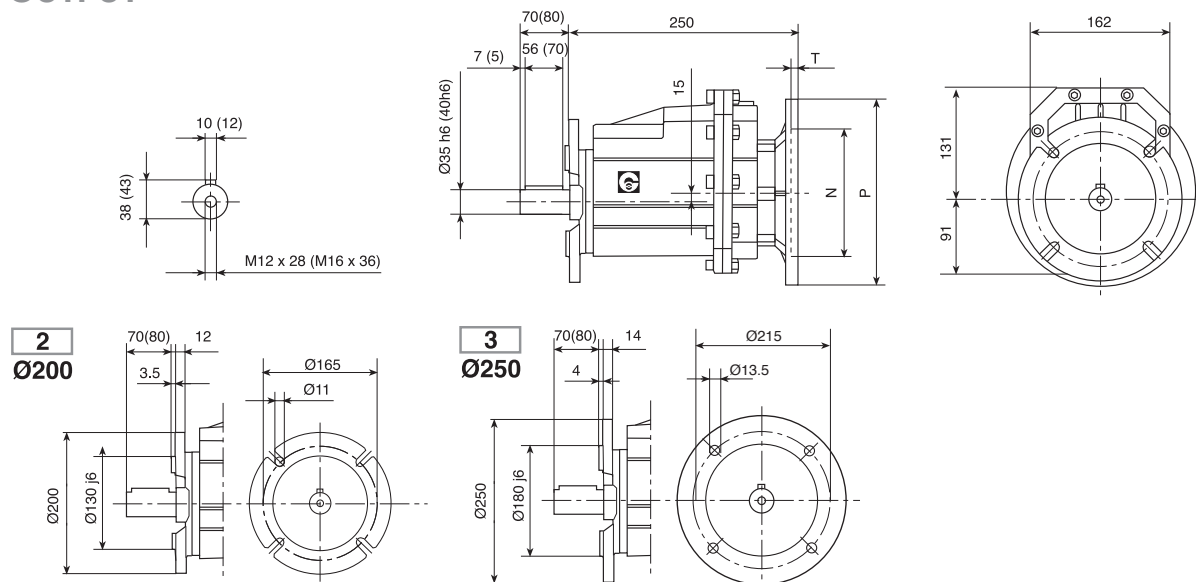
## CHC 35 - CHC 40 P (IEC)

### INPUT

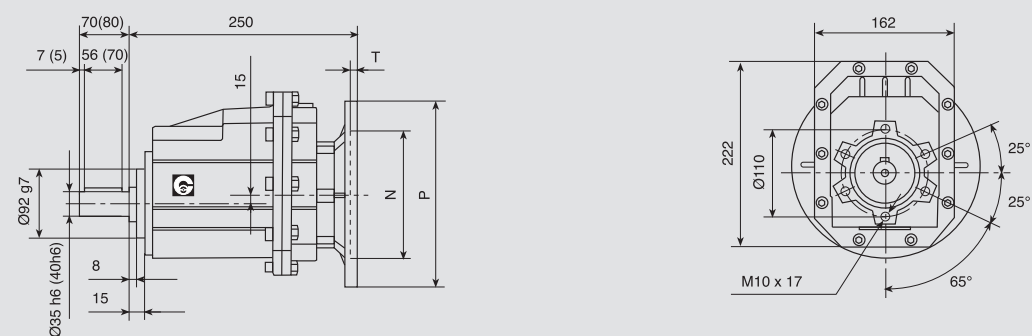


## CHC 35 - CHC 40 F (IEC)

### OUTPUT



## CHC 35 - CHC 40 (IEC)



kg. 12,2

| Foot cod. | U    | V     | V <sub>1</sub> | V <sub>2</sub> | V <sub>3</sub> | W  | X   | X <sub>1</sub> | Y   | Z  |
|-----------|------|-------|----------------|----------------|----------------|----|-----|----------------|-----|----|
| <b>B</b>  | 23.5 | 130   | -              | 170            | -              | 14 | 168 | 205            | 115 | 20 |
| <b>C</b>  | 19.5 | 149.5 | -              | 180            | -              | 14 | 185 | 215            | 130 | 20 |
| <b>M</b>  | 35   | 110   | -              | 170            | 185            | 14 | 150 | 230            | 120 | 20 |

(...) Between brackets CHC 40 dimension

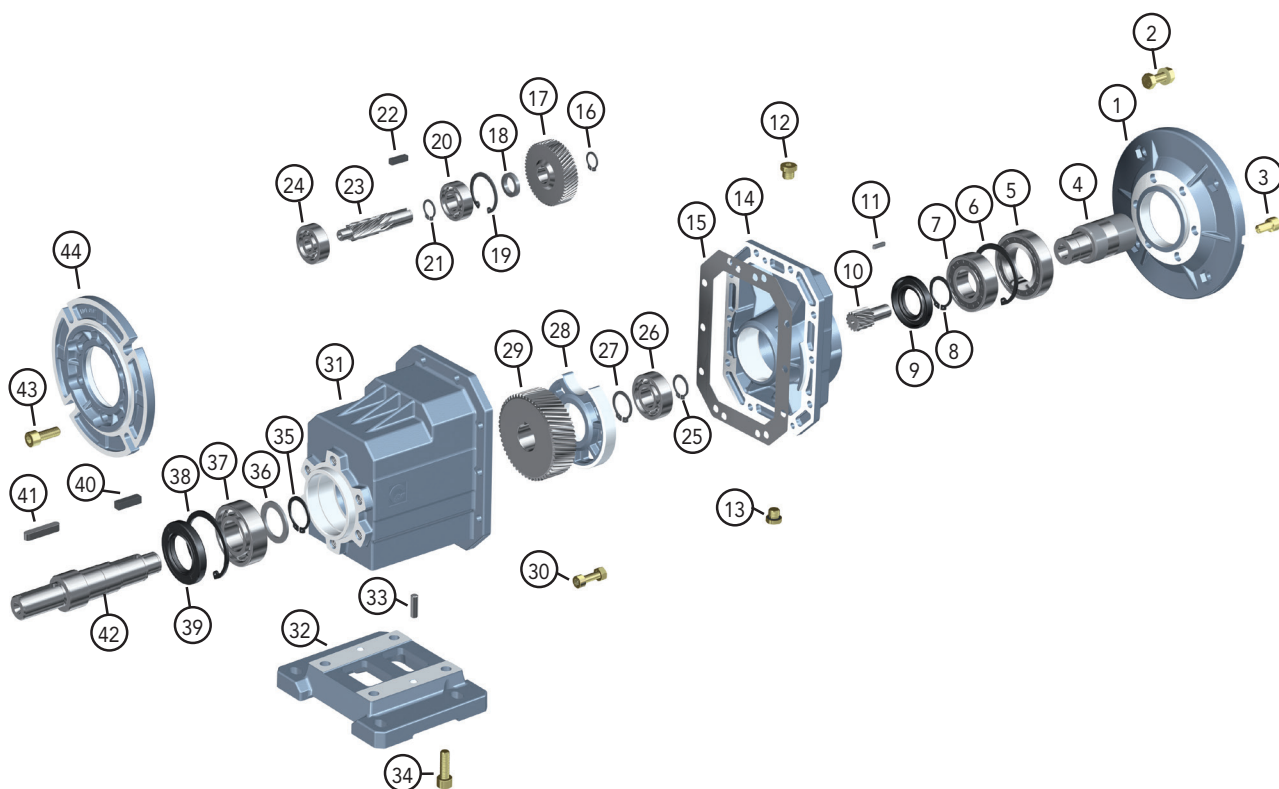
| IEC               | D  | F | G    | P   | M   | N   | S    | T |
|-------------------|----|---|------|-----|-----|-----|------|---|
| <b>80B5</b>       | 19 | 6 | 21.8 | 200 | 165 | 130 | 11   | 5 |
| <b>80B14</b>      | 19 | 6 | 21.8 | 120 | 100 | 80  | 7    | 5 |
| <b>90B5</b>       | 24 | 8 | 27.3 | 200 | 165 | 130 | 11   | 5 |
| <b>90B14</b>      | 24 | 8 | 27.3 | 140 | 115 | 95  | 9    | 5 |
| <b>100/112B5</b>  | 28 | 8 | 31.3 | 250 | 215 | 180 | 13.5 | 5 |
| <b>100/112B14</b> | 28 | 8 | 31.3 | 160 | 130 | 110 | 9    | 5 |

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  | MOTOR CONNECTION FLANGE | 23 | SECOND REDUCTION PINION |
| 2  | SCREW WITH NUT          | 24 | BEARING                 |
| 3  | HEXAGONAL-HEAD SCREW    | 25 | SEEGER                  |
| 4  | HOLE INPUT SHAFT        | 26 | BEARING                 |
| 5  | BEARING                 | 27 | SEEGER                  |
| 6  | SEEGER                  | 28 | INTERNAL SUPPORT        |
| 7  | BEARING                 | 29 | SECOND REDUCTION GEAR   |
| 8  | SEEGER                  | 30 | SCREW WITH NUT          |
| 9  | OIL SEAL                | 31 | HOUSING                 |
| 10 | FIRST REDUCTION PINION  | 32 | FOOT KIT                |
| 11 | KEY                     | 33 | DOWEL PIN               |
| 12 | OIL PLUG                | 34 | HEXAGONAL-HEAD SCREW    |
| 13 | OIL PLUG                | 35 | SEEGER                  |
| 14 | COVER                   | 36 | SPACER                  |
| 15 | GASKET                  | 37 | BEARING                 |
| 16 | SEEGER                  | 38 | SEEGER                  |
| 17 | FIRST REDUCTION GEAR    | 39 | OIL SEAL                |
| 18 | SPACER                  | 40 | KEY                     |
| 19 | SEEGER                  | 41 | KEY                     |
| 20 | BEARING                 | 42 | OUTPUT SHAFT            |
| 21 | SEEGER                  | 43 | HEXAGONAL-HEAD SCREW    |
| 22 | KEY                     | 44 | OUTPUT FLANGE           |



### 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 o 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

- The helical gearboxes are lubricated with permanent synthetic oil and therefore do not require any maintenance.

### 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.

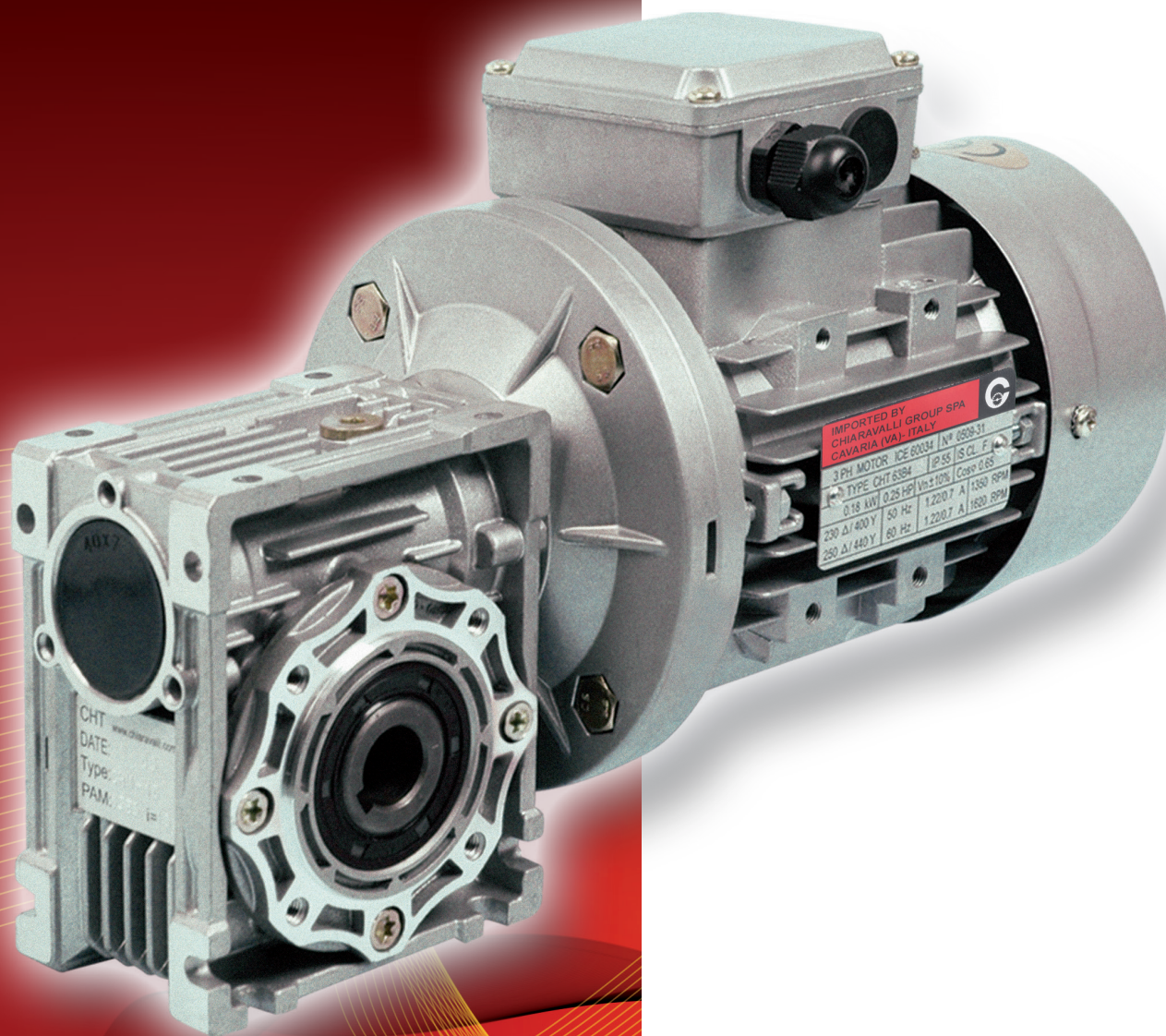
### HANDLING

- 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.

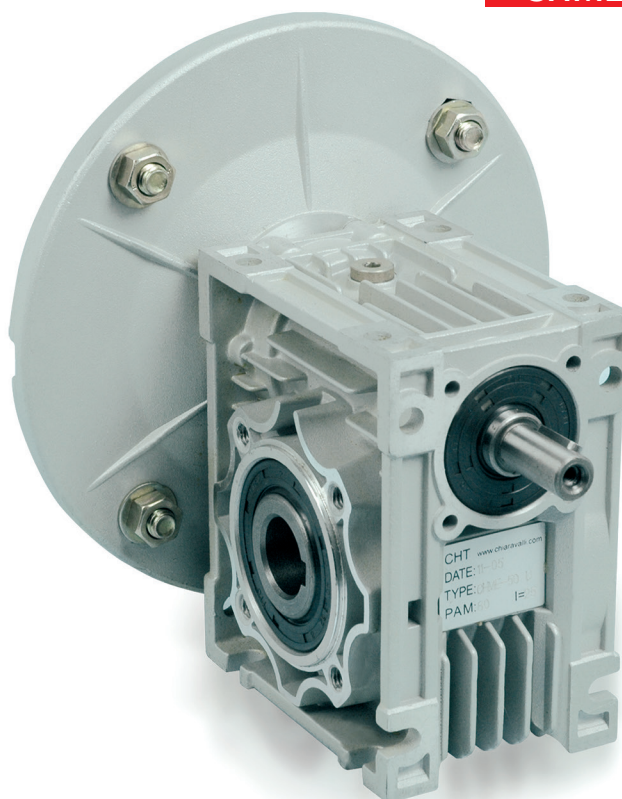




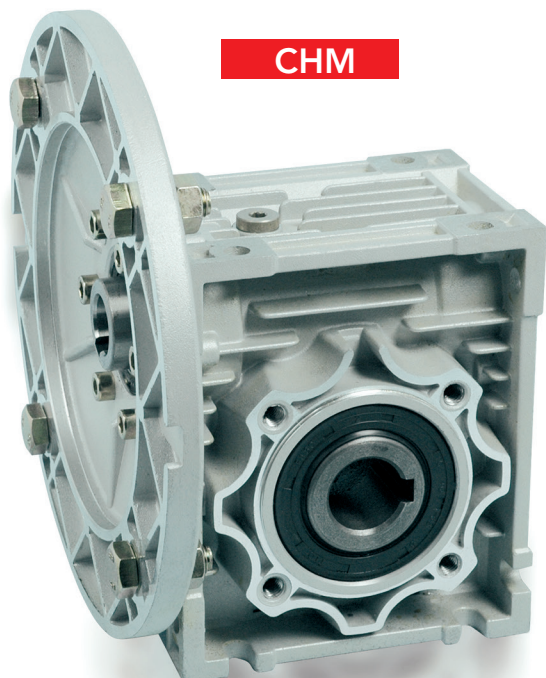
## CHM WORM GEARED MOTORS AND WORM GEAR UNITS



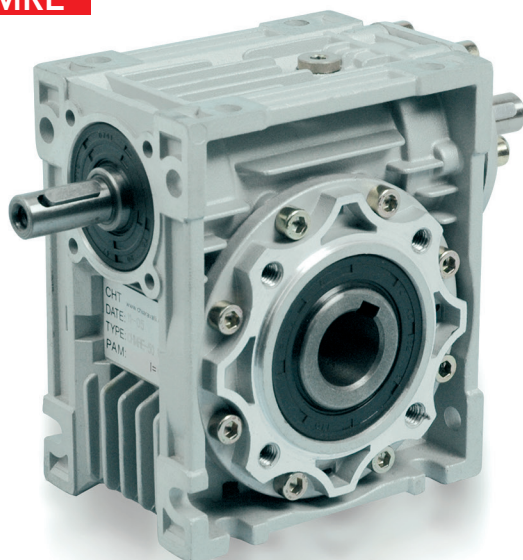
**CHME**



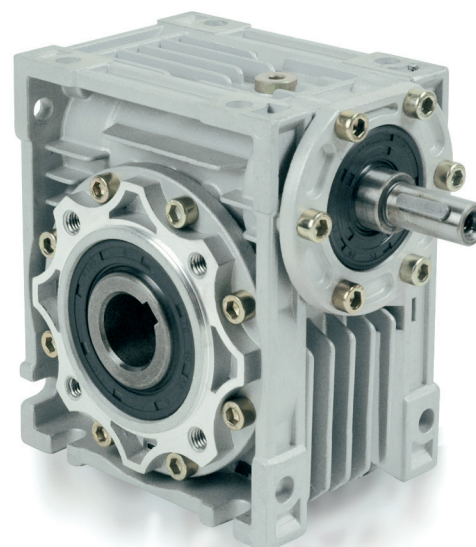
**CHM**



**CHMRE**



**CHMR**







## INTRODUCTION

The worm gears made by Chiaravalli Group S.p.A. are square and are considerably versatile for mounting. The machining of the components, carried out using numeric control machines, guarantees maximum precision for the restricted tolerances, producing a product that will remain reliable over time.

The groups are constructed with aluminium casings from sizes 025 to 090, while the sizes 110, 130 and 150 are made from cast iron.

All of the bodies are painted with RAL 9022 aluminium colour to protect the parts from aging and to give better protection against microblowholes that may be present in the aluminium.

The gears are supplied with at least one filling plug that is also used during testing to check for possible leaks.

A connection flange allows two gears to be combined in order to obtain high gear ratios.

Four sizes of CHPC pre-stage gears are available to pair with the gears; these are also constructed in aluminium and are painted like the worm gears.

All of the groups are supplied with a lubricant whose characteristics are described in the following table.

## LUBRICATION

|            | CHM 025/090      | CHM 110/150     |                 |                 | CHPC              |
|------------|------------------|-----------------|-----------------|-----------------|-------------------|
| Lubricant  | Synthetic        | Mineral         | Mineral         | Mineral         | Synthetic         |
| °C ambient | -25°C/+50°C      | -25°C/+50°C     | -5°C/+40°C      | -15°C/+25°C     | -25°C/+50°C       |
| ISO        | VG320            | VG320           | VG460           | VG220           | VG320             |
| AGIP       | TELIUM VSF 320   | BLASIA 320      | BLASIA 460      | BLASIA 220      | TELIUM VSF 320    |
| SHELL      | TIVELA OIL S 320 | OMALA OIL 320   | OMALA OIL 460   | OMALA OIL 220   | TIVELA OIL SC 320 |
| IP         | TELIUM VSF       | MELLANA OIL 320 | MELLANA OIL 460 | MELLANA OIL 220 | TELIUM VSF        |



## LUBRICATION

The size 025 to 090 gears are supplied complete with synthetic oil and therefore do not require any maintenance.

The size 110, 130 and 150 gears are supplied with the quantity of mineral oil foreseen for the B3 assembly position. It is the client's responsibility to adapt the quantity of oil to the assembly position and in addition, to substitute the filling plug, supplied closed for transport reasons, with the one equipped with a hole attached to the gear.

If the breather plug is not installed it may create internal pressure with a consequent leakage of oil from the oil seals.

For the sizes 110, 130 and 150 we recommend that the oil is changed after the running in period, approx. 300 working hours.

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

Quantity, availability and prices with Chiaravalli B2B



## QUANTITY OF OIL IN LITRES

| CHM          | 025  | 030  | 040  | 050  | 063  | 075  | 090 | 110 | 130 | 150 | CHPC | 63   | 71   | 80   | 90   |
|--------------|------|------|------|------|------|------|-----|-----|-----|-----|------|------|------|------|------|
| <b>B3</b>    | 0.02 | 0.04 | 0.08 | 0.15 | 0.30 | 0.55 | 1   | 3   | 4.5 | 7   |      | 0.05 | 0.07 | 0.15 | 0.16 |
| <b>B8</b>    | 0.02 | 0.04 | 0.08 | 0.15 | 0.30 | 0.55 | 1   | 1.4 | 1.7 | 5.1 |      | 0.05 | 0.07 | 0.15 | 0.16 |
| <b>B6/B7</b> | 0.02 | 0.04 | 0.08 | 0.15 | 0.30 | 0.55 | 1   | 2.2 | 3.3 | 5.4 |      | 0.05 | 0.07 | 0.15 | 0.16 |
| <b>V5</b>    | 0.02 | 0.04 | 0.08 | 0.15 | 0.30 | 0.55 | 1   | 3   | 4.5 | 7   |      | 0.05 | 0.07 | 0.15 | 0.16 |
| <b>V6</b>    | 0.02 | 0.04 | 0.08 | 0.15 | 0.30 | 0.55 | 1   | 2.2 | 3.3 | 5.1 |      | 0.05 | 0.07 | 0.15 | 0.16 |



## MOTOR MOUNTING FLANGES

Gears that are supplied with mounting flanges must be assembled with motors whose shaft and flange tolerances correspond to a "normal class" of quality in order to avoid vibration and forcing of the input bearing. Motors supplied by Chiaravalli Group S.p.A. guarantee that this requirement is fulfilled.

For ease of consultation, the correspondence of the size of the B5 and B14 motor with the sizes of the shaft and the motor connection flange are shown in the following table.

Remember that, as the motor connection flanges are separate from the body it is also possible to have a shaft / flange combination that does not correspond to the table, e.g. 19/140, thereby offering adaptability for other non-unified models such as the brushless or direct current types.

| MMF        | 056   | 063    | 071    | 080    | 090    | 100    | 112    | 132    |
|------------|-------|--------|--------|--------|--------|--------|--------|--------|
| <b>B5</b>  | 9/120 | 11/140 | 14/160 | 19/200 | 24/200 | 28/250 | 28/250 | 38/300 |
| <b>B14</b> | 9/80  | 11/90  | 14/105 | 19/120 | 24/140 | 28/160 | 28/160 | 38/200 |





## CHM/CHMR/CHME/CHMRE DESIGNATION

| TYPE (1) | SIZE (2) | VERSION (3) | FLANGE POS. (4) | i   | M.M.F.                    | MOUNT. POS. (4) |
|----------|----------|-------------|-----------------|-----|---------------------------|-----------------|
| CHM      | 025      | FA          | 1               | 7.5 | SEE FROM<br>PAGE 31 TO 40 | U UNIVERSALE    |
|          | 030      | FB          | 2               | 10  |                           | B3              |
| CHMR     | 040      | FC          |                 | 15  |                           | B8              |
|          | 050      | FD          |                 | 20  |                           | B6              |
| CHME     | 063      | FE          |                 | 25  |                           | B7              |
|          | 075      |             |                 | 30  |                           | V5              |
| CHMRE    | 090      |             |                 | 40  |                           | V6              |
|          | 110      |             |                 | 50  |                           |                 |
|          | 130      |             |                 | 60  |                           |                 |
|          | 150      |             |                 | 80  |                           |                 |
|          |          |             |                 | 100 |                           |                 |



## ORDER EXAMPLE

|     |     |        |       |    |        |    |
|-----|-----|--------|-------|----|--------|----|
| CHM | 090 | FA (5) | 2 (5) | 30 | 90 B14 | V5 |
|-----|-----|--------|-------|----|--------|----|

If the motor is also required, please specify:

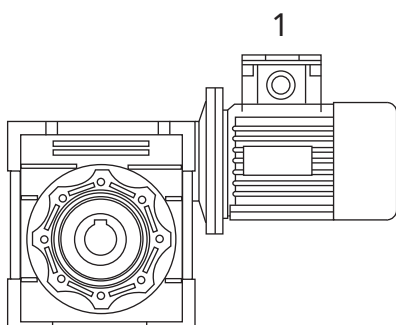
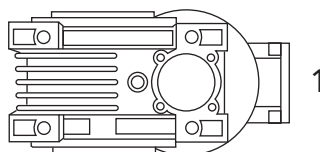
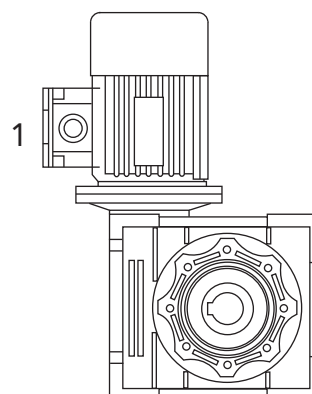
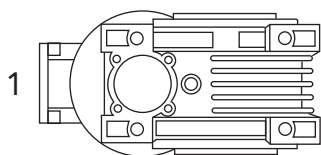
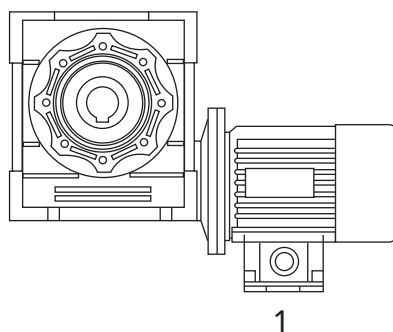
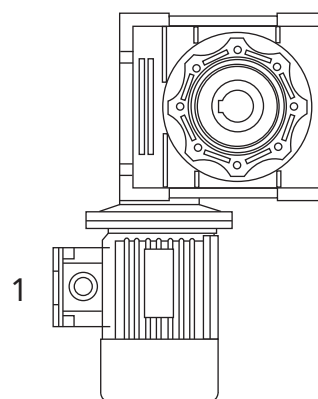
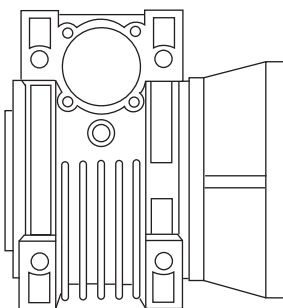
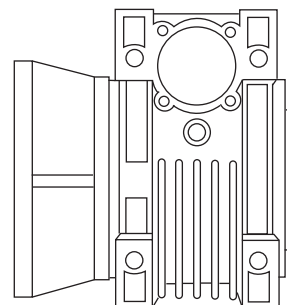
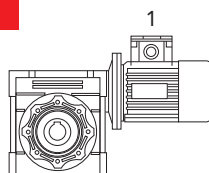
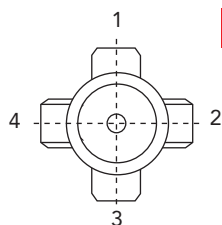
Size es. 90 L4  
 Power es. Kw 1.5  
 Poles es. 4  
 Voltage es. V230/400  
 Frequency es. 50 Hz  
 Flange es. B14

N.B. From size 25 to 63 the gears are always supplied in the Universal position and can therefore be mounted in any position, from size 75 to size 130 if the position required differs from B3 it must be specified.  
 In particular, in the event that a gear in position B3 is to be mounted in positions V5 or V6, the bearing positioned in the upper side must be lubricated using suitable grease that ensures proper lubrication.  
 We have tested Tecnolubeseal POLYMER 400/2 grease.

- 1) see page 26
- 2) see from page 31 to page 40
- 3) see from page 31 to page 40
- 4) see page 30
- 5) lack of instructions indicates that the gear is not equipped with an output flange.



## MOUNTING POSITION

**B3****B6****V5****B7****B8****V6****F...1****F...2****B3**

### TERMINAL BOX POSITION

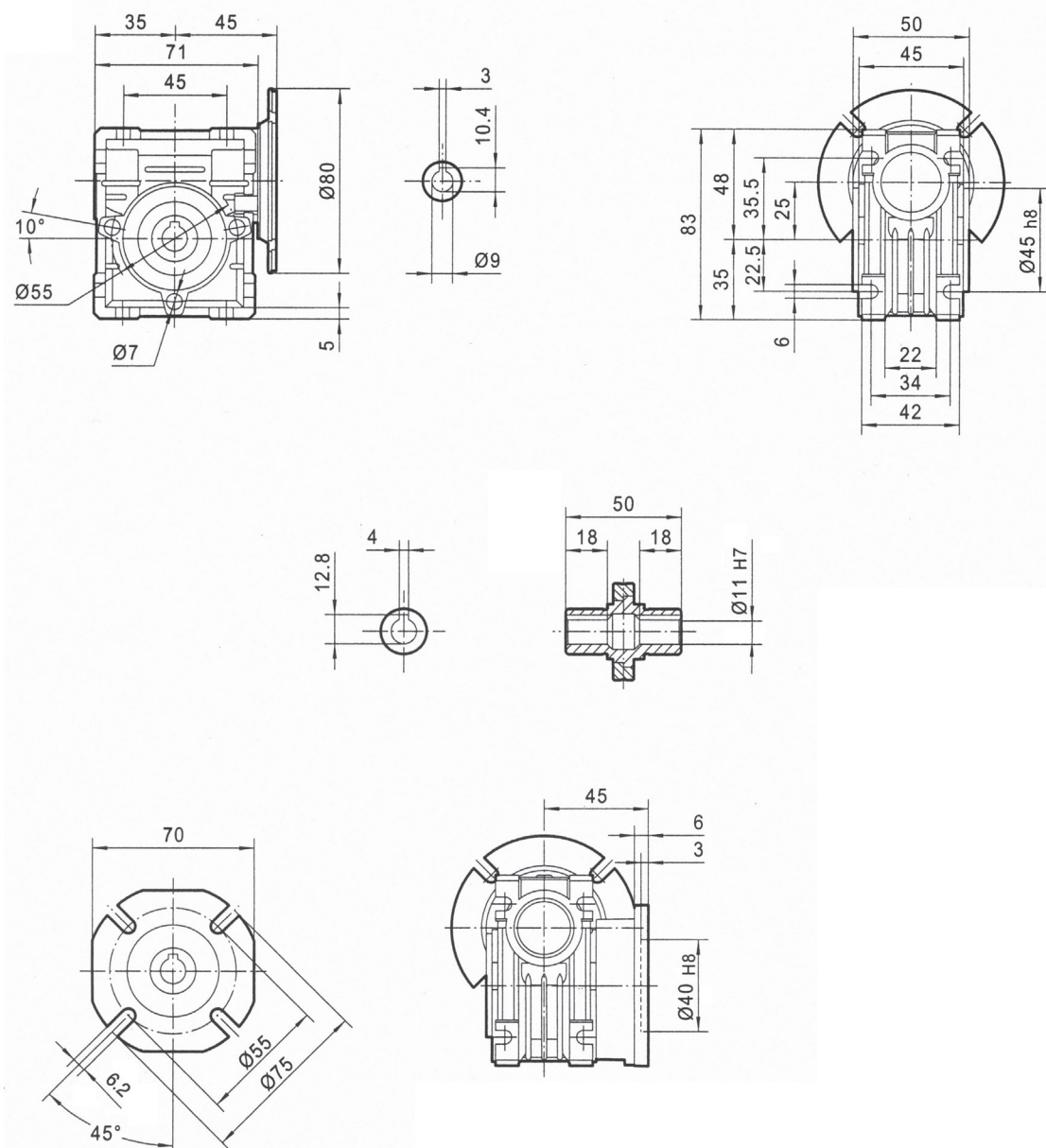
N.B. The position of the terminal box always refers to the B3 position.



## CHM 025 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE    | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |     |
|---------|---------|----------|-------|-------|------|-------------------------------------|-----|
| CHM 025 | 7.5     | 186.7    | 0.09  | 3.8   | 2.8  | 56                                  | B14 |
|         | 10      | 140.0    | 0.09  | 5     | 2.4  | 56                                  | B14 |
|         | 15      | 93.3     | 0.09  | 7.2   | 1.6  | 56                                  | B14 |
|         | 20      | 70.0     | 0.09  | 9     | 1.3  | 56                                  | B14 |
|         | 25      | 56.0     | 0.09  | 10    | 1.0  | 56                                  | B14 |
|         | 30      | 46.7     | 0.09  | 12.3  | 1.1  | 56                                  | B14 |
|         | 40      | 35.0     | 0.09  | 13    | 1.0  | 56                                  | B14 |
|         | 50      | 28.0     | 0.09  | 14    | 0.7  | 56                                  | B14 |
|         | 60      | 23.3     | 0.09  | 14    | 0.6  | 56                                  | B14 |

### DIMENSIONS



FA

Weight 0.7 Kg excluding motor

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

Quantity, availability and prices with Chiaravalli B2B

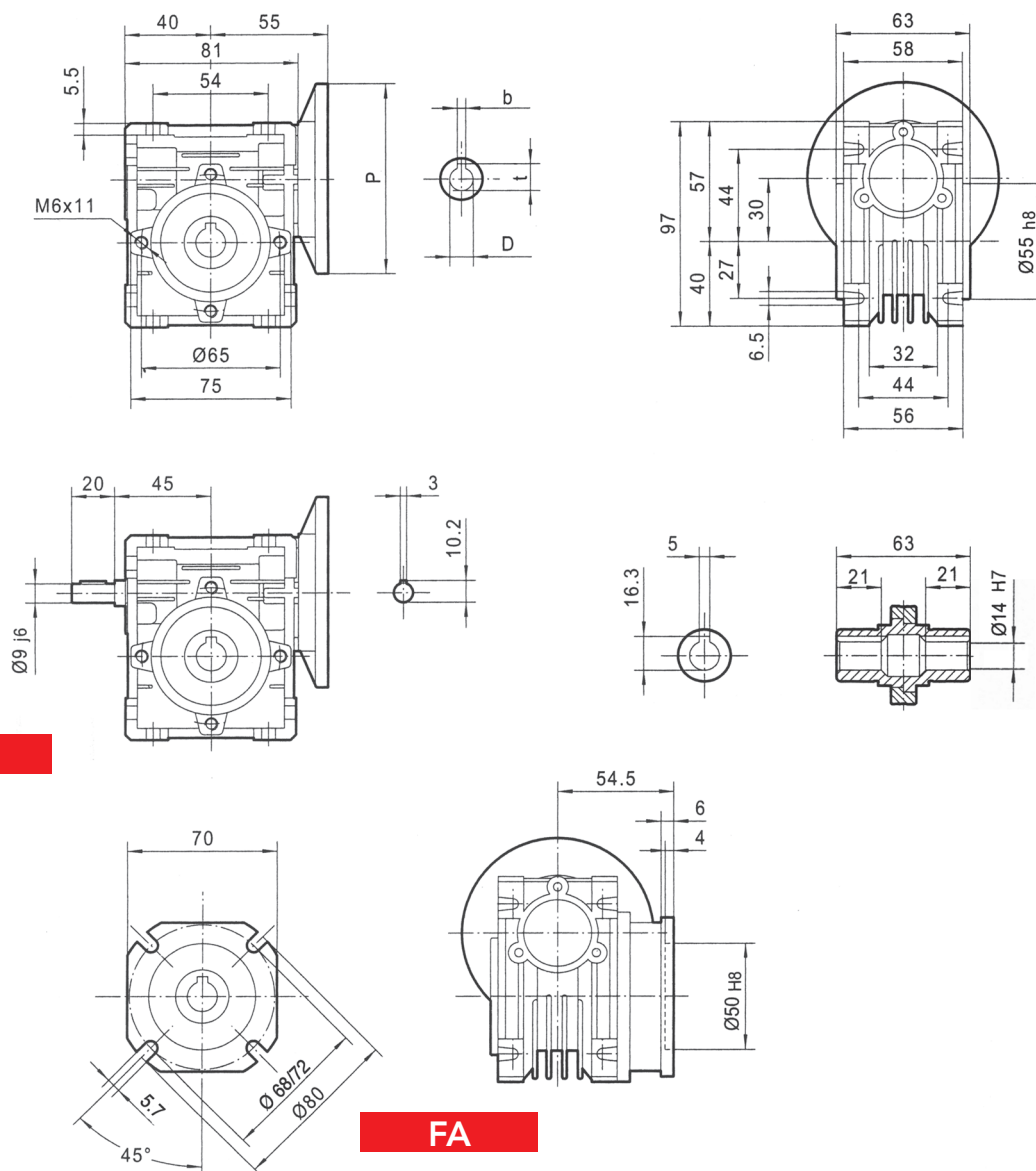


# CHM 030 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE    | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |        |
|---------|---------|----------|-------|-------|------|-------------------------------------|--------|
| CHM 030 | 7.5     | 186.7    | 0.22  | 9     | 2.1  | 63/56                               | B5/B14 |
|         | 10      | 140.0    | 0.22  | 11    | 1.6  | 63/56                               | B5/B14 |
|         | 15      | 93.3     | 0.22  | 16    | 1.0  | 63/56                               | B5/B14 |
|         | 20      | 70.0     | 0.22  | 20    | 0.9  | 63/56                               | B5/B14 |
|         | 25      | 56.0     | 0.18  | 20    | 1.0  | 63/56                               | B5/B14 |
|         | 30      | 46.7     | 0.18  | 22    | 0.9  | 63/56                               | B5/B14 |
|         | 40      | 35.0     | 0.18  | 21    | 0.8  | 63/56                               | B5/B14 |
|         | 50      | 28.0     | 0.18  | 19    | 0.8  | 63/56                               | B5/B14 |
|         | 60      | 23.3     | 0.09  | 18    | 0.9  | 56                                  | B5/B14 |
|         | 80      | 17.5     | 0.09  | 13    | 0.9  | 56                                  | B5/B14 |

i = 5 ON REQUEST

## DIMENSIONS



Weight 1.2 Kg excluding motor

| PAM IEC | P   | DE8 | b | t    |
|---------|-----|-----|---|------|
| 63B5    | 140 | 11  | 4 | 12.8 |
| 56B5    | 120 | 9   | 3 | 10.4 |

| PAM IEC | P  | DE8 | b | t    |
|---------|----|-----|---|------|
| 63B14   | 90 | 11  | 4 | 12.8 |
| 56B14   | 80 | 9   | 3 | 10.4 |





# CHM 040 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

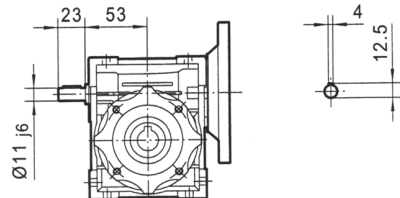
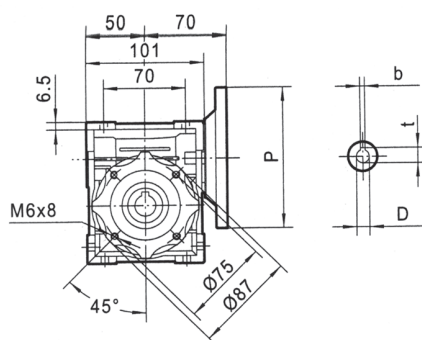
| TYPE    | i=ratio | n2 r/min | Kw=P1  | Nm=T2 | f.s. | Possible types of motor connections |         |
|---------|---------|----------|--------|-------|------|-------------------------------------|---------|
| CHM 040 | 7.5     | 186.7    | 0.55** | 22    | 1.6  | 71/63                               | B5/B14  |
|         | 10      | 140.0    | 0.55** | 30    | 1.4  | 71/63                               | B5/B14  |
|         | 15      | 93.3     | 0.55** | 44    | 0.9  | 71/63                               | B5/B14  |
|         | 20      | 70.0     | 0.55** | 38    | 1.0  | 71/63                               | B5/B14  |
|         | 25      | 56.0     | 0.37   | 45    | 0.9  | 71/63                               | B5/B14  |
|         | 30      | 46.7     | 0.37   | 52    | 0.8  | 71/63                               | B5/B14  |
|         | 40      | 35.0     | 0.25   | 43    | 0.9  | 71/63                               | B5/B14  |
|         | 50      | 28.0     | 0.22   | 44    | 0.9  | 63/56                               | B5/B14* |
|         | 60      | 23.3     | 0.18   | 42    | 0.8  | 63/56                               | B5/B14* |
|         | 80      | 17.5     | 0.18   | 36    | 0.8  | 63/56                               | B5/B14* |
|         | 100     | 14.0     | 0.18   | 35    | 0.8  | 63/56                               | B5/B14* |

\* 56 only B5

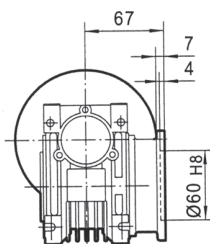
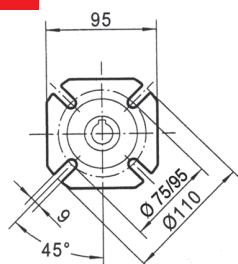
\*\* Size 71 Motors

i = 5 ON REQUEST

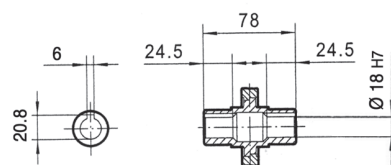
## DIMENSIONS



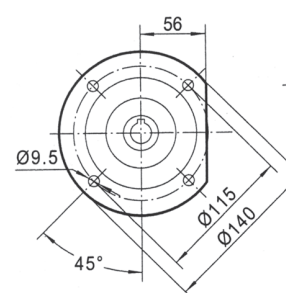
E



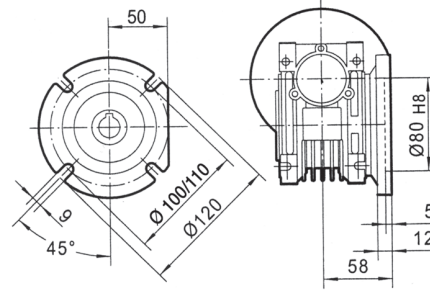
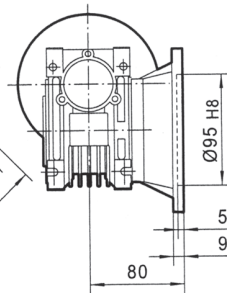
FA



FB



FC



FD

| PAM IEC | P   | DE8 | b | t    |
|---------|-----|-----|---|------|
| 71B5    | 160 | 14  | 5 | 16.3 |
| 63B5    | 140 | 11  | 4 | 12.8 |
| 56B5    | 120 | 9   | 3 | 10.4 |

| PAM IEC | P   | DE8 | b | t    |
|---------|-----|-----|---|------|
| 71B14   | 105 | 14  | 5 | 16.3 |
| 63B14   | 90  | 11  | 4 | 12.8 |

Weight 2.3 Kg excluding motor

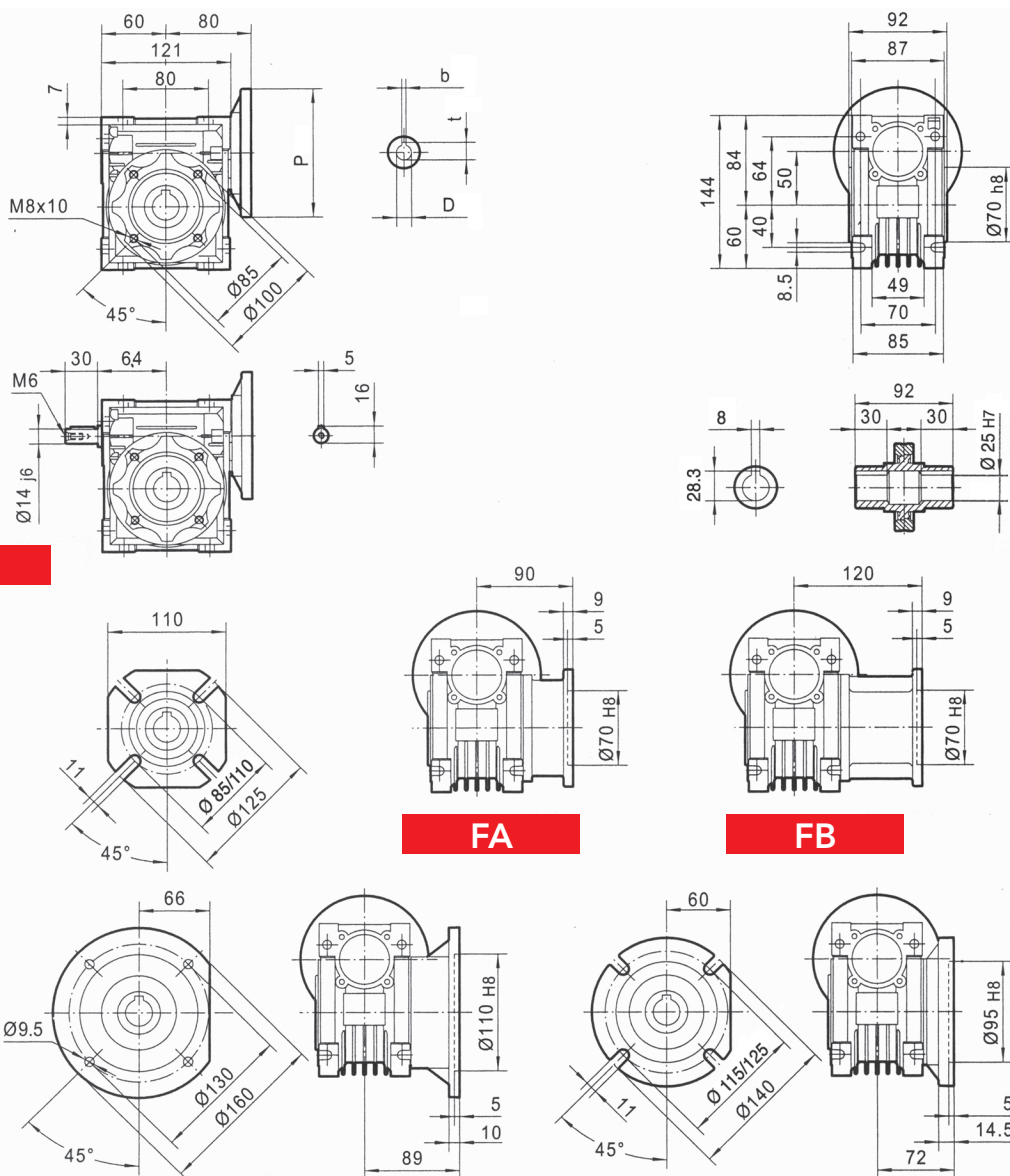


# CHM 050 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE    | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |         |
|---------|---------|----------|-------|-------|------|-------------------------------------|---------|
| CHM 050 | 7.5     | 186.7    | 0.75  | 33.3  | 2.0  | 80/71                               | B5/B14  |
|         | 10      | 140.0    | 0.75  | 43.9  | 1.6  | 80/71                               | B5/B14  |
|         | 15      | 93.3     | 0.75  | 62.6  | 1.2  | 80/71                               | B5/B14  |
|         | 20      | 70.0     | 0.75  | 80    | 0.9  | 80/71                               | B5/B14  |
|         | 25      | 56.0     | 0.55  | 70    | 1.0  | 80/71                               | B5/B14  |
|         | 30      | 46.7     | 0.55  | 80    | 1.0  | 80/71                               | B5/B14  |
|         | 40      | 35.0     | 0.37  | 67    | 1.1  | 80/71/63                            | B5/B14* |
|         | 50      | 28.0     | 0.37  | 78    | 0.9  | 71/63                               | B5/B14* |
|         | 60      | 23.3     | 0.37  | 87    | 0.8  | 71/63                               | B5/B14* |
|         | 80      | 17.5     | 0.25  | 70    | 0.9  | 71/63                               | B5/B14* |
|         | 100     | 14.0     | 0.18  | 59    | 0.9  | 71/63                               | B5/B14* |

\* 63 only B5      i = 5    ON REQUEST

## DIMENSIONS



**FC**

**FA**

**FB**

**FD**

Weight 3.5 Kg excluding motor

| PAM IEC | P   | DE8 | b | t    | PAM IEC | P   | DE8 | b | t    |
|---------|-----|-----|---|------|---------|-----|-----|---|------|
| 80B5    | 200 | 19  | 6 | 21.8 | 80B14   | 120 | 19  | 6 | 21.8 |
| 71B5    | 160 | 14  | 5 | 16.3 | 71B14   | 105 | 14  | 5 | 16.3 |
| 63B5    | 140 | 11  | 4 | 12.8 |         |     |     |   |      |

CHM 063



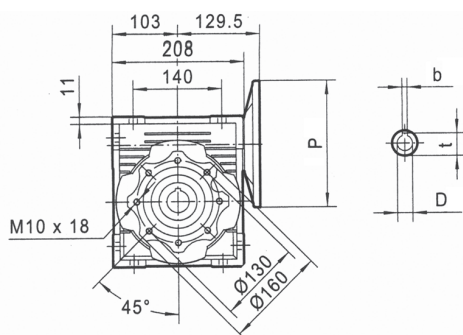




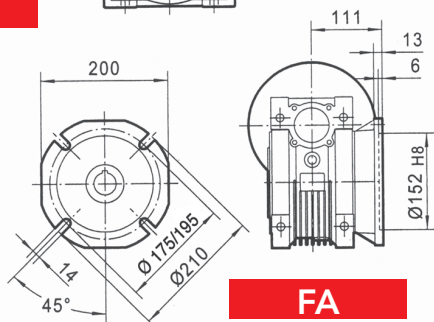
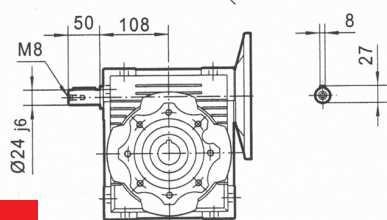
# CHM 090 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE    | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |        |
|---------|---------|----------|-------|-------|------|-------------------------------------|--------|
| CHM 090 | 7.5     | 186.7    | 4.00  | 184   | 1.5  | 100/90                              | B5/B14 |
|         | 10      | 140.0    | 4.00  | 242   | 1.3  | 100/90                              | B5/B14 |
|         | 15      | 93.3     | 4.00  | 351   | 1.1  | 100/90                              | B5/B14 |
|         | 20      | 70.0     | 4.00  | 456   | 0.8  | 100/90                              | B5/B14 |
|         | 25      | 56.0     | 3.00  | 417   | 0.8  | 100/90                              | B5/B14 |
|         | 30      | 46.7     | 3.00  | 478   | 0.9  | 100/90                              | B5/B14 |
|         | 40      | 35.0     | 1.50  | 306   | 1.2  | 90/80                               | B5/B14 |
|         | 50      | 28.0     | 1.50  | 367   | 1.0  | 90/80                               | B5/B14 |
|         | 60      | 23.3     | 1.50  | 421   | 0.8  | 90/80                               | B5/B14 |
|         | 80      | 17.5     | 0.75  | 257   | 1.1  | 80                                  | B5/B14 |
|         | 100     | 14.0     | 0.75  | 300   | 0.9  | 80                                  | B5/B14 |

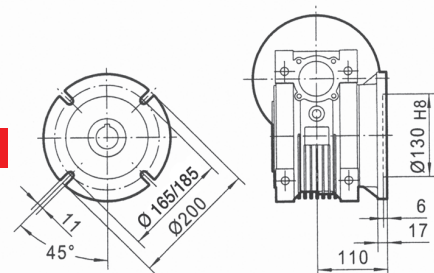
## DIMENSIONS



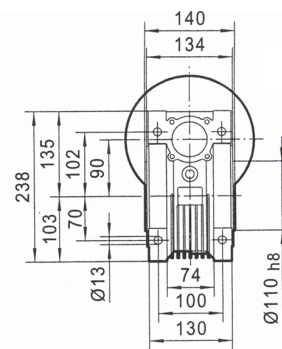
**E**



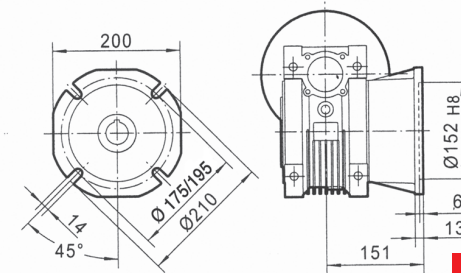
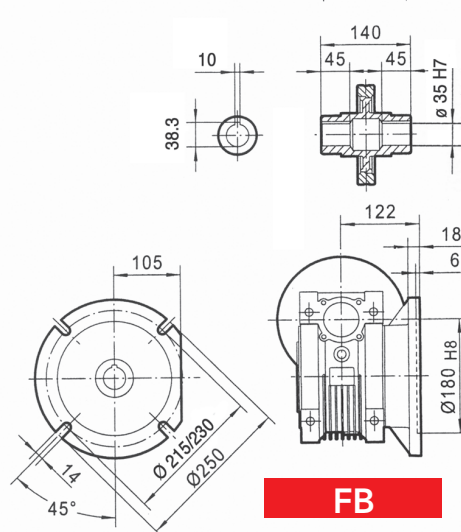
**FA**



**FC**



**FB**



**FD**

| PAM IEC   | P   | D <sub>E8</sub> | b | t    |
|-----------|-----|-----------------|---|------|
| 100/112B5 | 250 | 28              | 8 | 31.3 |
| 90B5      | 200 | 24              | 8 | 27.3 |
| 80B5      | 200 | 19              | 6 | 21.8 |

| PAM IEC    | P   | D <sub>E8</sub> | b | t    |
|------------|-----|-----------------|---|------|
| 100/112B14 | 160 | 28              | 8 | 31.3 |
| 90B14      | 140 | 24              | 8 | 27.3 |
| 80B14      | 120 | 19              | 6 | 21.8 |

Weight 13 Kg excluding motor

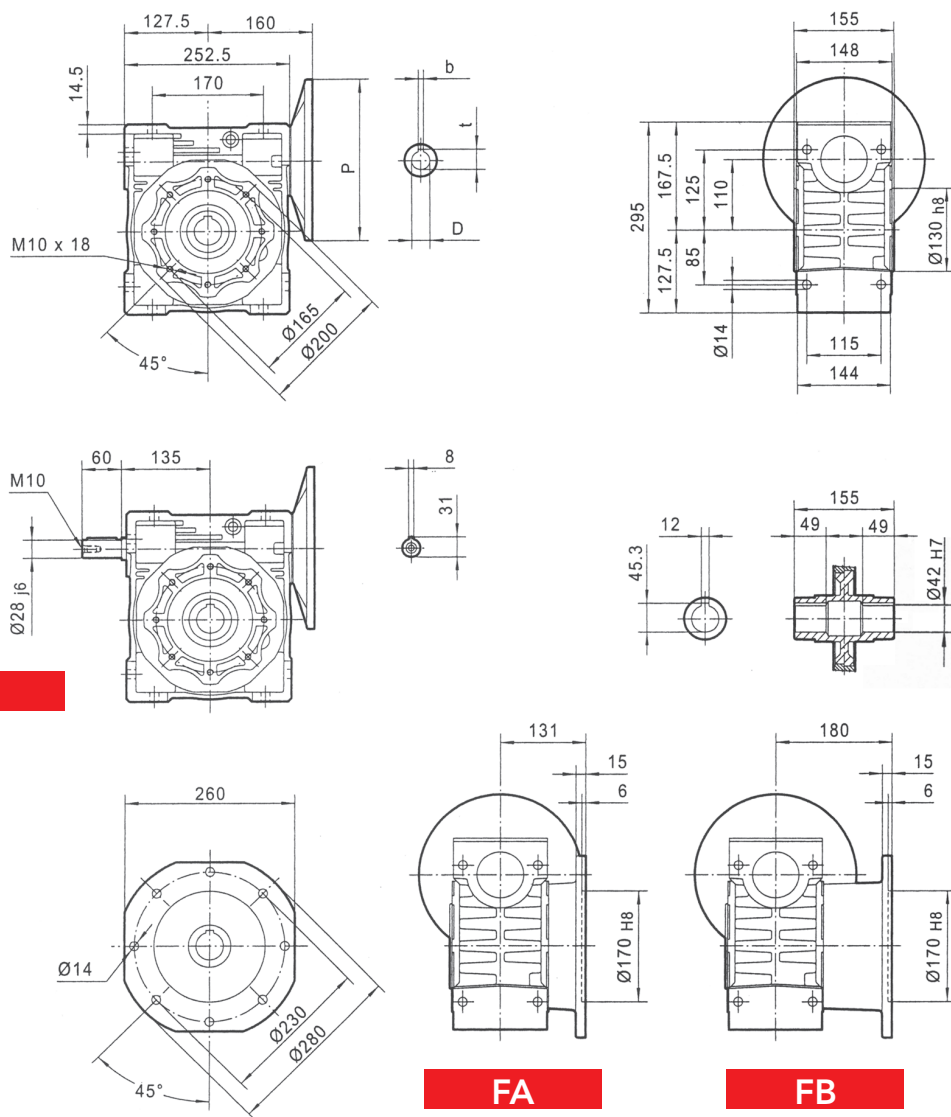


# CHM 110 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE    | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |         |
|---------|---------|----------|-------|-------|------|-------------------------------------|---------|
| CHM 110 | 7.5     | 186.7    | 7.50  | 344   | 1.6  | 132/112/100                         | B5/B14  |
|         | 10      | 140.0    | 7.50  | 453   | 1.3  | 132/112/100                         | B5/B14  |
|         | 15      | 93.3     | 7.50  | 659   | 1.0  | 132/112/100                         | B5/B14  |
|         | 20      | 70.0     | 5.50  | 635   | 1.0  | 132/112/100                         | B5/B14  |
|         | 25      | 56.0     | 4.00  | 573   | 1.2  | 112/100                             | B5/B14  |
|         | 30      | 46.7     | 4.00  | 645   | 1.1  | 112/100                             | B5/B14  |
|         | 40      | 35.0     | 3.00  | 636   | 1.1  | 112/100/90                          | B5/B14* |
|         | 50      | 28.0     | 3.00  | 764   | 0.9  | 112/100/90                          | B5/B14* |
|         | 60      | 23.3     | 2.20  | 645   | 1.0  | 112/100/90                          | B5/B14* |
|         | 80      | 17.5     | 1.50  | 546   | 0.9  | 90                                  | B5/B14* |
|         | 100     | 14.0     | 1.10  | 470   | 1.0  | 90                                  | B5/B14* |

\* 90 only B5

## DIMENSIONS



Weight 35 Kg excluding motor

| PAM IEC | P   | DE8 | b  | t    |
|---------|-----|-----|----|------|
| 132B5   | 300 | 38  | 10 | 41.3 |
| 112B5   | 250 | 28  | 8  | 31.3 |
| 100B5   | 250 | 28  | 8  | 31.3 |
| 90B5    | 200 | 24  | 8  | 27.3 |
| 80B5    | 200 | 19  | 6  | 21.8 |

| PAM IEC | P   | DE8 | b  | t    |
|---------|-----|-----|----|------|
| 132B14  | 200 | 38  | 10 | 41.3 |
| 112B14  | 160 | 28  | 8  | 31.3 |
| 100B14  | 160 | 28  | 8  | 31.3 |
|         |     |     |    |      |
|         |     |     |    |      |

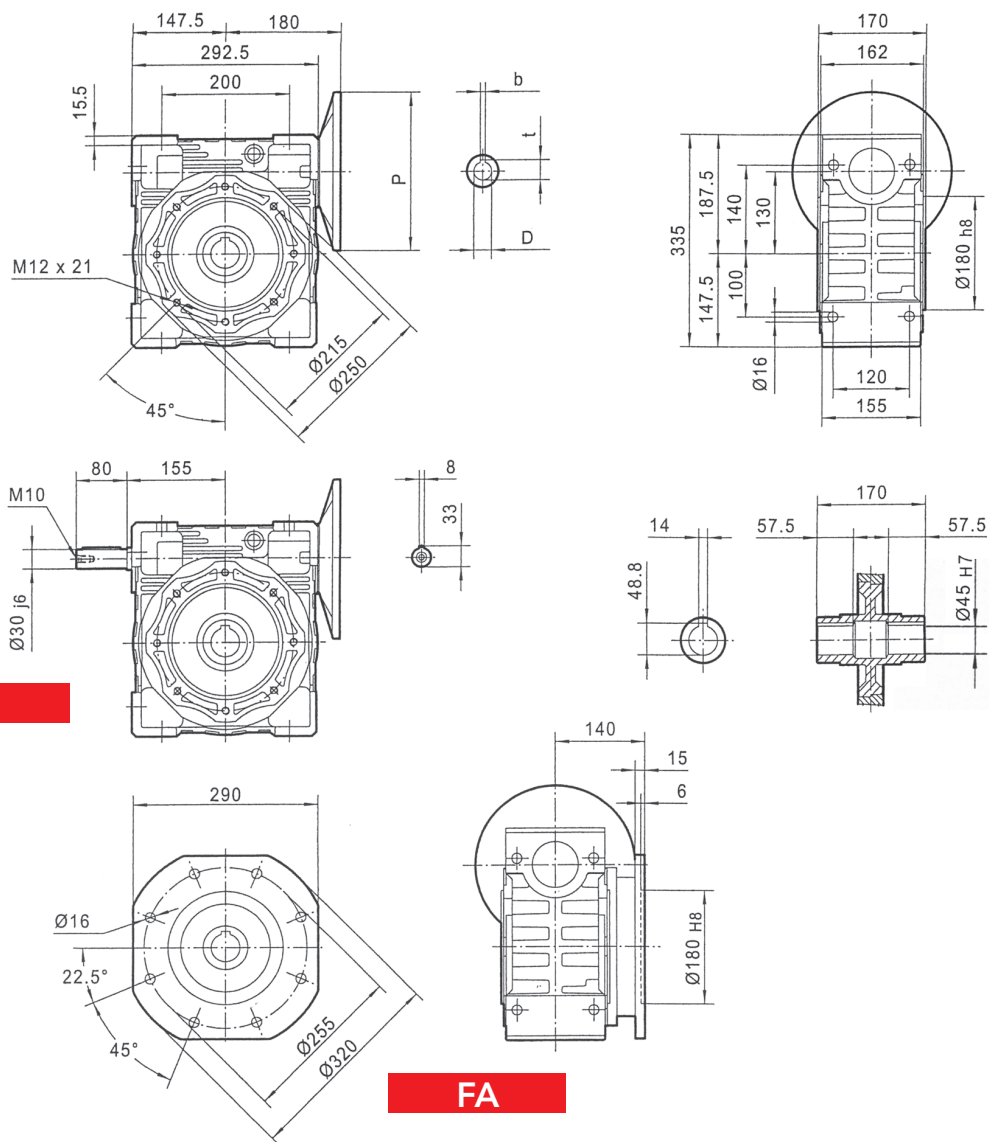


# CHM 130 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE    | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |         |
|---------|---------|----------|-------|-------|------|-------------------------------------|---------|
| CHM 130 | 7.5     | 186.7    | 7.50  | 348   | 2.2  | 132                                 | B5/B14  |
|         | 10      | 140.0    | 7.50  | 455   | 1.8  | 132                                 | B5/B14  |
|         | 15      | 93.3     | 7.50  | 660   | 1.2  | 132                                 | B5/B14  |
|         | 20      | 70.0     | 7.50  | 877   | 1.0  | 132                                 | B5/B14  |
|         | 25      | 56.0     | 7.50  | 1071  | 0.9  | 132                                 | B5/B14  |
|         | 30      | 46.7     | 7.50  | 1225  | 0.8  | 132/112/100                         | B5/B14  |
|         | 40      | 35.0     | 5.50  | 1173  | 0.9  | 132/112/100                         | B5/B14  |
|         | 50      | 28.0     | 4.00  | 1023  | 0.9  | 100                                 | B5/B14  |
|         | 60      | 23.3     | 3.00  | 886   | 1.1  | 100                                 | B5/B14  |
|         | 80      | 17.5     | 3.00  | 1112  | 0.8  | 100/90                              | B5/B14* |
|         | 100     | 14.0     | 1.50  | 652   | 1.1  | 100/90                              | B5/B14* |

\* 90 only B5

## DIMENSIONS



| PAM IEC | P   | DE8 | b  | t    | PAM IEC | P   | DE8 | b  | t    |
|---------|-----|-----|----|------|---------|-----|-----|----|------|
| 132B5   | 300 | 38  | 10 | 41.3 | 132B14  | 200 | 38  | 10 | 41.3 |
| 112B5   | 250 | 28  | 8  | 31.3 | 112B14  | 160 | 28  | 8  | 31.3 |
| 100B5   | 250 | 28  | 8  | 31.3 | 100B14  | 160 | 28  | 8  | 31.3 |
| 90B5    | 200 | 24  | 8  | 27.3 |         |     |     |    |      |

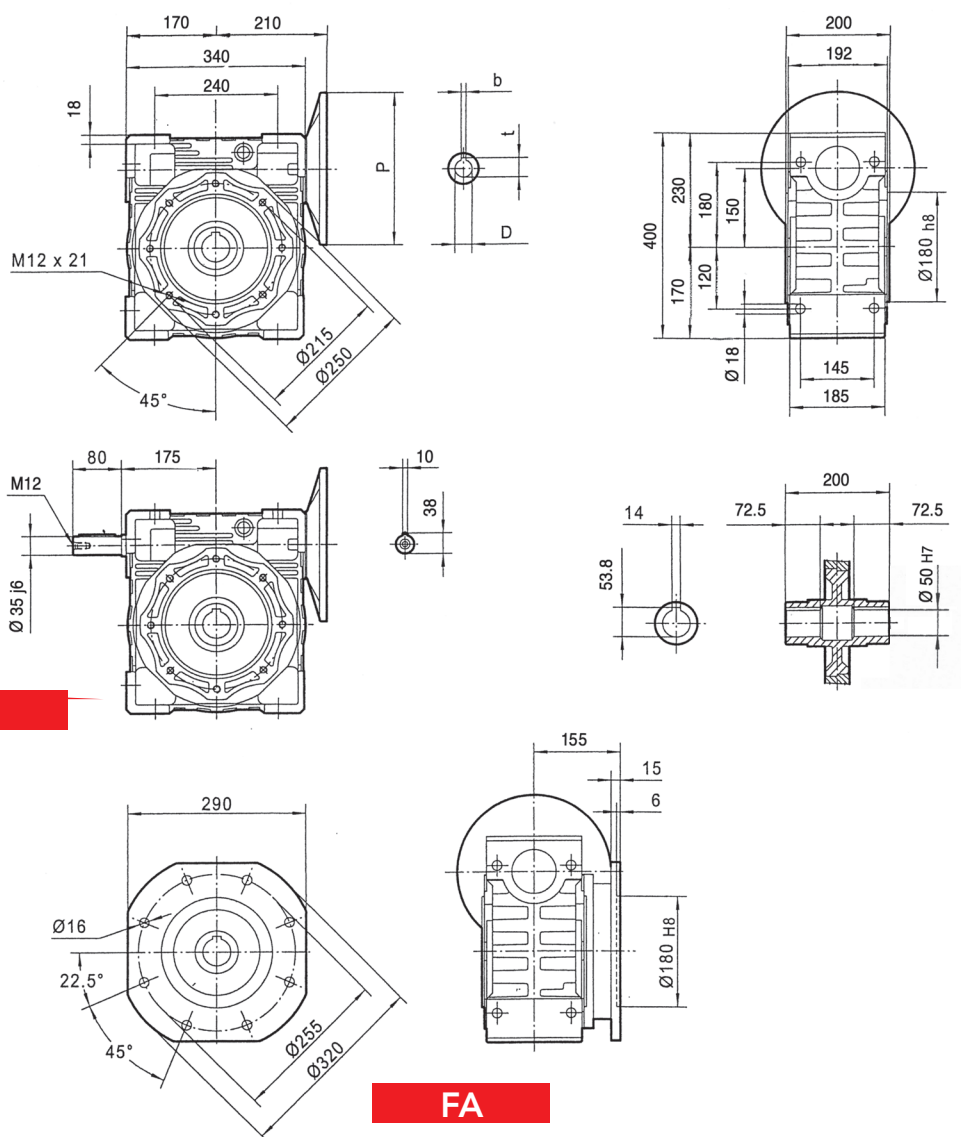
Weight 48 Kg excluding motor



# CHM 150 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE    | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |    |
|---------|---------|----------|-------|-------|------|-------------------------------------|----|
| CHM 150 | 7.5     | 186.7    | 15    | 680   | 1.6  | 160                                 | B5 |
|         | 10      | 140.0    | 15    | 905   | 1.2  | 160                                 | B5 |
|         | 15      | 93.3     | 15    | 1310  | 0.9  | 160                                 | B5 |
|         | 20      | 70.0     | 11    | 1270  | 1.0  | 160                                 | B5 |
|         | 25      | 56.0     | 11    | 1520  | 0.8  | 160                                 | B5 |
|         | 30      | 46.7     | 7.50  | 1240  | 0.8  | 132                                 | B5 |
|         | 40      | 35.0     | 7.50  | 1560  | 0.9  | 132                                 | B5 |
|         | 50      | 28.0     | 5.50  | 1405  | 0.9  | 132                                 | B5 |
|         | 60      | 23.3     | 5.50  | 1610  | 0.8  | 132                                 | B5 |
|         | 80      | 17.5     | 4     | 1430  | 0.8  | 112/100                             | B5 |
|         | 100     | 14.0     | 3     | 1300  | 0.8  | 112/100                             | B5 |

## DIMENSIONS



E

FA

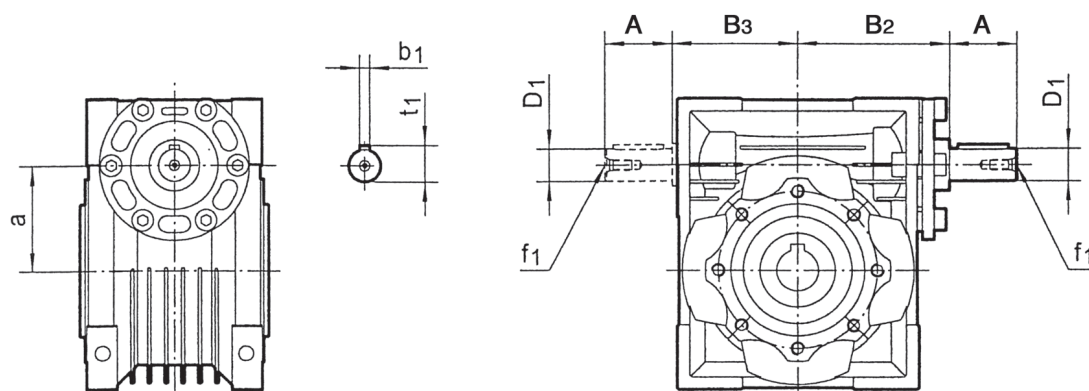
| PAM IEC | P   | DE8 | b  | t    |
|---------|-----|-----|----|------|
| 160B5   | 350 | 42  | 12 | 45.3 |
| 132B5   | 300 | 38  | 10 | 41.3 |
| 112B5   | 250 | 28  | 8  | 31.3 |
| 100B5   | 250 | 28  | 8  | 31.3 |

Weight 84 Kg excluding motor





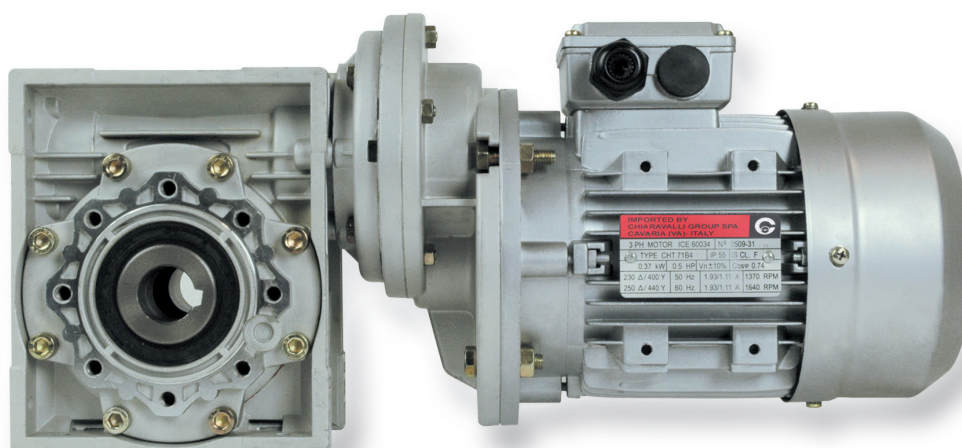
| CHMR         | 030  | 040  | 050 | 063  | 075 | 090 | 110 | 130 | 150 |
|--------------|------|------|-----|------|-----|-----|-----|-----|-----|
| <b>A</b>     | 20   | 23   | 30  | 40   | 50  | 50  | 60  | 80  | 80  |
| <b>D1 j6</b> | 9    | 11   | 14  | 19   | 24  | 24  | 28  | 30  | 35  |
| <b>B2</b>    | 51   | 60   | 74  | 90   | 105 | 125 | 142 | 162 | 195 |
| <b>B3</b>    | 45   | 53   | 64  | 75   | 90  | 108 | 135 | 155 | 175 |
| <b>a</b>     | 30   | 40   | 50  | 63   | 75  | 90  | 110 | 130 | 150 |
| <b>b1</b>    | 3    | 4    | 5   | 6    | 8   | 8   | 8   | 8   | 10  |
| <b>f1</b>    | -    | -    | M6  | M6   | M8  | M8  | M10 | M10 | M12 |
| <b>t1</b>    | 10.2 | 12.5 | 16  | 21.5 | 27  | 27  | 31  | 33  | 38  |



For the missing dimensions, please refer to the CHM correspondent



## CHPC/CHM - WORM GEAR WITH PRE-STAGE MODULE



### DESIGNATION CHPC/CHM - CHME

| TYPE | SIZE | i =  | M.M.F. | MOUNT. POS                                                                                                                                                       |
|------|------|------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CHPC | 63   | 3    | 63B5   | If supplied coupled with CHM or CHME types specify the position of these, when the pre-stage module is supplied by itself it is prepared for universal assembly. |
|      | 71   | 3    | 71B5   |                                                                                                                                                                  |
|      | 80   | 3    | 80B5   |                                                                                                                                                                  |
|      | 90   | 2.45 | 90B5   |                                                                                                                                                                  |

### ORDER EXAMPLE FOR A CHPC COUPLED TO A CHM OR CHME GEAR

|      |    |     |     |                  |        |      |         |
|------|----|-----|-----|------------------|--------|------|---------|
| CHPC | 90 | CHM | 110 | i=245 (2.45x100) | M.M.F. | 90B5 | POS. B3 |
|------|----|-----|-----|------------------|--------|------|---------|

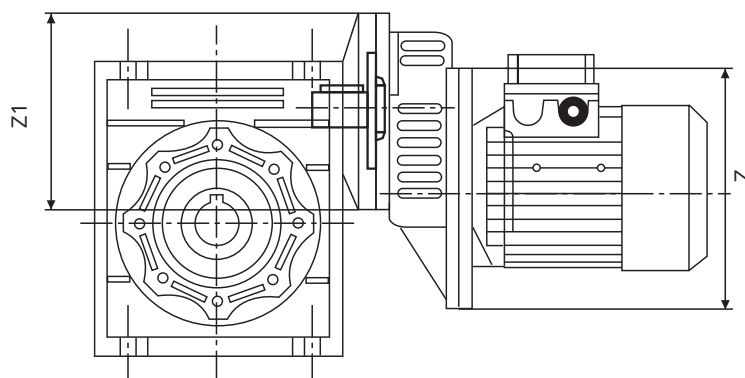
If the motor is also required, please specify:

Size es. 90 L4  
Power es. Kw 1.5  
Poles es. 4  
Voltage es. V230/400  
Frequency es. 50 Hz  
Flange es. B5

N.B. From size 25 to 63 the gears are always supplied in the Universal position and can therefore be mounted in any position, from size 75 to size 130 if the position required differs from B3 it must be specified.  
In particular, in the event that a gear in position B3 is to be mounted in positions V5 or V6, the bearing positioned in the upper side must be lubricated using suitable grease that ensures proper lubrication.  
We have tested Tecnolubeseal POLYMER 400/2 grease.

|         | Z      | Z1     |
|---------|--------|--------|
| CHPC 63 | 11/140 | 11/105 |
| CHPC 71 | 14/160 | 14/120 |
| CHPC 80 | 19/200 | 19/160 |
| CHPC 90 | 24/200 | 24/160 |

**ATTENZIONE:** The gearbox connected with the pre-stage must have input dimension Z1





# CHPC/CHM - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 90      | 15.6     | 0.18  | 61    |
|        | 120     | 11.7     | 0.18  | 52    |
| CHPC63 | 150     | 9.3      | 0.18  | 46    |
| CHM040 | 180     | 7.8      | 0.18  | 46    |
|        | 240     | 5.8      | 0.18  | 40    |
|        | 300     | 4.7      | 0.18  | 36    |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 90      | 15.6     | 0.18  | 69    |
|        | 120     | 11.7     | 0.18  | 85    |
| CHPC63 | 150     | 9.3      | 0.18  | 89    |
| CHM050 | 180     | 7.8      | 0.18  | 88    |
|        | 240     | 5.8      | 0.18  | 76    |
|        | 300     | 4.7      | 0.18  | 65    |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 90      | 15.6     | 0.25  | 97    |
| CHPC71 | 120     | 11.7     | 0.25  | 110   |
| CHM050 | 150     | 9.3      | 0.25  | 112   |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 150     | 9.3      | 0.18  | 101   |
| CHPC63 | 180     | 7.8      | 0.18  | 115   |
| CHM063 | 240     | 5.8      | 0.18  | 136   |
|        | 300     | 4.7      | 0.18  | 121   |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 90      | 15.6     | 0.37  | 145   |
|        | 90      | 15.6     | 0.25  | 98    |
| CHPC71 | 120     | 11.7     | 0.37  | 184   |
| CHM063 | 120     | 11.7     | 0.25  | 124   |
|        | 150     | 9.3      | 0.37  | 192   |
|        | 150     | 9.3      | 0.25  | 129   |
|        | 180     | 7.8      | 0.25  | 164   |
|        | 240     | 5.8      | 0.25  | 139   |
|        | 300     | 4.7      | 0.25  | 128   |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 90      | 15.6     | 0.37  | 153   |
|        | 120     | 11.7     | 0.37  | 190   |
| CHPC71 | 150     | 9.3      | 0.37  | 220   |
| CHM075 | 180     | 7.8      | 0.37  | 236   |
|        | 180     | 7.8      | 0.25  | 159   |
|        | 240     | 5.8      | 0.25  | 208   |
|        | 300     | 4.7      | 0.25  | 210   |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 90      | 15.6     | 0.75  | 307   |
|        | 120     | 11.7     | 0.55  | 278   |
| CHPC80 | 150     | 9.3      | 0.55  | 260   |
| CHM075 |         |          |       |       |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 180     | 7.8      | 0.37  | 260   |
| CHPC71 | 240     | 5.8      | 0.37  | 320   |
| CHM090 | 300     | 4.7      | 0.37  | 345   |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 90      | 15.6     | 0.75  | 320   |
| CHPC80 | 120     | 11.7     | 0.75  | 397   |
| CHM090 | 150     | 9.3      | 0.75  | 426   |
|        | 180     | 7.8      | 0.75  | 425   |
|        | 240     | 5.8      | 0.55  | 374   |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 120     | 11.7     | 0.75  | 421   |
| CHPC80 | 150     | 9.3      | 0.75  | 496   |
| CHM110 | 180     | 7.8      | 0.75  | 569   |
|        | 240     | 5.8      | 0.75  | 617   |
|        | 300     | 4.7      | 0.55  | 585   |

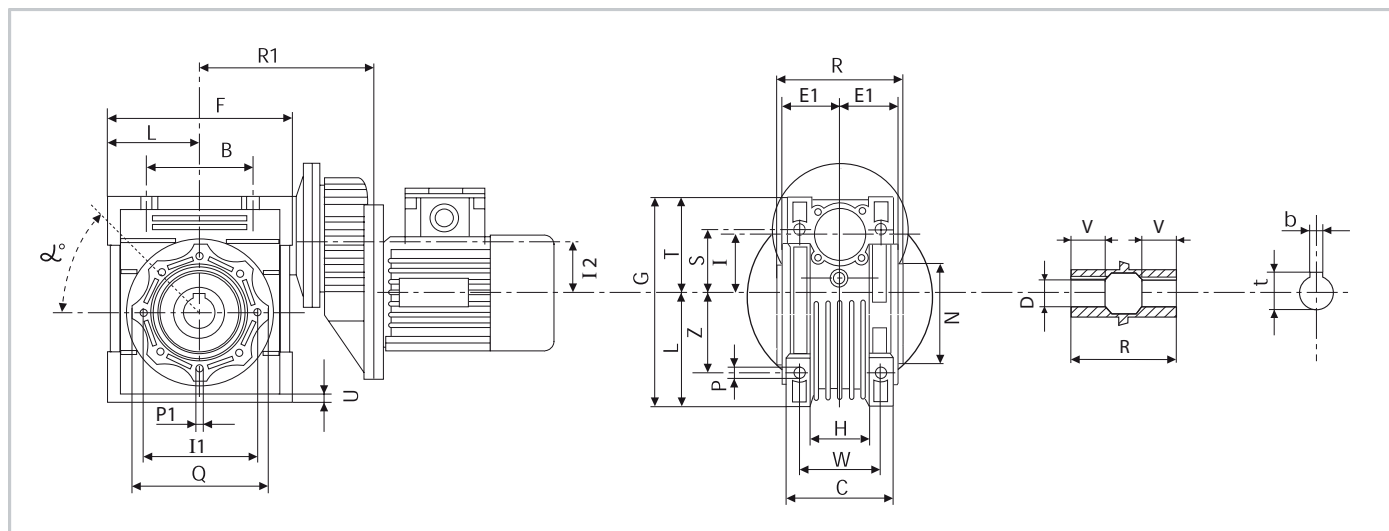
| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 98      | 14.3     | 1.50  | 679   |
| CHPC90 | 122.5   | 11.4     | 1.50  | 801   |
| CHM110 | 147     | 9.5      | 1.50  | 810   |
|        | 147     | 9.5      | 1.10  | 595   |
|        | 196     | 7.1      | 1.10  | 660   |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
|        | 98      | 14.3     | 1.50  | 679   |
| CHPC90 | 122.5   | 11.4     | 1.50  | 813   |
| CHM130 | 147     | 9.5      | 1.50  | 917   |
|        | 196     | 7.1      | 1.50  | 1013  |
|        | 245     | 5.7      | 1.10  | 848   |

The choice of power installed is tied to the unification of the motors, therefore it is sometimes in exuberance compared to the gear; always verify the maximum torque indicated when making the selection and if in doubt please contact our technical office.



# CHPC/CHM - DIMENSIONS



| CHPC<br>CHM       | B   | F     | D(H7) | G     | H  | R1    | R   | L     | I   | I2 | C   | I1  | N(h8) | E1   | P   | Q   | S   | T     |
|-------------------|-----|-------|-------|-------|----|-------|-----|-------|-----|----|-----|-----|-------|------|-----|-----|-----|-------|
| <b>63+040</b>     | 70  | 100   | 18    | 121.5 | 43 | 117   | 78  | 50    | 40  | 40 | 71  | 75  | 60    | 36.5 | 6.5 | 87  | 55  | 71.5  |
| <b>63+050</b>     | 80  | 120   | 25    | 144   | 49 | 127   | 92  | 60    | 50  | 40 | 85  | 85  | 70    | 43.5 | 8.5 | 100 | 64  | 84    |
| <b>71+050</b>     | 80  | 120   | 25    | 144   | 49 | 135   | 92  | 60    | 50  | 50 | 85  | 85  | 70    | 43.5 | 8.5 | 100 | 64  | 84    |
| <b>63+063</b>     | 100 | 144   | 25    | 174   | 67 | 142   | 112 | 72    | 63  | 40 | 103 | 95  | 80    | 53   | 8.5 | 110 | 80  | 102   |
| <b>71+063</b>     | 100 | 144   | 25    | 174   | 67 | 150   | 112 | 72    | 63  | 50 | 103 | 95  | 80    | 53   | 8.5 | 110 | 80  | 102   |
| <b>71+075</b>     | 120 | 172   | 28    | 205   | 72 | 167,5 | 120 | 86    | 75  | 50 | 112 | 115 | 95    | 57   | 11  | 140 | 93  | 119   |
| <b>80+075</b>     | 120 | 172   | 28    | 205   | 72 | 187,5 | 120 | 86    | 75  | 63 | 112 | 115 | 95    | 57   | 11  | 140 | 93  | 119   |
| <b>71+090</b>     | 140 | 208   | 35    | 238   | 74 | 184,5 | 140 | 103   | 90  | 50 | 130 | 130 | 110   | 67   | 13  | 160 | 102 | 135   |
| <b>80+090</b>     | 140 | 208   | 35    | 238   | 74 | 204,5 | 140 | 103   | 90  | 63 | 130 | 130 | 110   | 67   | 13  | 160 | 102 | 135   |
| <b>80(90)+110</b> | 170 | 252.5 | 42    | 295   | -  | 235   | 155 | 127.5 | 110 | 63 | 144 | 165 | 130   | 74   | 14  | 200 | 125 | 167.5 |
| <b>80(90)+130</b> | 200 | 292.5 | 45    | 335   | -  | 255   | 170 | 147.5 | 130 | 63 | 155 | 215 | 180   | 81   | 16  | 250 | 140 | 187.5 |

| CHPC<br>CHM       | U   | V  | Z   | W   | P1        | $\alpha$ | b  | t    | Weight in kg. excluding motor |
|-------------------|-----|----|-----|-----|-----------|----------|----|------|-------------------------------|
| <b>63+040</b>     | 6.5 | 26 | 35  | 60  | M6x8n.4   | 45°      | 6  | 20.8 | 3.9                           |
| <b>63+050</b>     | 7   | 30 | 40  | 70  | M8x10n.4  | 45°      | 8  | 28.3 | 5.2                           |
| <b>71+050</b>     | 7   | 30 | 40  | 70  | M8x10n.4  | 45°      | 8  | 28.3 | 5.8                           |
| <b>63+063</b>     | 8   | 36 | 50  | 85  | M8x14n.8  | 45°      | 8  | 28.3 | 7.9                           |
| <b>71+063</b>     | 8   | 36 | 50  | 85  | M8x14n.8  | 45°      | 8  | 28.3 | 8.5                           |
| <b>71+075</b>     | 10  | 40 | 60  | 90  | M8x14n.8  | 45°      | 8  | 31.3 | 11                            |
| <b>80+075</b>     | 10  | 40 | 60  | 90  | M8x14n.8  | 45°      | 8  | 31.3 | 12.6                          |
| <b>71+090</b>     | 11  | 45 | 70  | 100 | M10x18n.8 | 45°      | 10 | 38.3 | 14.3                          |
| <b>80+090</b>     | 11  | 45 | 70  | 100 | M10x18n.8 | 45°      | 10 | 38.3 | 16.2                          |
| <b>80(90)+110</b> | 14  | 50 | 85  | 115 | M10x18n.8 | 45°      | 12 | 45.3 | 39                            |
| <b>80(90)+130</b> | 15  | 60 | 100 | 120 | M12x21n.8 | 45°      | 14 | 48.8 | 67.2                          |

N.B. For the side flange and double extended input worm dimensions see the corresponding size of the CHM series. See pages 34 and 35.

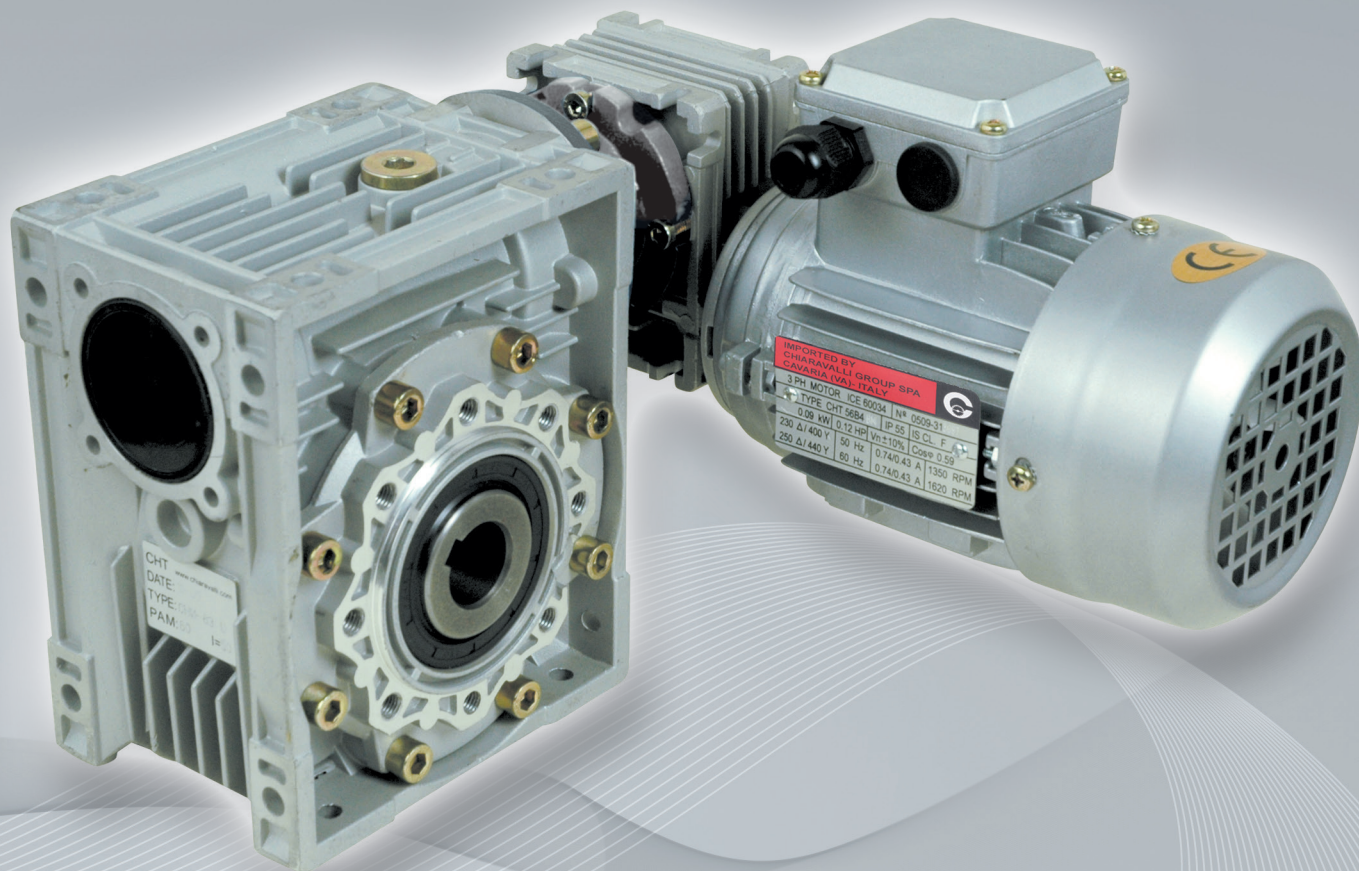
2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

Quantity, availability and prices with Chiaravalli B2B

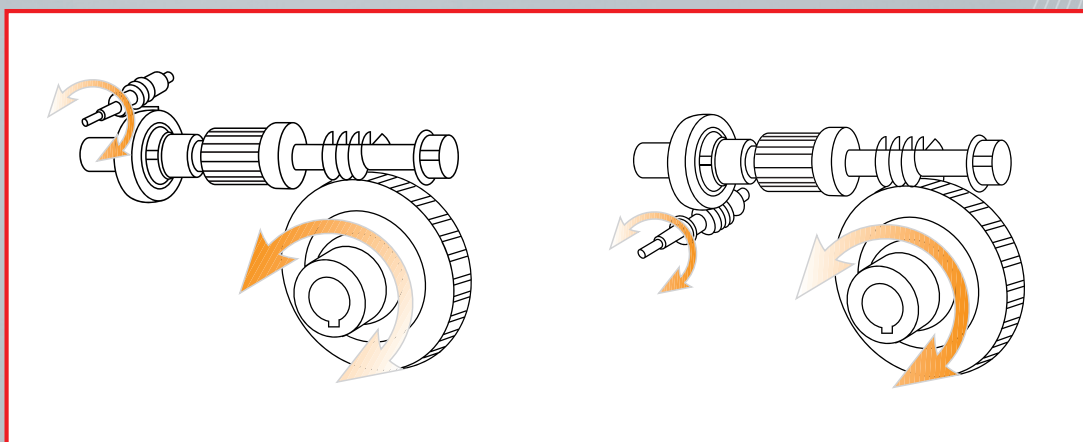




## CHM/CHM-CHME - CHMR/CHM-CHME DOUBLE WORM GEAR



### DIRECTION OF ROTATION





## CHM/CHMR/CHME/CHMRE DESIGNATION

| TYPE      | SIZE (1) | VERSION (2) | FLANGE POS. (3) | i    | EXEC. (4) | M.M.F.                            | MOUNT. POS. (3) |
|-----------|----------|-------------|-----------------|------|-----------|-----------------------------------|-----------------|
| CHM/CHM   | 025/030  | FA          | 1               | 300  | OAD       |                                   | U               |
| CHM/CHME  | 030/040  | FB          | 2               | 400  | OAS       |                                   | B3              |
| CHMR/CHM  | 030/050  | FC          |                 | 500  | OBD       |                                   | B8              |
| CHMR/CHME | 030/063  | FD          |                 | 600  | OBS       |                                   | B6              |
|           | 040/075  | FE          |                 | 750  | VAD       | SEE FROM<br>PAGE 31<br>TO PAGE 35 | B7              |
|           | 040/090  |             |                 | 900  | VAS       |                                   | V5              |
|           | 050/110  |             |                 | 1200 | VBD       |                                   | V6              |
|           | 063/130  |             |                 | 1500 | VBS       |                                   |                 |
|           |          |             |                 | 1800 |           |                                   |                 |
|           |          |             |                 | 2400 |           |                                   |                 |

For the motor mounting flanges (M.M.F.) see the table showing the types available. For the executions see the table with drawings, if not specified OBS would be supplied. The mounting position refers to the second gear.



## ORDER EXAMPLE

|         |         |       |      |     |     |        |    |
|---------|---------|-------|------|-----|-----|--------|----|
| CHM/CHM | 040/090 | FA(5) | 2(5) | 500 | OAD | 63 B14 | V5 |
|---------|---------|-------|------|-----|-----|--------|----|

If the motor is also required, please specify:

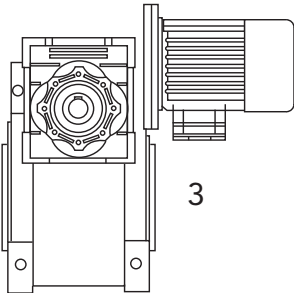
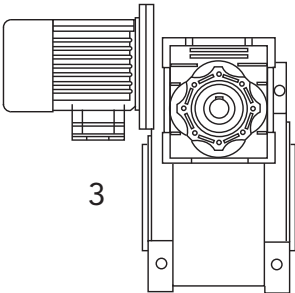
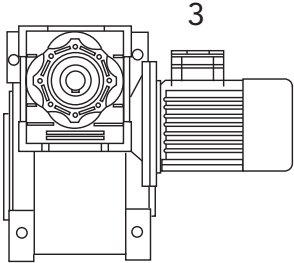
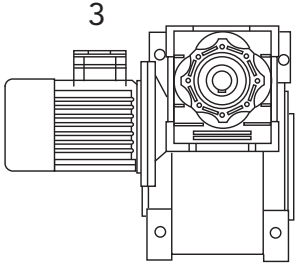
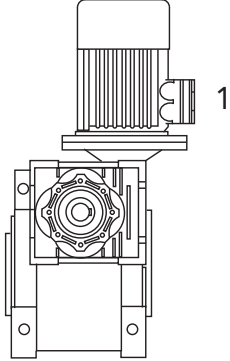
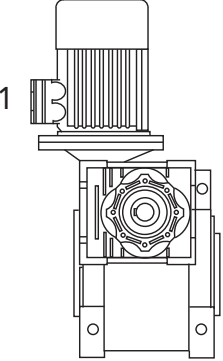
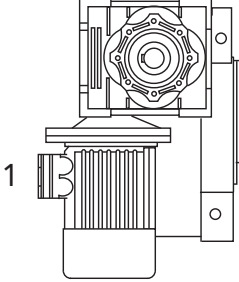
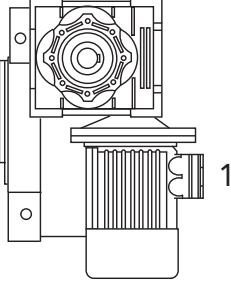
Size es. 63 B4  
 Power es. Kw 0.18  
 Poles es. 4  
 Voltage es. V230/400  
 Frequency es. 50 Hz  
 Flange es. B14

N.B. From size 25 to 63 the gears are always supplied in the Universal position and can therefore be mounted in any position, from size 75 to size 130 if the position required differs from B3 it must be specified. In particular, in the event that a gear in position B3 is to be mounted in positions V5 or V6, the bearing positioned in the upper side must be lubricated using suitable grease that ensures proper lubrication. We have tested Tecnolubeseal POLYMER 400/2 grease.

- 1) see page 48
- 2) see from page 31 to page 40
- 3) see page 30
- 4) see page 47
- 5) lack of instructions indicates that the gear is not equipped with an output flange.

2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)  
 Quantity, availability and prices with Chiaravalli B2B



|                                                                                                   |                                                                                                   |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>OAD</b><br>   |  <b>OAS</b>     |
|  <b>OBD</b>     | <b>OBS</b><br> |
|  <b>VAD</b>    |  <b>VAS</b>   |
| <b>VBS</b><br> |  <b>VBD</b>   |

The execution determines the mounting position of the first gear in relation to the second gear. If not otherwise specified at the time of order, the group will be supplied in the OBS execution. The placing position refers to the second gear.



# CHM/CHM - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE           | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|----------------|---------|----------|-------|-------|
|                | 300     | 4.7      | 0.09* | 31    |
|                | 400     | 3.5      | 0.09* | 28    |
|                | 500     | 2.8      | 0.09* | 34    |
|                | 600     | 2.3      | 0.09* | 31    |
| <b>CHM</b>     | 750     | 1.9      | 0.09* | 34    |
| <b>025/030</b> | 900     | 1.6      | 0.09* | 31    |
|                | 1200    | 1.2      | 0.09* | 31    |
|                | 1500    | 0.9      | 0.09* | 26    |
|                | 1800    | 0.8      | 0.09* | 23    |
|                | 2400    | 0.6      | 0.09* | 23    |

| TYPE           | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|----------------|---------|----------|-------|-------|
|                | 300     | 4.7      | 0.37  | 405   |
|                | 400     | 3.5      | 0.25  | 336   |
|                | 500     | 2.8      | 0.25  | 307   |
|                | 600     | 2.3      | 0.18  | 362   |
| <b>CHM</b>     | 750     | 1.9      | 0.18  | 391   |
| <b>040/075</b> | 900     | 1.6      | 0.18* | 325   |
|                | 1200    | 1.2      | 0.18* | 359   |
|                | 1500    | 0.9      | 0.09  | 360   |
|                | 1800    | 0.8      | 0.09  | 404   |
|                | 2400    | 0.6      | 0.09* | 330   |

| TYPE           | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|----------------|---------|----------|-------|-------|
|                | 300     | 4.7      | 0.09* | 70    |
|                | 400     | 3.5      | 0.09* | 63    |
|                | 500     | 2.8      | 0.09* | 57    |
|                | 600     | 2.3      | 0.09* | 72    |
| <b>CHM</b>     | 750     | 1.9      | 0.09* | 72    |
| <b>030/040</b> | 900     | 1.6      | 0.09* | 73    |
|                | 1200    | 1.2      | 0.09* | 65    |
|                | 1500    | 0.9      | 0.09* | 73    |
|                | 1800    | 0.8      | 0.09* | 73    |
|                | 2400    | 0.6      | 0.09* | 65    |

| TYPE           | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|----------------|---------|----------|-------|-------|
|                | 300     | 4.7      | 0.37  | 405   |
|                | 400     | 3.5      | 0.37  | 523   |
|                | 500     | 2.8      | 0.37  | 550   |
|                | 600     | 2.3      | 0.37  | 605   |
| <b>CHM</b>     | 750     | 1.9      | 0.25  | 538   |
| <b>040/090</b> | 900     | 1.6      | 0.25  | 533   |
|                | 1200    | 1.2      | 0.18  | 629   |
|                | 1500    | 0.9      | 0.18  | 588   |
|                | 1800    | 0.8      | 0.18* | 492   |
|                | 2400    | 0.6      | 0.18* | 625   |

| TYPE           | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|----------------|---------|----------|-------|-------|
|                | 300     | 4.7      | 0.18  | 142   |
|                | 400     | 3.5      | 0.18  | 127   |
|                | 500     | 2.8      | 0.09  | 123   |
|                | 600     | 2.3      | 0.09  | 143   |
| <b>CHM</b>     | 750     | 1.9      | 0.09  | 148   |
| <b>030/050</b> | 900     | 1.6      | 0.09* | 141   |
|                | 1200    | 1.2      | 0.09* | 118   |
|                | 1500    | 0.9      | 0.09* | 139   |
|                | 1800    | 0.8      | 0.09* | 155   |
|                | 2400    | 0.6      | 0.09* | 124   |

| TYPE           | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|----------------|---------|----------|-------|-------|
|                | 300     | 4.7      | 0.75  | 871   |
|                | 400     | 3.5      | 0.75  | 1013  |
|                | 500     | 2.8      | 0.55  | 984   |
|                | 600     | 2.3      | 0.55  | 1062  |
| <b>CHM</b>     | 750     | 1.9      | 0.55  | 1128  |
| <b>050/110</b> | 900     | 1.6      | 0.37  | 1079  |
|                | 1200    | 1.2      | 0.25  | 943   |
|                | 1500    | 0.9      | 0.25  | 1064  |
|                | 1800    | 0.8      | 0.25  | 1075  |
|                | 2400    | 0.6      | 0.18  | 1001  |

| TYPE           | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|----------------|---------|----------|-------|-------|
|                | 300     | 4.7      | 0.22  | 210   |
|                | 400     | 3.5      | 0.18  | 222   |
|                | 500     | 2.8      | 0.18  | 205   |
|                | 600     | 2.3      | 0.18* | 208   |
| <b>CHM</b>     | 750     | 1.9      | 0.18* | 216   |
| <b>030/063</b> | 900     | 1.6      | 0.09  | 200   |
|                | 1200    | 1.2      | 0.09  | 236   |
|                | 1500    | 0.9      | 0.09* | 204   |
|                | 1800    | 0.8      | 0.09* | 202   |
|                | 2400    | 0.6      | 0.09* | 220   |

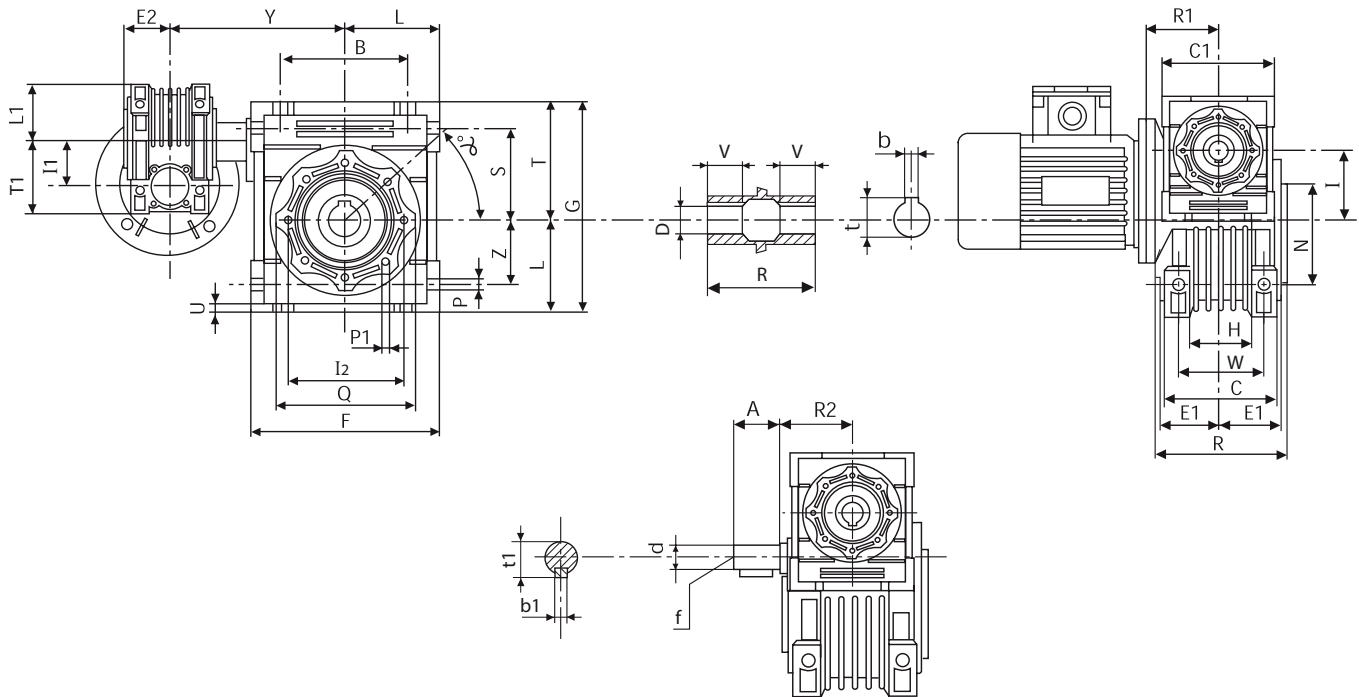
| TYPE           | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|----------------|---------|----------|-------|-------|
|                | 300     | 4.7      | 1.50  | 1789  |
|                | 400     | 3.5      | 1.10  | 1519  |
|                | 500     | 2.8      | 1.10  | 1629  |
|                | 600     | 2.3      | 0.75  | 1631  |
| <b>CHM</b>     | 750     | 1.9      | 0.75  | 1804  |
| <b>063/130</b> | 900     | 1.6      | 0.75  | 1826  |
|                | 1200    | 1.2      | 0.55  | 1705  |
|                | 1500    | 0.9      | 0.37  | 1674  |
|                | 1800    | 0.8      | 0.37  | 1698  |
|                | 2400    | 0.6      | 0.25  | 1624  |

N.B. The powers marked with an asterisk are higher than those that the gear allows, therefore the applicative choice must be made in accordance with the torque and not the power.  
The gear ratios are those most frequently requested. It is possible to obtain multiple combinations using the various ratios of the two single gears.  
CHM 63/150 on request





# CHM-CHM/CHMR-CHM - DIMENSIONS OF COMBINED GEARS



| CHM-CHM | B   | A  | F     | C1  | D(H7) | d(j6) | G     | H  | R1 | R   | R2 | L     | L1 | I   | I1 | C   | I2  | N(h8) | E1   | E2   | P   |
|---------|-----|----|-------|-----|-------|-------|-------|----|----|-----|----|-------|----|-----|----|-----|-----|-------|------|------|-----|
| 025/030 | 54  | -  | 80    | 70  | 14    | -     | 97    | 32 | 45 | 63  | -  | 40    | 35 | 30  | 25 | 56  | 65  | 55    | 29   | 22.5 | 6   |
| 030/040 | 70  | 20 | 100   | 80  | 18    | 9     | 121.5 | 43 | 55 | 78  | 51 | 50    | 40 | 40  | 30 | 71  | 75  | 60    | 36.5 | 29   | 6.5 |
| 030/050 | 80  | 20 | 120   | 80  | 25    | 9     | 144   | 49 | 55 | 92  | 51 | 60    | 40 | 50  | 30 | 85  | 85  | 70    | 43.5 | 29   | 8.5 |
| 030/063 | 100 | 20 | 144   | 80  | 25    | 9     | 174   | 67 | 55 | 112 | 51 | 72    | 40 | 63  | 30 | 103 | 95  | 80    | 53   | 29   | 8.5 |
| 040/075 | 120 | 23 | 172   | 100 | 28    | 11    | 205   | 72 | 70 | 120 | 60 | 86    | 50 | 75  | 40 | 112 | 115 | 95    | 57   | 36.5 | 11  |
| 040/090 | 140 | 23 | 208   | 100 | 35    | 11    | 238   | 74 | 70 | 140 | 60 | 103   | 50 | 90  | 40 | 130 | 130 | 110   | 67   | 36.5 | 13  |
| 050/110 | 170 | 30 | 252.5 | 120 | 42    | 14    | 295   | -  | 80 | 155 | 74 | 127.5 | 60 | 110 | 50 | 144 | 165 | 130   | 74   | 43.5 | 14  |
| 063/130 | 200 | 40 | 292.5 | 144 | 45    | 19    | 335   | -  | 95 | 170 | 90 | 147.5 | 72 | 130 | 63 | 155 | 215 | 180   | 81   | 53   | 16  |
| 063/150 | 240 | 40 | 340   | 144 | 50    | 19    | 400   | -  | 95 | 200 | 90 | 170   | 72 | 150 | 63 | 185 | 215 | 180   | 96   | 53   | 18  |

| CHM-CHM | Q   | S   | T     | T1   | U   | V  | Z   | Y   | W   | P1          | α   | b  | b1 | f  | t    | t1   | Weight in Kg.<br>excluding motor |
|---------|-----|-----|-------|------|-----|----|-----|-----|-----|-------------|-----|----|----|----|------|------|----------------------------------|
| 025/030 | 75  | 44  | 57    | 48   | 5   | 18 | 27  | 100 | 44  | M6x11(n.4)  | 90° | 5  | -  | -  | -    | -    | 2.5                              |
| 030/040 | 87  | 55  | 71.5  | 57   | 6.5 | 26 | 35  | 120 | 60  | M6x8(n.4)   | 45° | 6  | 3  | -  | 20.8 | 10.2 | 3.9                              |
| 030/050 | 100 | 64  | 84    | 57   | 7   | 30 | 40  | 130 | 70  | M8x10(n.4)  | 45° | 8  | 3  | -  | 28.3 | 10.2 | 5.0                              |
| 030/063 | 110 | 80  | 102   | 57   | 8   | 36 | 50  | 145 | 85  | M8x14(n.8)  | 45° | 8  | 3  | -  | 28.3 | 10.2 | 7.8                              |
| 040/075 | 140 | 93  | 119   | 71.5 | 10  | 40 | 60  | 165 | 90  | M8x14(n.8)  | 45° | 8  | 4  | -  | 31.3 | 12.5 | 11.5                             |
| 040/090 | 160 | 102 | 135   | 71.5 | 11  | 45 | 70  | 182 | 100 | M10x18(n.8) | 45° | 10 | 4  | -  | 38.3 | 12.5 | 15                               |
| 050/110 | 200 | 125 | 167.5 | 84   | 14  | 50 | 85  | 225 | 115 | M10x18(n.8) | 45° | 12 | 5  | M6 | 45.3 | 16.0 | 39.2                             |
| 063/130 | 250 | 140 | 187.5 | 102  | 15  | 60 | 100 | 245 | 120 | M12x21(n.8) | 45° | 14 | 6  | M6 | 48.8 | 21.5 | 70                               |
| 063/150 | 250 | 180 | 230   | 102  | 18  | 72 | 120 | 275 | 145 | M12x21(n.8) | 45° | 14 | 6  | M6 | 53.8 | 21.5 | 100                              |

N.B. For the side flange and double extended input worm dimensions see the corresponding size of the CHM models.

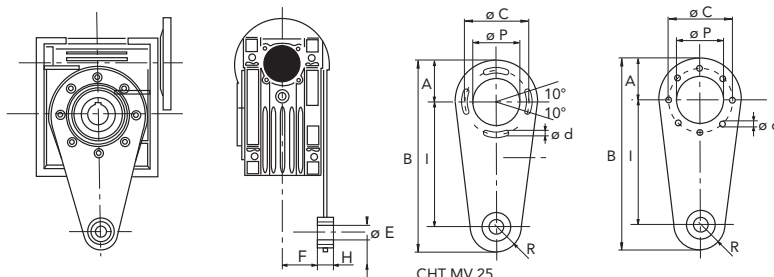


## TORQUE ARM

| TYPE       | I   | R  | F    | H  | Ø E | A    | B     | Ø C | Ø d | Ø P | N° | Weight for kit kg |
|------------|-----|----|------|----|-----|------|-------|-----|-----|-----|----|-------------------|
| CHT MV 25* | 70  | 15 | 17.5 | 14 | 8   | 33.5 | 118.5 | 55  | 7   | 45  | 4  | 0.17              |
| CHT MV 30* | 85  | 15 | 24   | 14 | 8   | 38   | 138   | 65  | 7   | 55  | 8  | 0.18              |
| CHT MV 40  | 100 | 18 | 31.5 | 14 | 10  | 44   | 162   | 75  | 7   | 60  | 8  | 0.24              |
| CHT MV 50  | 100 | 18 | 38.5 | 14 | 10  | 50   | 168   | 85  | 9   | 70  | 8  | 0.27              |
| CHT MV 63  | 150 | 18 | 49   | 14 | 10  | 55   | 223   | 95  | 9   | 80  | 8  | 0.57              |
| CHT MV 75  | 200 | 30 | 47.5 | 25 | 20  | 70   | 300   | 115 | 9   | 95  | 8  | 1.10              |
| CHT MV 90  | 200 | 30 | 57.5 | 25 | 20  | 80   | 310   | 130 | 11  | 110 | 8  | 1.26              |
| CHT MV 110 | 250 | 35 | 62   | 30 | 25  | 100  | 385   | 165 | 11  | 130 | 8  | 1.92              |
| CHT MV 130 | 250 | 35 | 69   | 30 | 25  | 125  | 410   | 215 | 14  | 180 | 8  | 2.23              |
| CHT MV 150 | 250 | 35 | 84   | 30 | 25  | 125  | 410   | 215 | 14  | 180 | 8  | 2.23              |

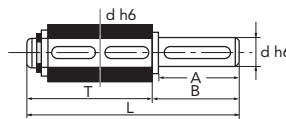
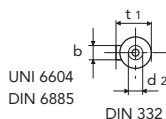
\* Without vibration resistant bushing

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



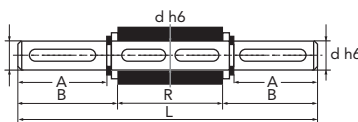
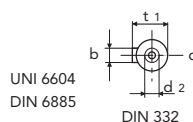
## SINGLE OUTPUT SHAFT KIT

| TYPE        | A  | Ø d | B    | b  | t 1  | T     | L   | d 2    | Weight for kit kg |
|-------------|----|-----|------|----|------|-------|-----|--------|-------------------|
| CHT MVS 25  | 23 | 11  | 25.5 | 4  | 12.5 | 55.5  | 81  | -      | 0.07              |
| CHT MVS 30  | 30 | 14  | 32.5 | 5  | 16   | 69.5  | 102 | M6x16  | 0.14              |
| CHT MVS 40  | 40 | 18  | 43   | 6  | 20.5 | 85    | 128 | M6x16  | 0.27              |
| CHT MVS 50  | 50 | 25  | 53.5 | 8  | 28   | 99.5  | 153 | M10x22 | 0.60              |
| CHT MVS 63  | 50 | 25  | 53.5 | 8  | 28   | 119.5 | 173 | M10x22 | 0.67              |
| CHT MVS 75  | 60 | 28  | 63.5 | 8  | 31   | 128.5 | 192 | M10x22 | 0.94              |
| CHT MVS 90  | 80 | 35  | 84.5 | 10 | 38   | 149.5 | 234 | M12x28 | 1.79              |
| CHT MVS 110 | 80 | 42  | 84.5 | 12 | 45   | 164.5 | 249 | M16x35 | 2.70              |
| CHT MVS 130 | 80 | 45  | 85   | 14 | 48.5 | 180   | 265 | M16x35 | 3.60              |
| CHT MVS 150 | 82 | 50  | 87   | 14 | 53.5 | 210   | 297 | M16x35 | 5.00              |



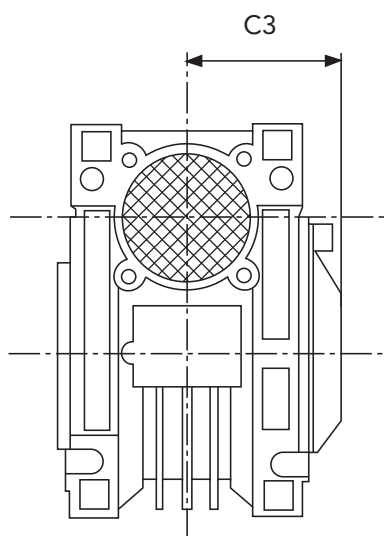
## DOUBLE OUTPUT SHAFT KIT

| TYPE        | A  | Ø d | B    | R   | b  | t 1  | L   | d 2    | Weight for kit kg |
|-------------|----|-----|------|-----|----|------|-----|--------|-------------------|
| CHT MVD 25  | 23 | 11  | 25.5 | 50  | 4  | 12.5 | 101 | -      | 0.11              |
| CHT MVD 30  | 30 | 14  | 32.5 | 63  | 5  | 16   | 128 | M6x16  | 0.16              |
| CHT MVD 40  | 40 | 18  | 43   | 78  | 6  | 20.5 | 164 | M6x16  | 0.34              |
| CHT MVD 50  | 50 | 25  | 53.5 | 92  | 8  | 28   | 199 | M10x22 | 0.75              |
| CHT MVD 63  | 50 | 25  | 53.5 | 112 | 8  | 28   | 219 | M10x22 | 0.84              |
| CHT MVD 75  | 60 | 28  | 63.5 | 120 | 8  | 31   | 247 | M10x22 | 1.20              |
| CHT MVD 90  | 80 | 35  | 84.5 | 140 | 10 | 38   | 309 | M12x28 | 2.50              |
| CHT MVD 110 | 80 | 42  | 84.5 | 155 | 12 | 45   | 324 | M16x35 | 3.44              |
| CHT MVD 130 | 80 | 45  | 85   | 170 | 14 | 48.5 | 340 | M16x35 | 4.25              |





## COVER



| TYPE | C3  |
|------|-----|
| 030  | 43  |
| 040  | 50  |
| 050  | 59  |
| 063  | 70  |
| 075  | 75  |
| 090  | 87  |
| 110  | 95  |
| 130  | 103 |
| 150  | 117 |



## REDUCTION BUSHINGS KIT

51

### SINGLE

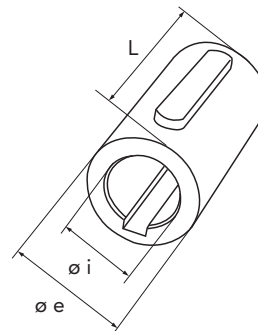
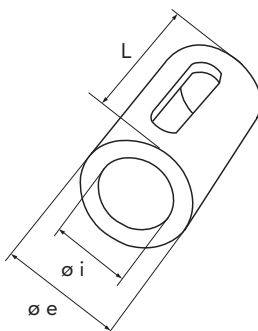
| TYPE      | $\varnothing i / \varnothing e$ | L   | Key                      | Weight for kit kg |
|-----------|---------------------------------|-----|--------------------------|-------------------|
| CHT BRM-S | 9/11                            | 20  | 4/3x4x11 RB*             | 0.006             |
| CHT BRM-S | 11/14                           | 30  | 5/4x6x10 RB*             | 0.015             |
| CHT BRM-S | 14/19                           | 40  | 6x5x30 *                 | 0.045             |
| CHT BRM-S | 19/24                           | 50  | 6x5.5x20 *<br>8x5.5x40 * | 0.07              |
| CHT BRM-S | 24/28                           | 60  | 8x9x40 *                 | 0.08              |
| CHT BRM-S | 28/38                           | 80  | 10x7x60 *                | 0.33              |
| CHT BRM-S | 38/42                           | 110 | 12/10x10x48 RB*          | 0.22              |

### DOUBLE

| TYPE      | $\varnothing i / \varnothing e$ | L  | Key       | Weight for kit kg |
|-----------|---------------------------------|----|-----------|-------------------|
| CHT BRM-D | 11/19                           | 40 | 6x6x30 *  | 0.06              |
| CHT BRM-D | 14/24                           | 50 | 8x7x40 A  | 0.12              |
| CHT BRM-D | 19/28                           | 60 | 8x7x50 A  | 0.16              |
| CHT BRM-D | 24/38                           | 80 | 10x8x60 A | 0.44              |

\* to drawing

Tongue acc. to UNI 6604 - DIN 6885  
Quenched



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

Quantity, availability and prices with Chiaravalli B2B



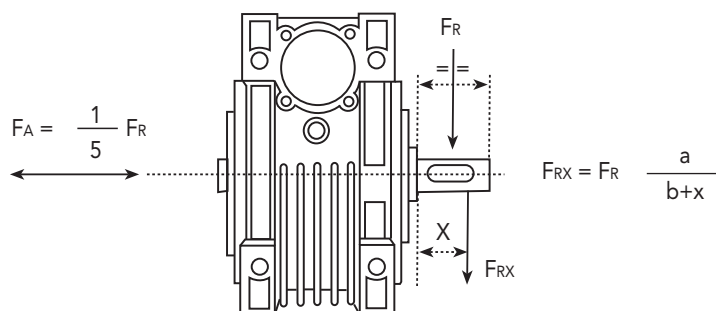
## RADIAL LOADS ON THE OUTPUT SHAFT

The loads indicated are valid for all application directions.

The maximum allowable axial loads are equal to 1/5 of the radial load value shown in the table when applied with the same radial load; if this is not the case, please contact our technical office. If double output shafts are used, the sum of radial loads applicable to the centre lines of the two ends of the shaft must not exceed the value shown in the table below.

The radial loads related to the output speed (n2)=10 are the maximum loads supported by the gear.

- a | GEAR CONSTANT
- b | GEAR CONSTANT
- x | LOAD DISTANCE FROM SHAFT SHOULDER IN MM.
- $F_{RX}$  | RADIAL LOAD IN POSITION X (IN N)
- $F_R$  | RADIAL LOAD (N)
- $F_A$  | AXIAL LOAD (N)



52

### SIZES

| Output speed<br>(n2) | 025  | 030  | 040  | 050  | 063  | 075  | 090  | 110   | 130   | 150   |
|----------------------|------|------|------|------|------|------|------|-------|-------|-------|
| 400                  | 390  | 530  | 1020 | 1400 | 1830 | 2160 | 2390 | 3530  | 3950  | 5290  |
| 250                  | 460  | 620  | 1200 | 1650 | 2150 | 2520 | 2800 | 4130  | 4610  | 6140  |
| 150                  | 550  | 740  | 1420 | 1960 | 2540 | 2990 | 3310 | 4890  | 5470  | 7300  |
| 100                  | 630  | 850  | 1620 | 2250 | 2910 | 3430 | 3800 | 5600  | 6260  | 8330  |
| 60                   | 740  | 1000 | 1920 | 2660 | 3450 | 4060 | 4500 | 6640  | 7420  | 9800  |
| 40                   | 850  | 1150 | 2200 | 3050 | 3950 | 4650 | 5150 | 7600  | 8500  | 11330 |
| 25                   | 990  | 1350 | 2570 | 3570 | 4620 | 5440 | 6020 | 8890  | 9940  | 13250 |
| 10                   | 1350 | 1830 | 3490 | 4840 | 6270 | 7380 | 8180 | 12000 | 13500 | 18000 |

### CONSTANTS' VALUES

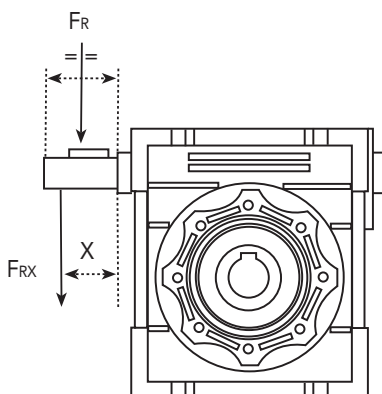
|   |    |    |    |     |     |     |     |     |     |     |
|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| a | 50 | 65 | 84 | 101 | 120 | 131 | 162 | 176 | 188 | 215 |
| b | 38 | 50 | 64 | 76  | 95  | 101 | 122 | 136 | 148 | 174 |





## RADIAL LOADS ON THE CENTRE LINE OF THE INPUT SHAFT

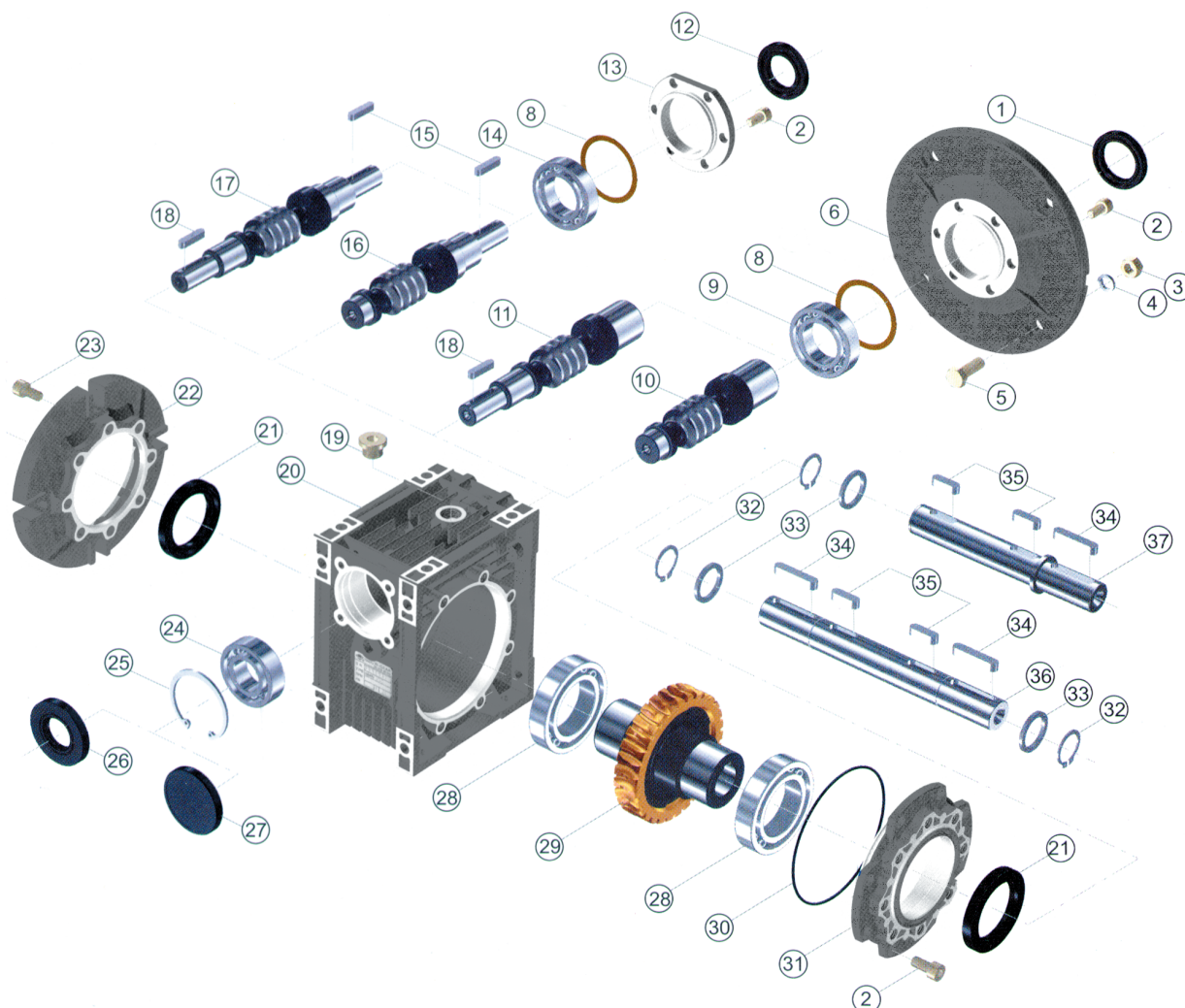
$$F_{RX} = F_R \frac{a}{b+x}$$



| SIZES                    |     |     |     |     |     |      |      |      |      |
|--------------------------|-----|-----|-----|-----|-----|------|------|------|------|
|                          | 030 | 040 | 050 | 063 | 075 | 090  | 110  | 130  | 150  |
| CONSTANTS' VALUES        |     |     |     |     |     |      |      |      |      |
| <b>a</b>                 | 86  | 106 | 129 | 159 | 192 | 227  | 266  | 314  | 350  |
| <b>b</b>                 | 76  | 94  | 114 | 139 | 167 | 202  | 236  | 274  | 310  |
| <b>F<sub>R</sub> max</b> | 210 | 350 | 490 | 700 | 980 | 1270 | 1700 | 2100 | 2800 |



## EXPLODED DRAWING AND SPARE PARTS LIST



|    |                                  |    |                               |
|----|----------------------------------|----|-------------------------------|
| 1  | OIL SEAL                         | 20 | CASING                        |
| 2  | TORX SCREW                       | 21 | OIL SEAL                      |
| 3  | NUT                              | 22 | OUTPUT FLANGE                 |
| 4  | WASHER                           | 23 | EMBEDDED HEXAGONAL-HEAD SCREW |
| 5  | HEXAGONAL-HEAD SCREW             | 24 | BEARING                       |
| 6  | MOTOR CONNECTION FLANGE          | 25 | SEEGER                        |
| 8  | ADJUST SPACER                    | 26 | OIL SEAL                      |
| 9  | BEARING                          | 27 | CAP                           |
| 10 | HOLE INPUT WORM                  | 28 | BEARING                       |
| 11 | HOLE INPUT AND SHAFT OUTPUT WORM | 29 | WORM WHEEL                    |
| 12 | OIL SEAL                         | 30 | O-RING                        |
| 13 | INPUT COVER                      | 31 | OUTPUT COVER                  |
| 14 | BEARING                          | 32 | SEEGER                        |
| 15 | KEY                              | 33 | SPACER                        |
| 16 | SHAFT INPUT WORM                 | 34 | KEY                           |
| 17 | DOUBLE EXTENDED INPUT SHAFT WORM | 35 | KEY                           |
| 18 | KEY                              | 36 | DOUBLE OUTPUT SHAFT           |
| 19 | OIL PLUG                         | 37 | SINGLE OUTPUT SHAFT           |

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

Quantity, availability and prices with Chiaravalli B2B



## INSTALLATION

- The data shown on the identification name plate must correspond to the gear ordered.
- The oil level, for the sizes 110 and 130 equipped with filling, draining and level plug, must correspond to the quantity foreseen for the assembly position requested (see catalogue), in addition, always for the sizes indicated, it will be the client's responsibility to substitute the blind plug, supplied for transport, with the corresponding plug equipped with a bleed hole included in the supply with the gear.
- All of the other gears are supplied complete with permanent synthetic oil in a quantity that is sufficient for any assembly position.
- The gear must be fixed on a flat surface that is sufficiently rigid in order to avoid any vibration.
- The gear 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.
- All of the gears are painted RAL 9022 grey.

## OPERATION AND RUNNING-IN

- To obtain the best performance the gears 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

- The worm gears from size 25 to size 90 and the pre-stage modules are lubricated with permanent synthetic oil and therefore do not require any maintenance.
- The gears size 110 and 130 are lubricated with mineral oil and are equipped with a breather plug, therefore the oil level must be checked periodically and if necessary topped up with the same oil or one that is compatible with those indicated in our catalogue.
- For the gears size 110 and 130 proceed with the substitution of the oil after the first 300 working hours, replacing it with the correct quantity in accordance with the assembly position, as detailed in our catalogue, after the inside of the gear has been thoroughly washed.

## 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.



## **CHML WORM GEARBOXES WITH TORQUE LIMITER**

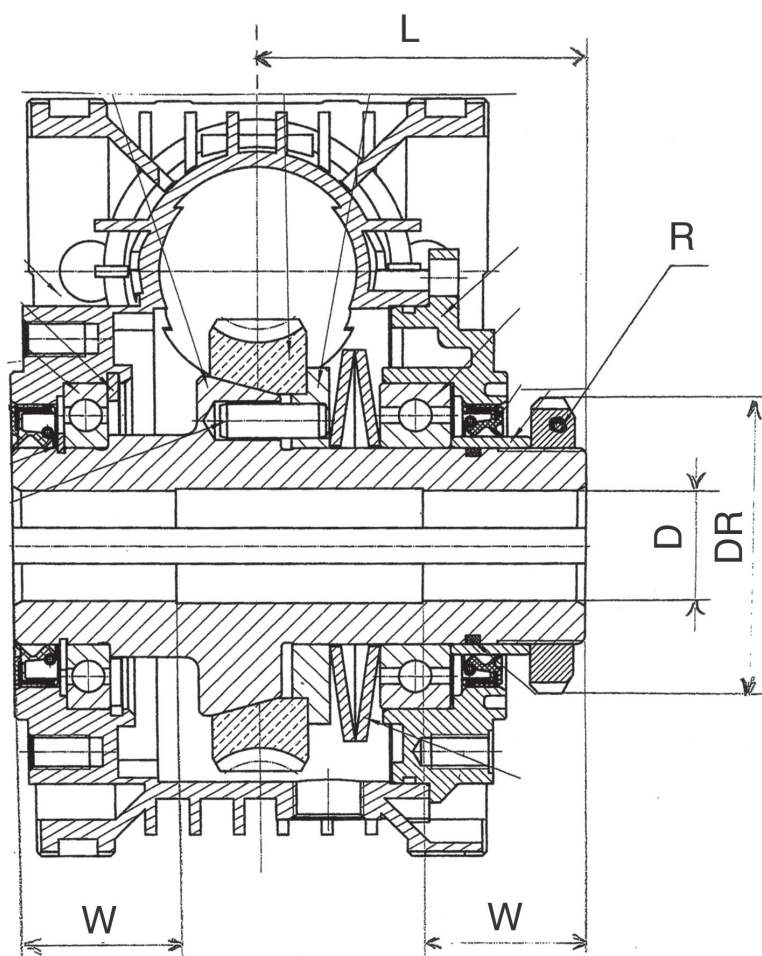




## DESIGN FEATURES

CHML worm gearboxes are manufactured in three sizes 40-50-63.  
The torque limiter assures protection of the gearbox from overloads.  
The torque limiter, in oil bath, is maintenance free.  
The hollow output shaft diameter is the same of standard gearboxes.  
Gearbox dimensions, external ring nut excluded, are unchanged.  
Adjusted the torque limiter with the ring nut in accordance to application request.

## DIMENSIONS



|           | 040     | 050     | 063     |
|-----------|---------|---------|---------|
| <b>L</b>  | 55      | 63,5    | 74      |
| <b>DR</b> | 45      | 56      | 62      |
| <b>R</b>  | M30x1,5 | M40x1,5 | M45x1,5 |
| <b>D</b>  | 18      | 25      | 25      |
| <b>W</b>  | 26      | 33      | 37      |

2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)  
Quantity, availability and prices with Chiaravalli B2B



## **CH WORM GEARED MOTORS AND WORM GEAR UNITS**



## INTRODUCTION

The new CH worm gearboxes of Chiaravalli Group S.p.A. have been produced to satisfy the market that require a product in dimensions and construction without changing the existing drawings and to guarantee non stop of their spare parts.

Chiaravalli Group S.p.A. designed this new product by improving and introducing better technical modifications to offer easier application of the groups to the different assembling configurations so that by offering a better service in flexibility and delivery time.

Starting from these considerations, we have a gearbox with a motor mounting flange that is separable from the housing which incorporate the oil seal; in this way we avoid any risk of damaging the oil seal in case of replacement of the input flange and the O-Ring can be eliminated.

All the aside covers, swinging and with feet, have O-Rings instead of traditional flat gaskets. The sizes 03-04-05 allow the rotation of the feet without disassembling them; furthermore the versions with swinging aside covers allow the lateral flanges to be fitted on both sides with simple fixing screws.

The worm screw has a ZI involute profile: with this worm-wheel coupling we shall get a better performance with a temperature reduction.

The gearboxes and motors are painted with RAL 9022 aluminium colour epoxy powder to protect the parts from oxidation and against micro-blowholes that can come during the pressure of die-castings.

The CHPC pre-stage gears (already present in the catalogue of CHM) can also be mounted with this range, obtaining a gear ratio up to 1:300.

For bigger reductions is possible to have two gears together using an appropriate kit.



## LUBRICATION

59

All of the groups are supplied with a synthetic lubricant maintenance free and can be mounted in any position. The types of lubricants are described in the table here below.

| Lubricant  | Ambient     | ISO    | AGIP           | SHELL            | IP         |
|------------|-------------|--------|----------------|------------------|------------|
| °C ambient | -25°C/+50°C | VG 320 | Telium VSF 320 | Tivela oil S 320 | Telium VSF |
|            |             |        |                |                  |            |

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

Quantity, availability and prices with Chiaravalli B2B



## QUANTITY OF OIL IN LITRES

| CH | 03    | 04    | 05   | 06   | 07   | 08   |
|----|-------|-------|------|------|------|------|
|    | 0.040 | 0.060 | 0.10 | 0.38 | 0.52 | 0.73 |



## MOTOR MOUNTING FLANGES

Gears supplied with mounting flanges must be assembled with motors whose shaft and flange tolerances correspond to a "normal" class of quality in order to avoid vibration and forcing of the input bearing. Motors supplied by Chiaravalli Group S.p.A. guarantee this requirement fulfilled. For ease of consultation, the correspondence of the size of the B5 and B14 motor with the sizes of the shaft and the motor connection flange are shown in the following table.

Remember that, as the motor connection flanges are separate from the body it is also possible to have a shaft / flange combination that does not correspond to the table, e.g. 19/140, thereby offering adaptability for other non-unified models such as the brushless or direct current types.

| MMF | 056   | 063    | 071    | 080    | 090    | 100    | 112    |
|-----|-------|--------|--------|--------|--------|--------|--------|
| B5  | 9/120 | 11/140 | 14/160 | 19/200 | 24/200 | 28/250 | 28/250 |
| B14 | 9/80  | 11/90  | 14/105 | 19/120 | 24/140 | 28/160 | 28/160 |



## NEW MODEL





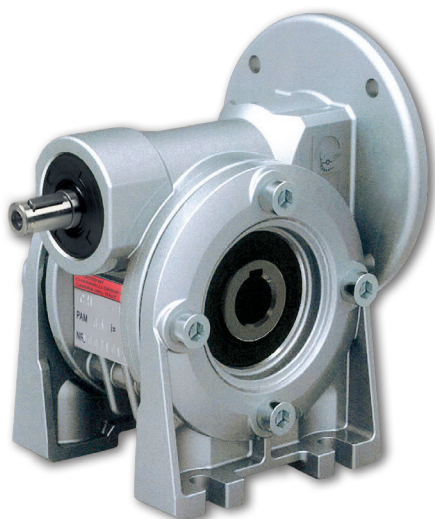
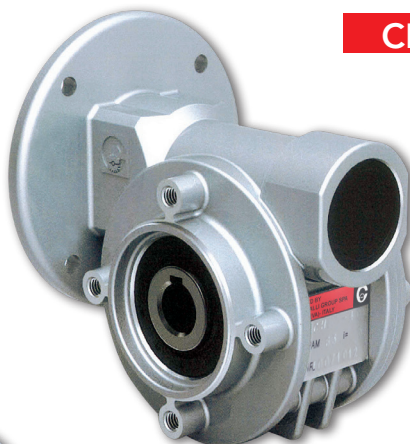


# CH 03/04/05 WORM GEARED MOTORS AND WORM GEAR UNITS

CH...

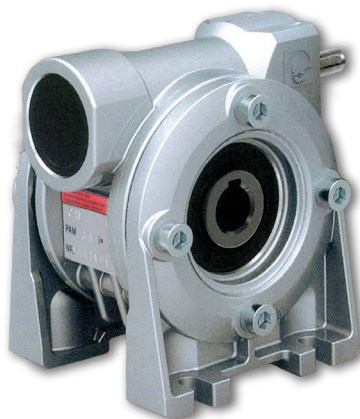
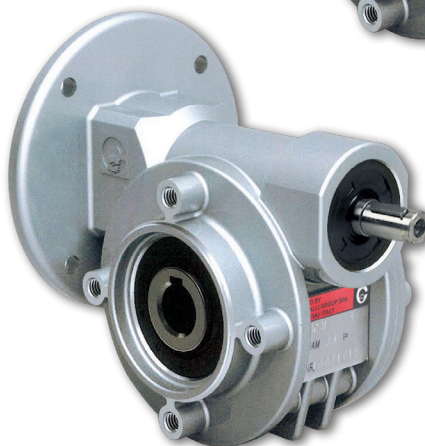


CH...P



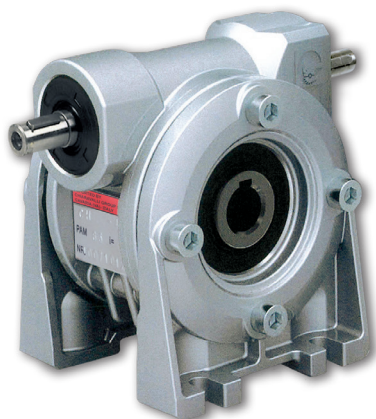
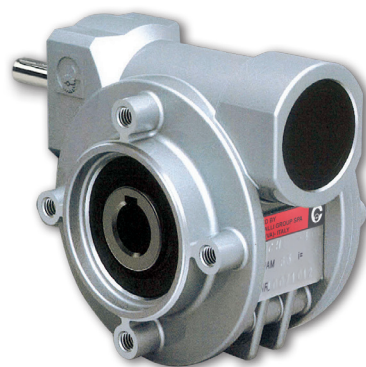
CHE...

CHE...P

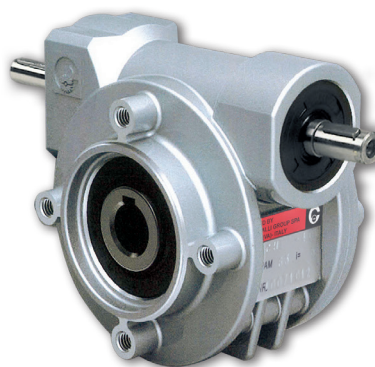


CHR...

CHR...P



CHRE...



CHRE...P



## CH - CH...P 03/04/05 DESIGNATION

| TYPE (1) | SIZE | VERSION | FLANGE POS. (2) | i                    | M.M.F. | MOUNT. POS. |
|----------|------|---------|-----------------|----------------------|--------|-------------|
| CH       | 03   | A       | 1               | RATIO SEE<br>PAGE 64 | 63B5   | UNIVERSALE  |
| CH..P    |      | P       | 2               |                      | 63B14  |             |
| CHR      |      | PF      |                 |                      | 56B5   |             |
| CHR..P   |      | N       |                 |                      | 56B14  |             |
| CHE      |      | V       |                 |                      |        |             |
| CHE..P   |      |         |                 |                      |        |             |
| CHRE     |      |         |                 |                      |        |             |
| CHRE..P  |      |         |                 |                      |        |             |

| TYPE (1) | SIZE | VERSION | FLANGE POS. (2) | i                    | M.M.F. | MOUNT. POS. |
|----------|------|---------|-----------------|----------------------|--------|-------------|
| CH       | 04   | A       | 1               | RATIO SEE<br>PAGE 65 | 71B5   | UNIVERSALE  |
| CH..P    |      | P       | 2               |                      | 71B14  |             |
| CHR      |      | PF      |                 |                      | 63B5   |             |
| CHR..P   |      | PFA     |                 |                      | 63B14  |             |
| CHE      |      | N       |                 |                      |        |             |
| CHE..P   |      | V       |                 |                      |        |             |
| CHRE     |      |         |                 |                      |        |             |
| CHRE..P  |      |         |                 |                      |        |             |

| TYPE (1) | SIZE | VERSION | FLANGE POS. (2) | i                    | M.M.F. | MOUNT. POS. |
|----------|------|---------|-----------------|----------------------|--------|-------------|
| CH       | 05   | A       | 1               | RATIO SEE<br>PAGE 66 | 80B5   | UNIVERSALE  |
| CH..P    |      | P       | 2               |                      | 80B14  |             |
| CHR      |      | PF      |                 |                      | 71B5   |             |
| CHR..P   |      | PFA     |                 |                      | 71B14  |             |
| CHE      |      | N       |                 |                      | 63B5   |             |
| CHE..P   |      | V       |                 |                      | 63B14  |             |
| CHRE     |      |         |                 |                      |        |             |
| CHRE..P  |      |         |                 |                      |        |             |

62

CH - CH...P 03/04/05 DESIGNATION - ORDER EXAMPLE



## ORDER EXAMPLE

|    |     |    |   |    |        |
|----|-----|----|---|----|--------|
| CH | 04P | FA | 2 | 35 | 63 B14 |
| CH | 04  |    |   | 10 | 71 B5  |

If the motor is also required, please specify:

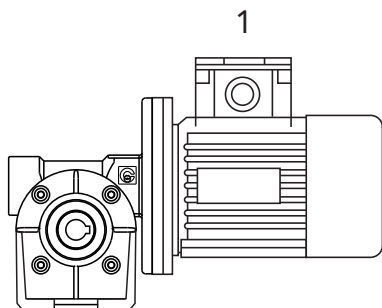
Size es. 63 C4  
 Power es. Kw 0.22  
 Poles es. 4  
 Voltage es. V230/400  
 Frequency es. 50 Hz  
 Flange es. B14

N.B. Gear box required with output flanges F or FA must be ordered PF or PFA version.

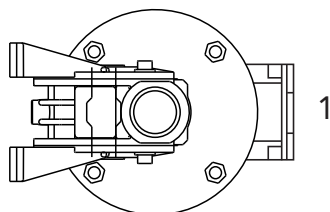
1) see page 61  
 2) see page 63



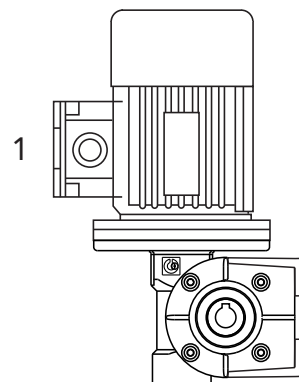
**B3**



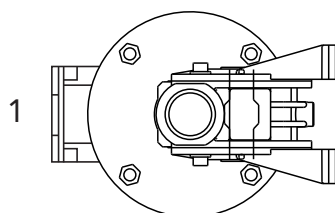
**B6**



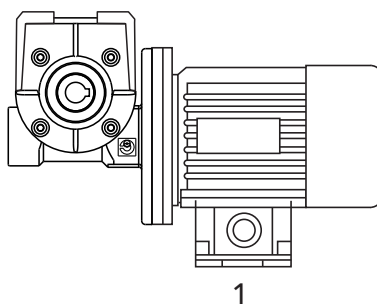
**V5**



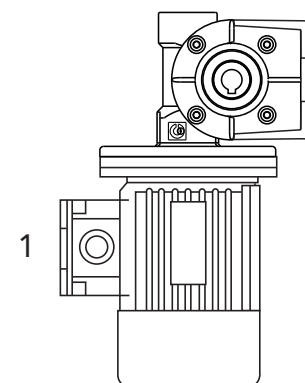
**B7**



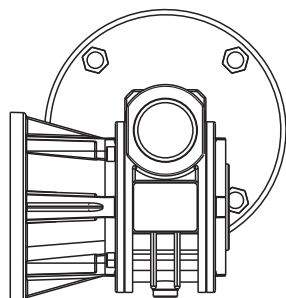
**B8**



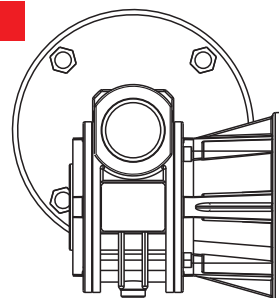
**V6**



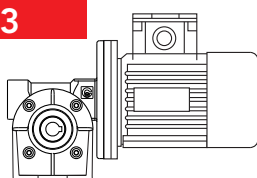
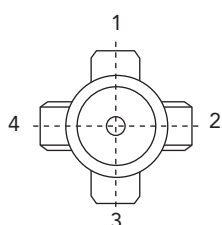
**PF1**



**PF2**



**B3**



## TERMINAL BOX POSITION

N.B. The position of the terminal box always refers to the B3 position.



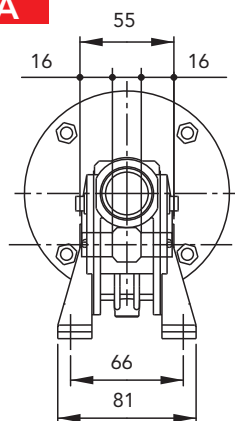
## CH 03 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE  | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |        |
|-------|---------|----------|-------|-------|------|-------------------------------------|--------|
| CH 03 | 7       | 200      | 0.22  | 8     | 1.8  | 63/56                               | B5/B14 |
|       | 10      | 140      | 0.22  | 11    | 1.4  | 63/56                               | B5/B14 |
|       | 15      | 93       | 0.22  | 16    | 1.0  | 63/56                               | B5/B14 |
|       | 20      | 70       | 0.22  | 20    | 0.9  | 63/56                               | B5/B14 |
|       | 30      | 47       | 0.18  | 22    | 0.8  | 63/56                               | B5/B14 |
|       | 40      | 35       | 0.12  | 18    | 1.0  | 63/56                               | B5/B14 |
|       | 60      | 23       | 0.09  | 18    | 1.0  | 63/56                               | B5/B14 |
|       | 70      | 20       | 0.09  | 15    | 0.9  | 56                                  | B5/B14 |

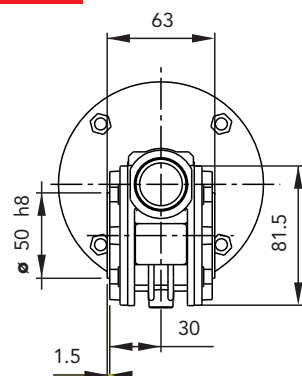
Weight Kg 1

### DIMENSIONS

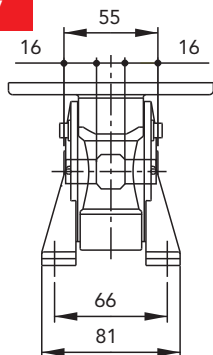
A



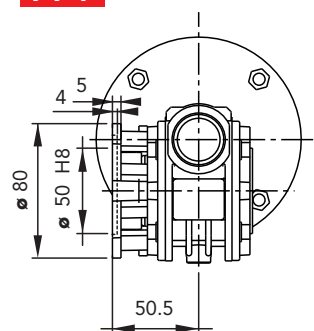
P



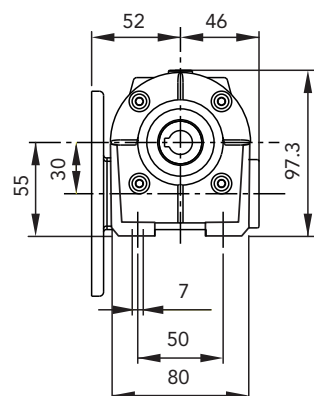
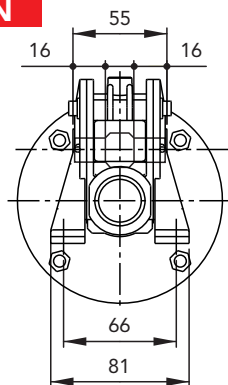
V



PF1



N







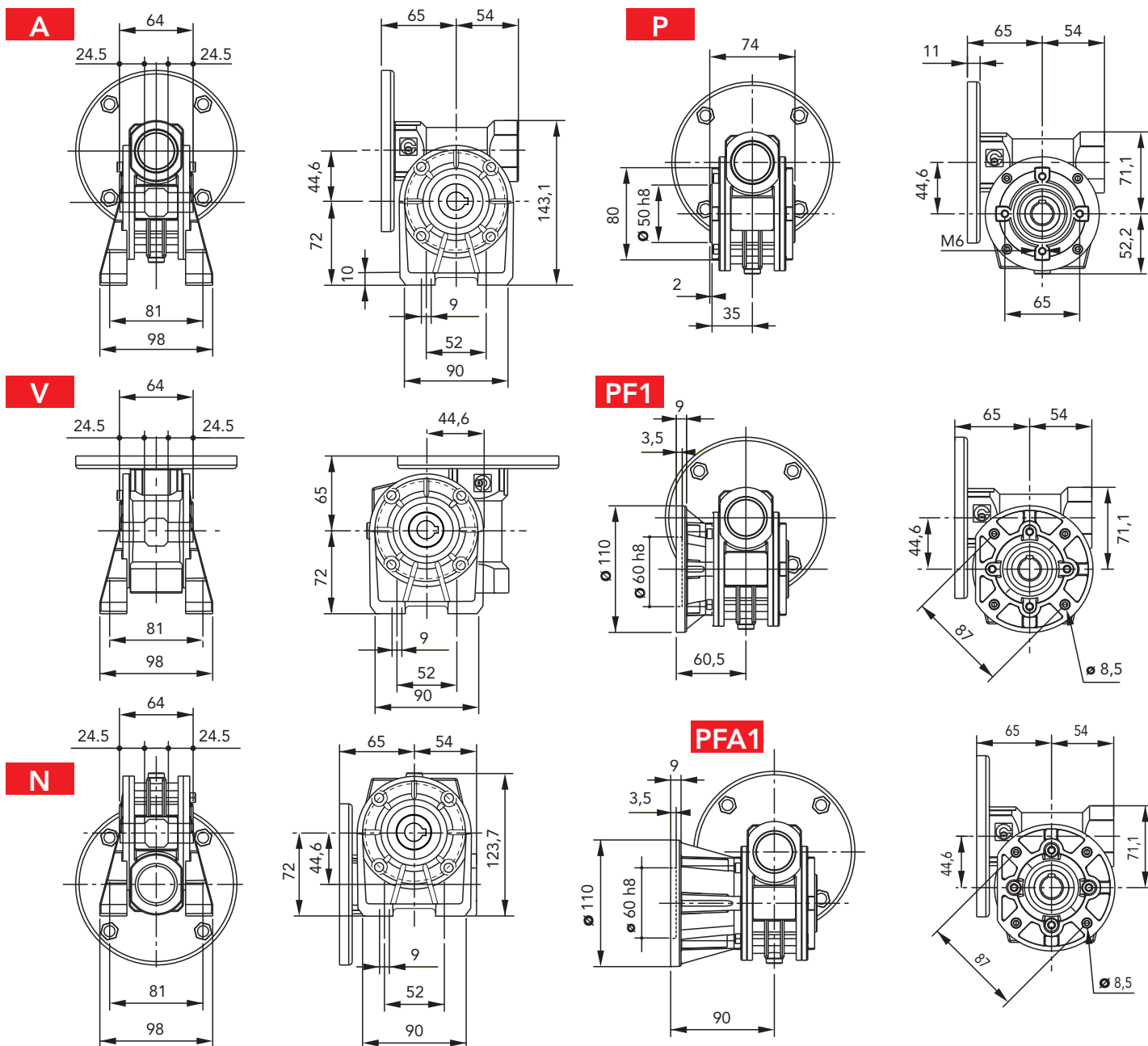
## CH 04 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE  | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |        |
|-------|---------|----------|-------|-------|------|-------------------------------------|--------|
| CH 04 | 7       | 200      | 0.55* | 22    | 1.4  | 71/63                               | B5/B14 |
|       | 10      | 140      | 0.55* | 30    | 1.0  | 71/63                               | B5/B14 |
|       | 14      | 100      | 0.37  | 29    | 1.0  | 71/63                               | B5/B14 |
|       | 20      | 70       | 0.37  | 38    | 1.0  | 71/63                               | B5/B14 |
|       | 28      | 50       | 0.37  | 40    | 0.9  | 71/63                               | B5/B14 |
|       | 35      | 40       | 0.25  | 41    | 0.9  | 71/63                               | B5/B14 |
|       | 46      | 30       | 0.18  | 37    | 1.0  | 63                                  | B5/B14 |
|       | 60      | 23       | 0.18  | 37    | 0.9  | 63                                  | B5/B14 |
|       | 70      | 20       | 0.12  | 33    | 0.9  | 63                                  | B5/B14 |
|       | 100     | 14       | 0.12  | 30    | 0.9  | 63                                  | B5/B14 |

\* Motors 71 gr.

Weight Kg 2,1

### DIMENSIONS





## CH 05 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

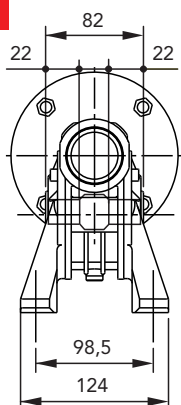
| TYPE  | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |        |
|-------|---------|----------|-------|-------|------|-------------------------------------|--------|
| CH 05 | 7       | 200      | 1.1*  | 40    | 1.4  | 80/71                               | B5/B14 |
|       | 10      | 140      | 1.1*  | 49    | 1.2  | 80/71                               | B5/B14 |
|       | 14      | 100      | 0.75  | 57    | 1.1  | 80/71                               | B5/B14 |
|       | 18      | 78       | 0.55  | 52    | 1.1  | 80/71                               | B5/B14 |
|       | 24      | 58       | 0.55  | 67    | 0.9  | 80/71                               | B5/B14 |
|       | 28      | 50       | 0.55  | 73    | 1.0  | 80/71                               | B5/B14 |
|       | 36      | 39       | 0.37  | 61    | 1.1  | 71                                  | B5/B14 |
|       | 45      | 31       | 0.37  | 65    | 0.9  | 71/63                               | B5/B14 |
|       | 60      | 23       | 0.25  | 60    | 1.0  | 71/63                               | B5/B14 |
|       | 70      | 20       | 0.22  | 55    | 0.9  | 63                                  | B5/B14 |
|       | 80      | 17       | 0.18  | 54    | 1.0  | 63                                  | B5/B14 |
|       | 100     | 14       | 0.18  | 50    | 0.9  | 63                                  | B5/B14 |

\* Motors 80 gr.

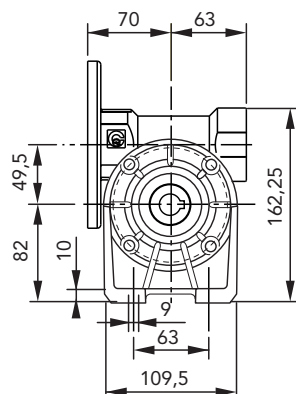
Weight Kg 3

### DIMENSIONS

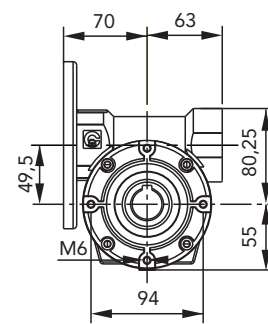
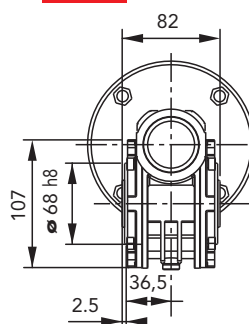
A



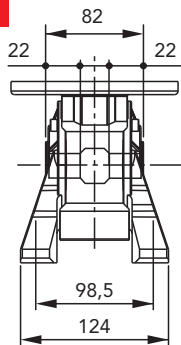
P



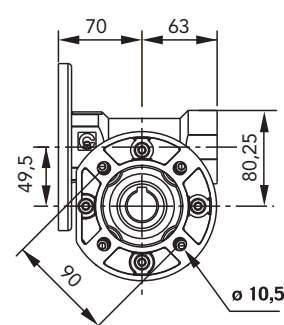
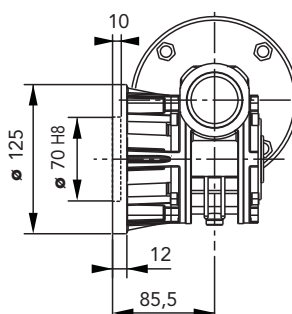
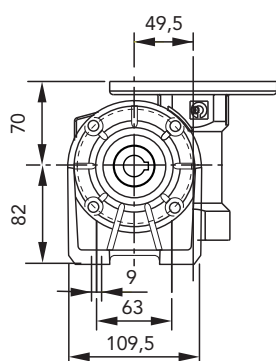
P



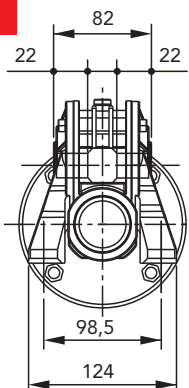
V



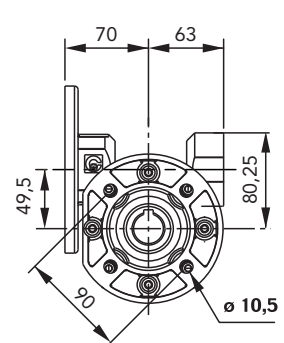
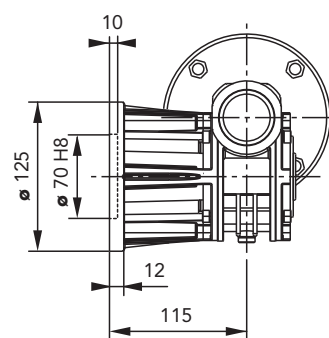
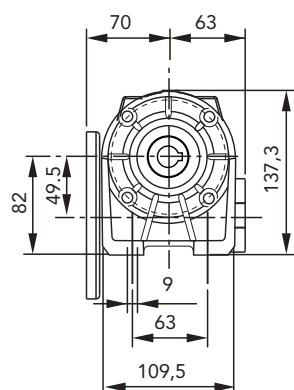
PF1

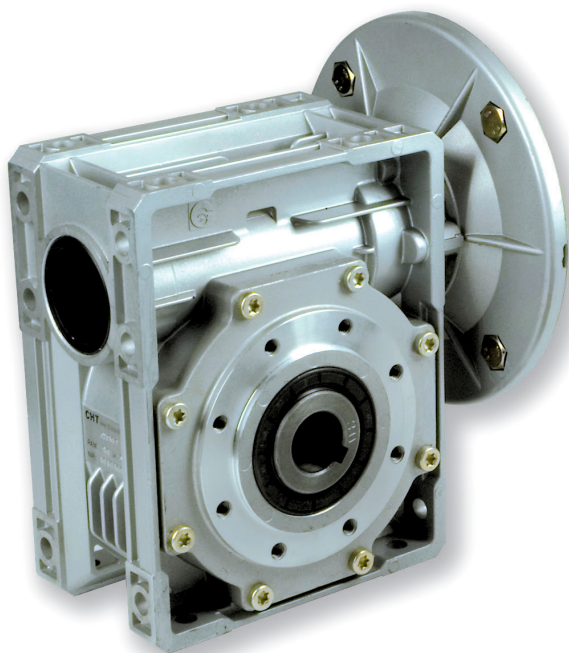


N

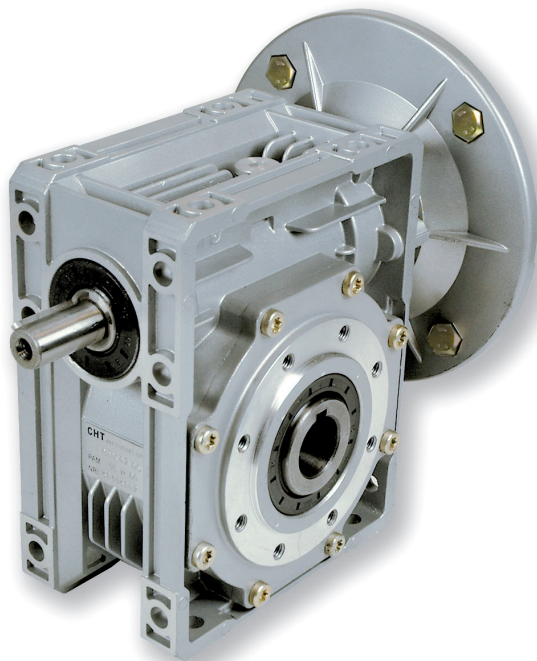


PFA1

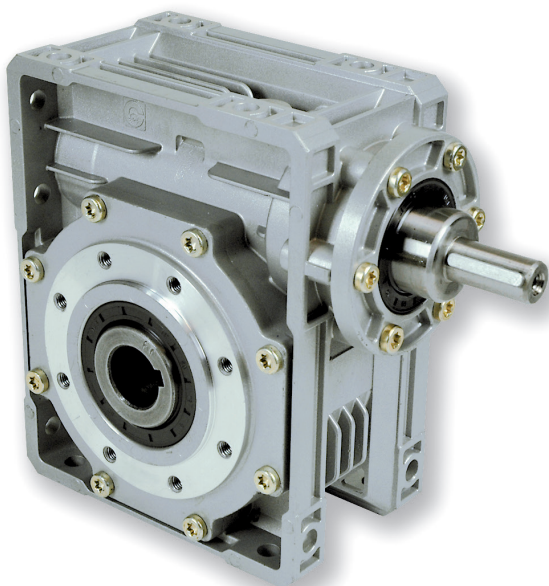




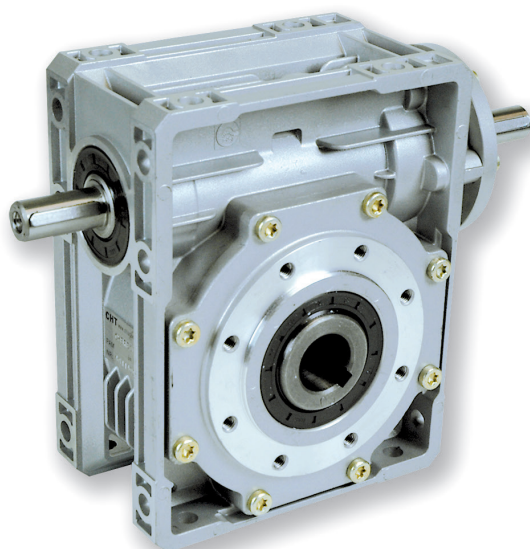
CH..



CHE..



CHR..



CHRE..



## CH 06/07/08 DESIGNATION

| TYPE (1) | SIZE | VERSION | FLANGE POS. (2) | i                             | M.M.F. | MOUNT. POS. |
|----------|------|---------|-----------------|-------------------------------|--------|-------------|
| CH       | 06   | FC      | 1               | RATIO SEE<br>PAGE<br>70-71-72 | 100B5  | UNIVERSALE  |
| CHR      | 07   | F       | 2               |                               | 100B14 |             |
| CHE      | 08   | (3)     |                 |                               | 90B5   |             |
| CHRE     |      |         |                 |                               | 90B14  |             |
|          |      |         |                 |                               | 80B5   |             |
|          |      |         |                 |                               | 80B14  |             |
|          |      |         |                 |                               | 71B5   |             |
|          |      |         |                 |                               | 71B14  |             |



## ORDER EXAMPLE

|    |    |    |   |    |       |
|----|----|----|---|----|-------|
| CH | 06 | FC | 1 | 19 | 90 B5 |
|----|----|----|---|----|-------|

If the motor is also required, please specify:

Size es. 90 L4  
Power es. Kw 1.5  
Poles es. 4  
Voltage es. V230/400  
Frequency es. 50 Hz  
Flange es. B5

1) see page 67

2) see page 69

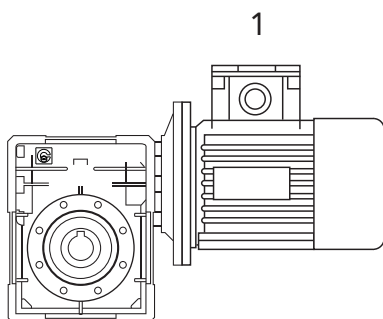
3) lack of instructions indicates that the gear is not equipped with an output flange



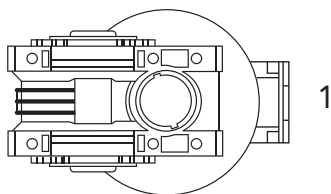


## MOUNTING POSITION

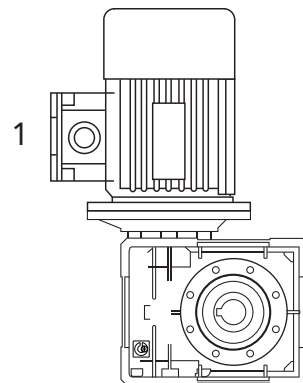
**B3**



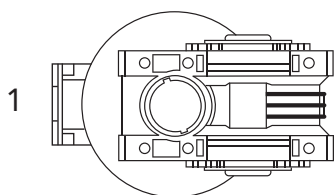
**B6**



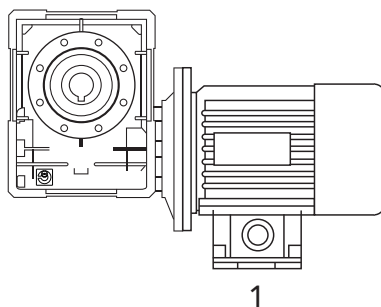
**V5**



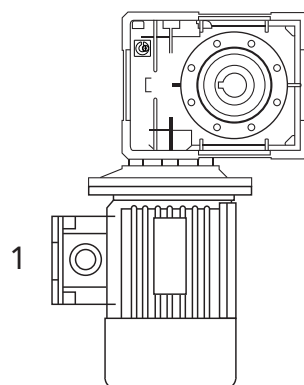
**B7**



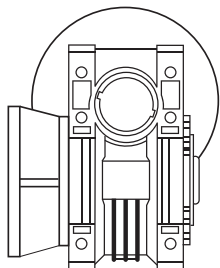
**B8**



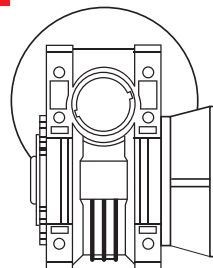
**V6**



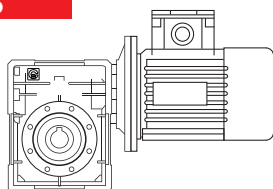
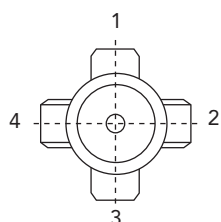
**F1**



**F2**



**B3**



### TERMINAL BOX POSITION

N.B. The position of the terminal box always refers to the B3 position.

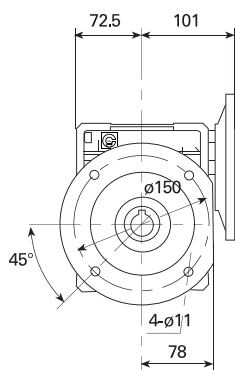
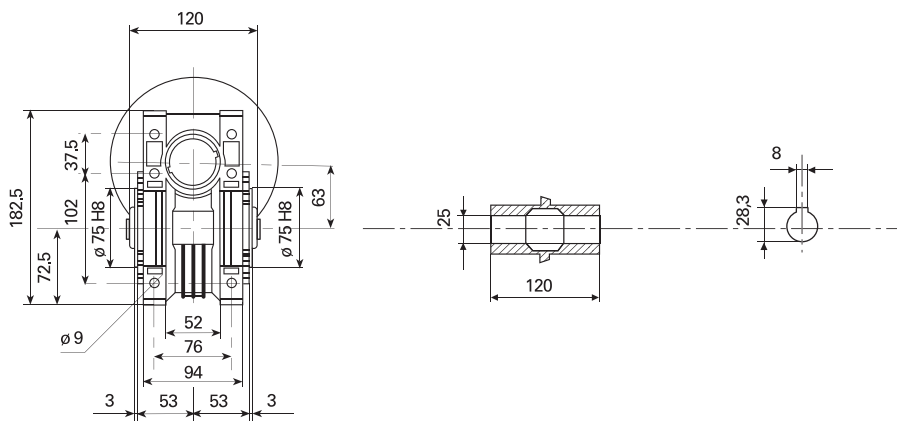
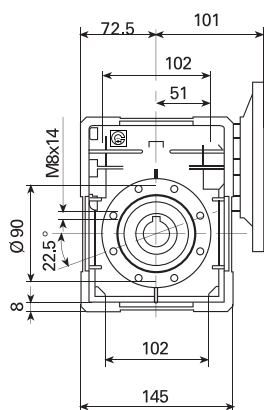


## CH 06 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

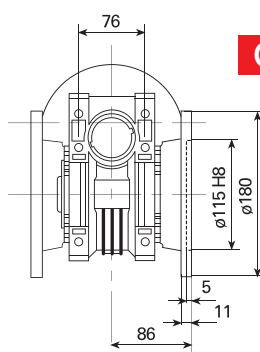
| TYPE  | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |        |
|-------|---------|----------|-------|-------|------|-------------------------------------|--------|
| CH 06 | 7       | 200      | 1.85  | 75    | 1.5  | 90/80                               | B5/B14 |
|       | 10      | 140      | 1.85  | 105   | 1.3  | 90/80                               | B5/B14 |
|       | 12      | 117      | 1.85  | 129   | 1.1  | 90/80                               | B5/B14 |
|       | 15      | 93       | 1.85  | 146   | 1.0  | 90/80                               | B5/B14 |
|       | 19      | 74       | 1.50  | 150   | 1.0  | 90/80                               | B5/B14 |
|       | 24      | 58       | 1.10  | 138   | 1.1  | 90/80                               | B5/B14 |
|       | 30      | 47       | 1.10  | 155   | 1.0  | 90/80                               | B5/B14 |
|       | 38      | 37       | 0.75  | 133   | 1.1  | 90/80                               | B5/B14 |
|       | 45      | 31       | 0.75  | 152   | 0.9  | 80/71                               | B5/B14 |
|       | 64      | 22       | 0.37  | 101   | 1.2  | 80/71                               | B5/B14 |
|       | 80      | 17       | 0.37  | 112   | 1.0  | 71                                  | B5/B14 |
|       | 100     | 14       | 0.37  | 110   | 1.0  | 71                                  | B5/B14 |

Weight Kg 5,2

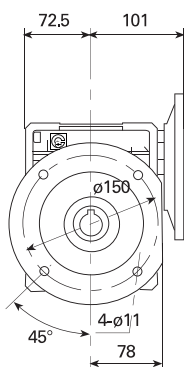
### DIMENSIONS



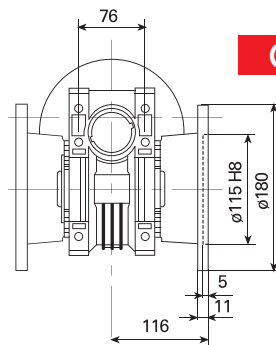
CH06FC 1



CH06FC 2



CH06F1



CH06F2



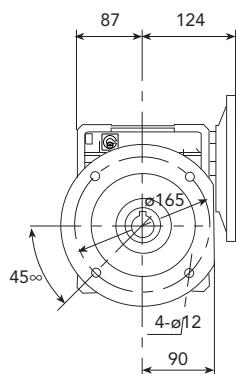
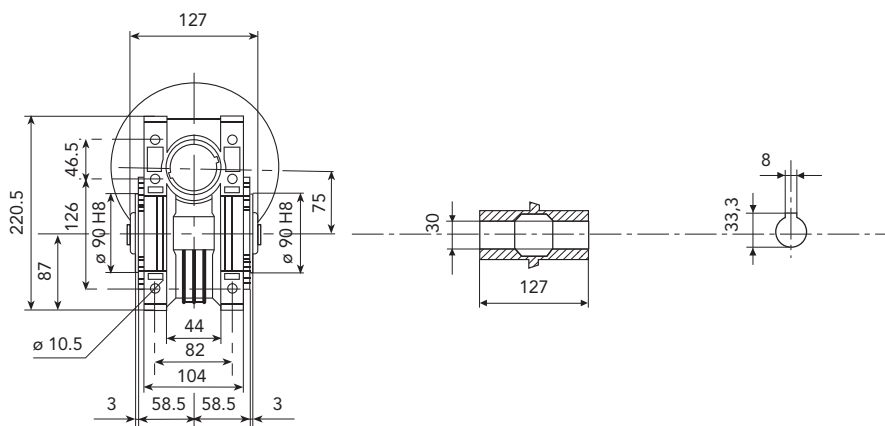
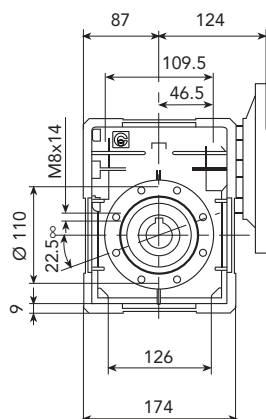
## CH 07 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE  | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |          |
|-------|---------|----------|-------|-------|------|-------------------------------------|----------|
| CH 07 | 7       | 200      | 4     | 170   | 1.1  | 100/90                              | B5/B14   |
|       | 10      | 140      | 3     | 175   | 1.3  | 100/90                              | B5/B14   |
|       | 15      | 93       | 3     | 250   | 1.0  | 100/90                              | B5/B14   |
|       | 20      | 70       | 2.20  | 240   | 1.0  | 100/90                              | B5/B14   |
|       | 25      | 56       | 1.85  | 250   | 1.0  | 90/80                               | B5/B14   |
|       | 30      | 47       | 1.50  | 230   | 1.2  | 90/80                               | B5/B14   |
|       | 40      | 35       | 1.1   | 215   | 1.2  | 90/80                               | B5/B14   |
|       | 50      | 28       | 1.1   | 220   | 0.9  | 90/80                               | B5/B14   |
|       | 60      | 23       | 0.75  | 200   | 1.0  | 90/80                               | B5/B14   |
|       | 80      | 17       | 0.55  | 180   | 1.0  | 80/71                               | B5/B14 * |
|       | 100     | 14       | 0.37  | 140   | 1.1  | 80/71                               | B5/B14 * |

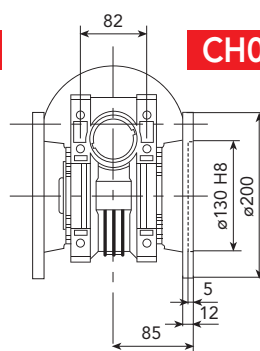
\*71 solo B5

Weight Kg 9,2

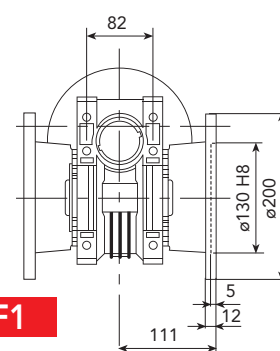
## DIMENSIONS



CH07FC 1

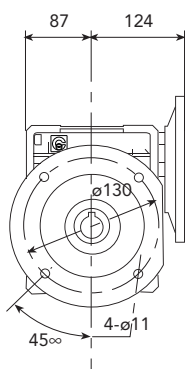


CH07FC 2

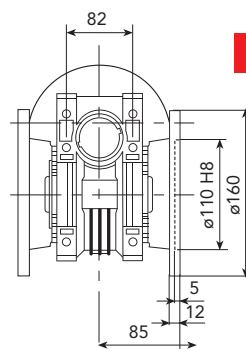


CH07F1

CH07F2



CH07FE1



CH07FE2

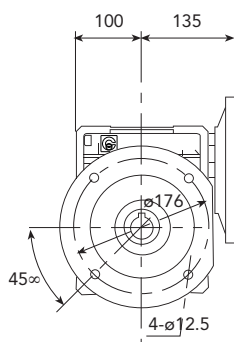
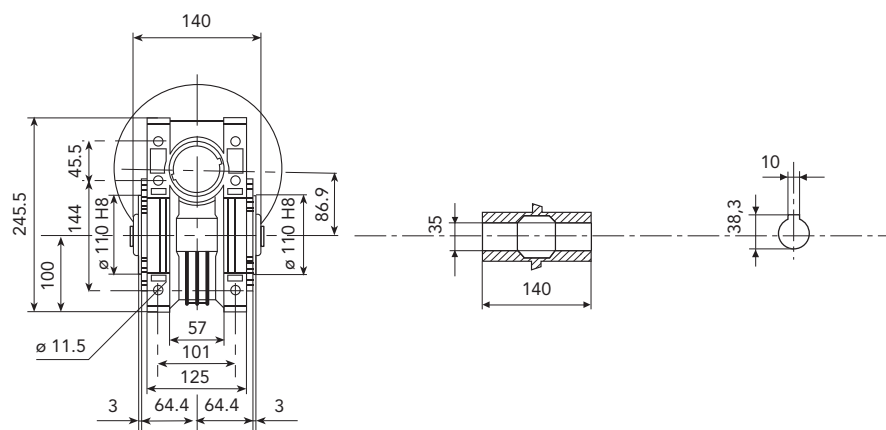
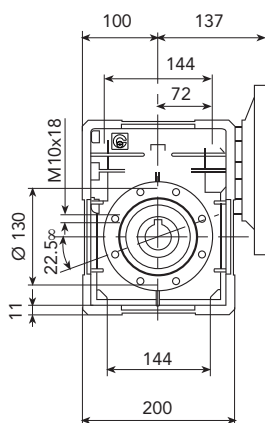


## CH 08 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

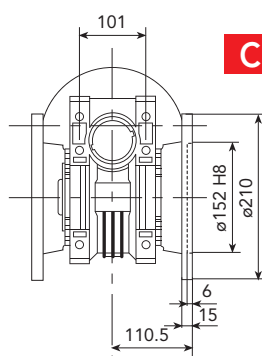
| TYPE  | i=ratio | n2 r/min | Kw=P1 | Nm=T2 | f.s. | Possible types of motor connections |        |
|-------|---------|----------|-------|-------|------|-------------------------------------|--------|
| CH 08 | 7       | 200      | 4     | 170   | 1.5  | 112/100/90                          | B5/B14 |
|       | 10      | 140      | 4     | 240   | 1.2  | 112/100/90                          | B5/B14 |
|       | 15      | 93       | 4     | 350   | 0.9  | 112/100/90                          | B5/B14 |
|       | 20      | 70       | 3.00  | 340   | 0.9  | 100/90                              | B5/B14 |
|       | 23      | 61       | 2.20  | 280   | 1.1  | 100/90                              | B5/B14 |
|       | 30      | 47       | 2.20  | 340   | 1.1  | 100/90                              | B5/B14 |
|       | 40      | 35       | 1.85  | 340   | 0.9  | 90/80                               | B5/B14 |
|       | 46      | 30       | 1.5   | 340   | 1.0  | 90/80                               | B5/B14 |
|       | 56      | 25       | 1.1   | 290   | 1.0  | 90/80                               | B5/B14 |
|       | 64      | 22       | 1.1   | 290   | 0.9  | 90/80                               | B5/B14 |
|       | 80      | 17       | 0.75  | 260   | 1.0  | 90/80                               | B5/B14 |
|       | 100     | 14       | 0.55  | 220   | 1.0  | 80                                  | B5/B14 |

Weight Kg 12,2

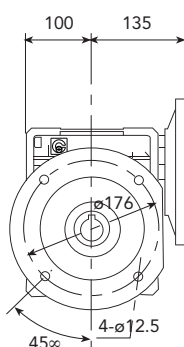
### DIMENSIONS



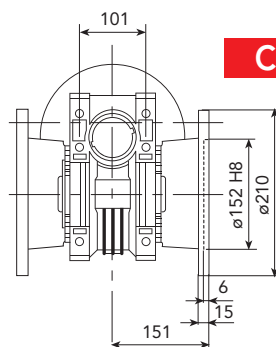
CH08FC 1



CH08FC 2



CH08F1

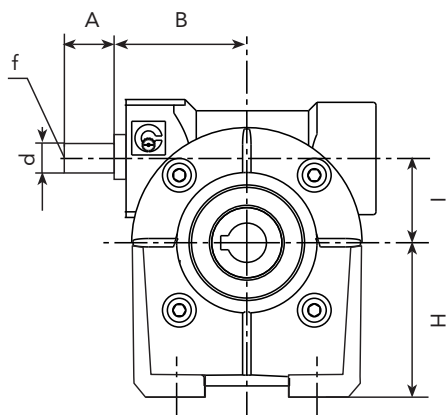


CH08F2

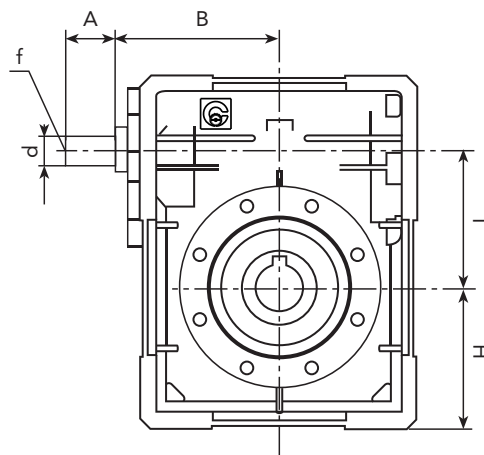




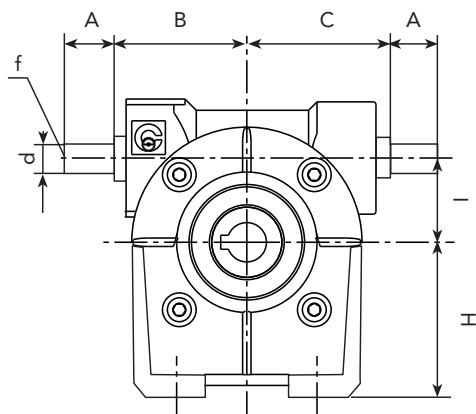
## CHR 03-04-05



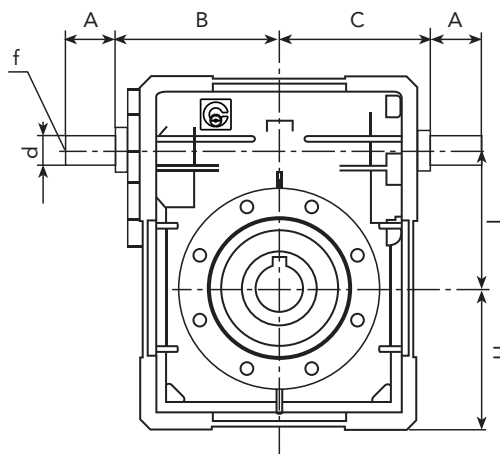
## CHR 06-07-08



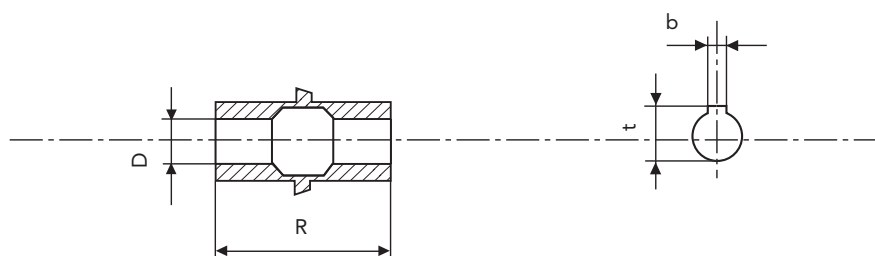
## CHRE 03-04-05



## CHRE 06-07-08



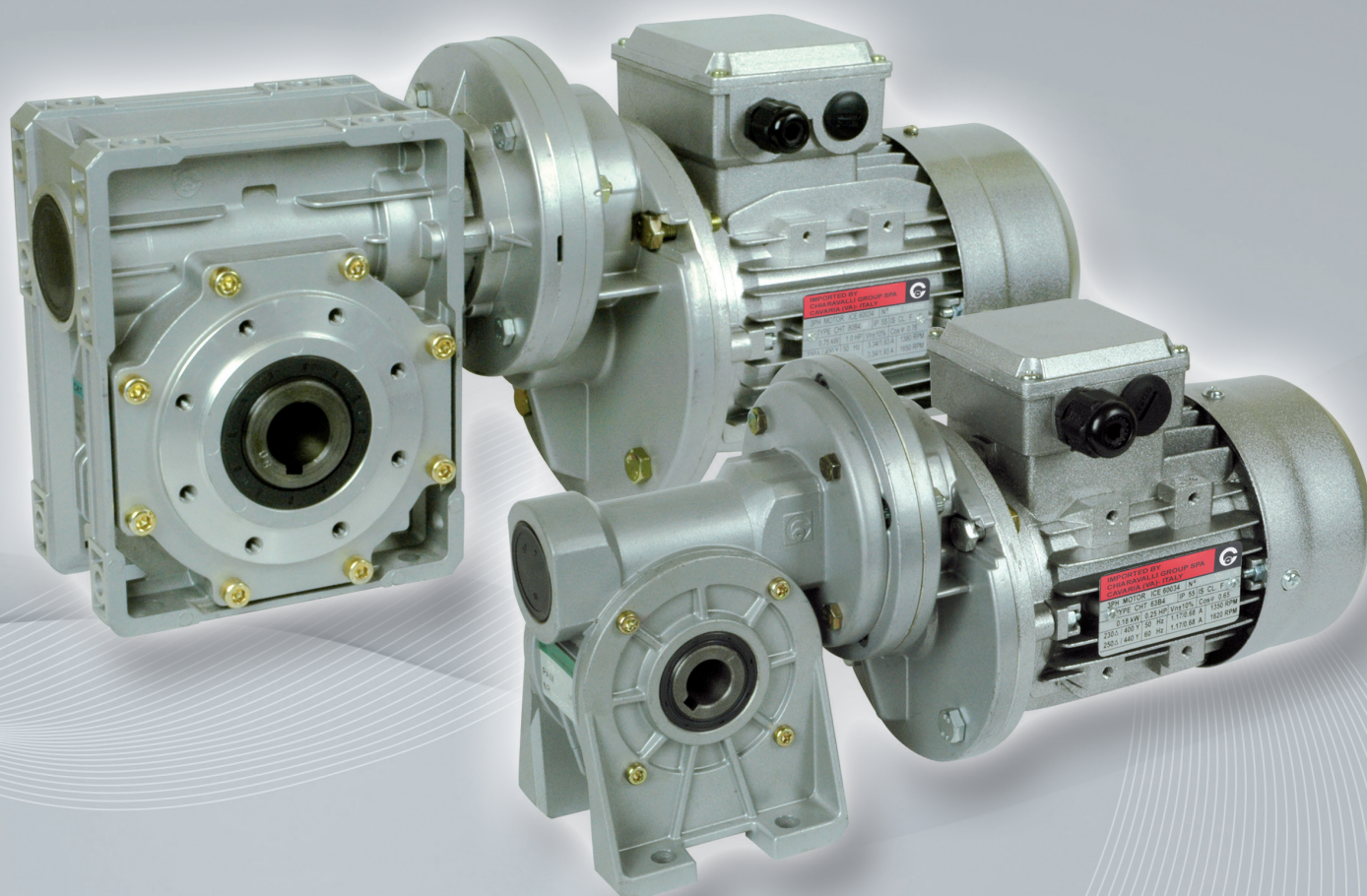
## OUTPUT SHAFT DIMENSIONS



| TYPE    | A  | B     | C     | D(H7) | d(h6) | f  | H    | I     | R   | b  | t    |
|---------|----|-------|-------|-------|-------|----|------|-------|-----|----|------|
| CHR 03  | 20 | 50    | /     | 14    | 9     | /  | 55   | 30    | 55  | 5  | 16.3 |
| CHR 04  | 30 | 54    | /     | 18    | 11    | /  | 72   | 44.6  | 64  | 6  | 20.8 |
| CHR 05  | 40 | 65    | /     | 25    | 16    | M6 | 82   | 49.5  | 82  | 8  | 28.3 |
| CHR 06  | 40 | 110.5 | /     | 25    | 18    | M6 | 72.5 | 62.17 | 120 | 8  | 28.3 |
| CHR 07  | 40 | 128   | /     | 30    | 19    | M6 | 87   | 75    | 127 | 8  | 33.3 |
| CHR 08  | 50 | 144   | /     | 35    | 25    | M8 | 100  | 86.9  | 140 | 10 | 38.8 |
| CHRE 03 | 20 | 50    | 50    | 14    | 9     | /  | 55   | 30    | 55  | 5  | 16.3 |
| CHRE 04 | 30 | 54    | 56    | 18    | 11    | /  | 72   | 44.6  | 64  | 6  | 20.8 |
| CHRE 05 | 40 | 65    | 65    | 25    | 16    | M6 | 82   | 49.5  | 82  | 8  | 28.3 |
| CHRE 06 | 40 | 110.5 | 74    | 25    | 18    | M6 | 72.5 | 62.17 | 120 | 8  | 28.3 |
| CHRE 07 | 40 | 128   | 88.5  | 30    | 19    | M6 | 87   | 75    | 127 | 8  | 33.3 |
| CHRE 08 | 50 | 144   | 101.5 | 35    | 25    | M8 | 100  | 86.9  | 140 | 10 | 38.3 |

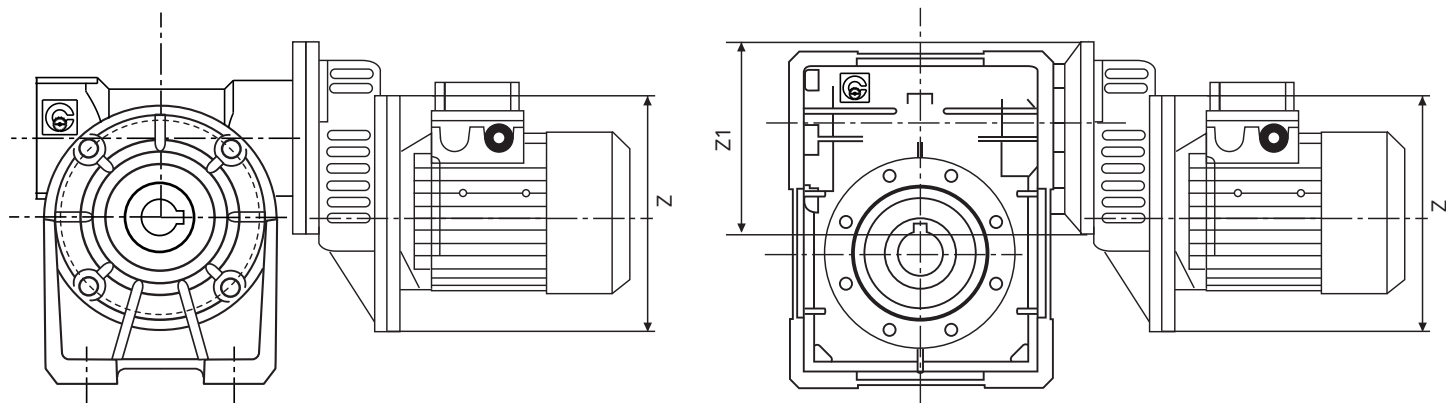


## CHPC/CH - WORM GEAR WITH PRE-STAGE MODULE





## WORM GEAR WITH PRE-STAGE MODULE



|         | Z      | Z1     |
|---------|--------|--------|
| CHPC 63 | 11/140 | 11/105 |
| CHPC 71 | 14/160 | 14/120 |
| CHPC 80 | 19/200 | 19/160 |

**WARNING:** The gearbox connected with the pre-stage must have input dimension Z1

| DESIGNATION |  | CHPC / CH - CH..P |     | CHPC / CHE - CH..P |  |  |  |
|-------------|--|-------------------|-----|--------------------|--|--|--|
| TYPE        |  | SIZE              | i = | M.M.F.             |  |  |  |
| CHPC        |  | 63                | 3   | 63B5               |  |  |  |
|             |  | 71                | 3   | 71B5               |  |  |  |
|             |  | 80                | 3   | 80B5               |  |  |  |

### ORDER EXAMPLE

CHPC 71 CH 05 i= 108(3x36) M.M.F. 71

If the motor is also required, please specify:

Size es. 71 B4  
Power es. Kw 0.37  
Poles es. 4  
Voltage es. V230/400  
Frequency es. 50 Hz

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

Quantity, availability and prices with Chiaravalli B2B



# CHPC/CH - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
| CHPC63 | 105     | 13.3     | 0.12  | 42    |
|        | 138     | 10.1     | 0.12  | 42    |
| CH 04  | 180     | 7.8      | 0.12  | 46    |
|        | 210     | 6.7      | 0.12  | 40    |
|        | 300     | 4.7      | 0.12  | 36    |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
| CHPC71 | 84      | 16.7     | 0.25  | 80    |
| CH 05  | 108     | 12.9     | 0.25  | 90    |
|        | 135     | 10.4     | 0.25  | 90    |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
| CHPC71 | 120     | 11.7     | 0.55  | 280   |
|        | 150     | 9.3      | 0.37  | 215   |
| CH 07  | 180     | 7.8      | 0.37  | 235   |
|        | 240     | 5.8      | 0.37  | 210   |
|        | 300     | 4.7      | 0.25  | 275   |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
| CHPC71 | 168     | 8.3      | 0.55  | 350   |
| CH 08  | 192     | 7.3      | 0.37  | 280   |
|        | 240     | 5.8      | 0.37  | 290   |
|        | 300     | 4.7      | 0.37  | 275   |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
| CHPC63 | 108     | 12.9     | 0.18  | 72    |
|        | 135     | 10.4     | 0.18  | 85    |
| CH 05  | 180     | 7.8      | 0.12  | 65    |
|        | 210     | 6.7      | 0.12  | 67    |
|        | 240     | 5.8      | 0.12  | 58    |
|        | 300     | 4.7      | 0.12  | 56    |

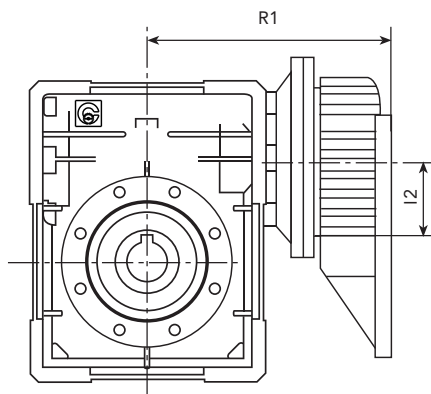
| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
| CHPC71 | 114     | 12.3     | 0.37  | 170   |
|        | 135     | 10.4     | 0.37  | 176   |
| CH 06  | 192     | 7.3      | 0.25  | 149   |
|        | 240     | 5.8      | 0.25  | 130   |
|        | 300     | 4.7      | 0.25  | 120   |

| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
| CHPC80 | 90      | 15.6     | 0.75  | 310   |
| CH 07  | 120     | 11.7     | 0.75  | 300   |
|        | 150     | 9.3      | 0.55  | 260   |

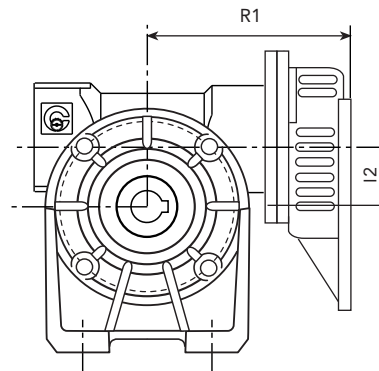
| TYPE   | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|--------|---------|----------|-------|-------|
| CHPC80 | 120     | 11.7     | 0.75  | 390   |
|        | 138     | 10.1     | 0.75  | 360   |
| CH 08  | 168     | 8.3      | 0.55  | 350   |
|        | 192     | 7.3      | 0.55  | 330   |
|        | 240     | 5.8      | 0.55  | 305   |

## DIMENSIONS

### CHPC../CH 06-07-08



### CHPC../CH 04-05



For other dimensions see pages 65 - 66 - 70 - 71 and 72 of the catalogue.

| CHPC - CH | R1  | I2 |
|-----------|-----|----|
| 63 + 04   | 110 | 40 |
| 63 + 05   | 115 | 40 |
| 71 + 05   | 123 | 50 |
| 71 + 06   | 154 | 50 |
| 71 + 07   | 176 | 50 |
| 80 + 07   | 197 | 63 |
| 71 + 08   | 189 | 50 |
| 80 + 08   | 210 | 63 |

The choice of power installed is tied to the unification of the motors, therefore it is sometimes in exuberance compared to the gear; always verify the maximum torque indicated when making the selection and if in doubt please contact our technical office.

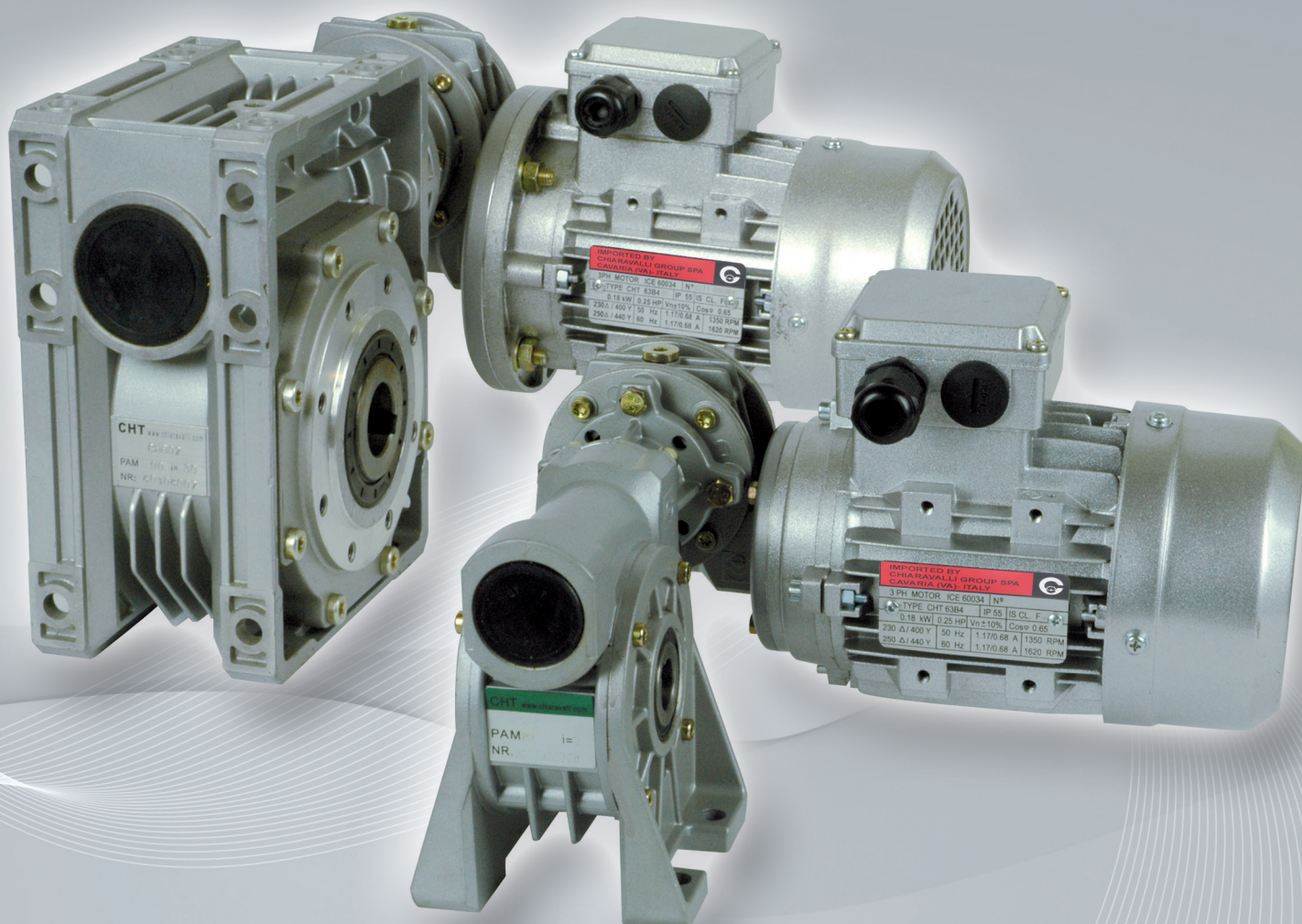
2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

Quantity, availability and prices with Chiaravalli B2B





## CH - CH DOUBLE WORM GEAR







# CH - CH DOUBLE WORM GEARS

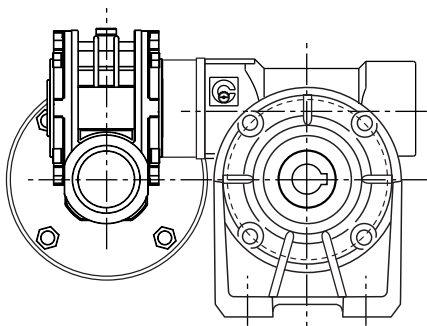
## DESIGNATION CH(R)/CH - CH(R)/CH..P

| TYPE      | SIZE  | VERSION | FLANGE POS. (1) | i                    | EXEC. | M.M.F. |
|-----------|-------|---------|-----------------|----------------------|-------|--------|
| CH/CH     | 03/04 | F       | 1               | RATIO SEE<br>PAGE 80 | OAD   | 63B5   |
| CH/CH..P  | 03/05 | FA      | 2               |                      | OAS   | 63B14  |
| CHR/CH    |       | (2)     |                 |                      | OBD   | 56B5   |
| CHR/CH..P |       |         |                 |                      | OBS   | 56B14  |
|           |       |         |                 |                      | VAD   |        |
|           |       |         |                 |                      | VAS   |        |
|           |       |         |                 |                      | VBD   |        |
|           |       |         |                 |                      | VBS   |        |

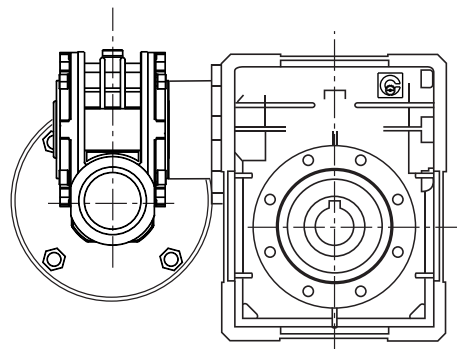
| TYPE      | SIZE  | VERSION | FLANGE POS. (1) | i                    | EXEC. | M.M.F. |
|-----------|-------|---------|-----------------|----------------------|-------|--------|
| CH/CH     | 03/06 | FC      | 1               | RATIO SEE<br>PAGE 80 | OAD   | 71B5   |
| CH/CH..P  | 04/07 | F       | 2               |                      | OAS   | 71B14  |
| CHR/CH    | 04/08 | (3)     |                 |                      | OBD   | 63B5   |
| CHR/CH..P |       |         |                 |                      | OBS   | 63B14  |
|           |       |         |                 |                      | VAD   | 56B5   |
|           |       |         |                 |                      | VAS   | 56B14  |
|           |       |         |                 |                      | VBD   |        |
|           |       |         |                 |                      | VBS   |        |

## DIMENSIONS OF CH/CH COMBINED GEARS

CH 03/CH 04-05



CH 03/CH 06



CH 04/CH 07-08

For the executions see the table with drawings on page 73, if not specified OBS would be supplied.



## ORDER EXAMPLE

|       |        |    |   |     |     |       |
|-------|--------|----|---|-----|-----|-------|
| CH/CH | 03/05P | FA | 2 | 315 | OBS | 56B14 |
|-------|--------|----|---|-----|-----|-------|

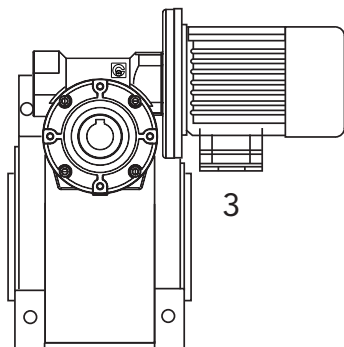
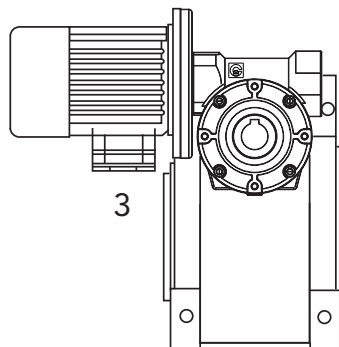
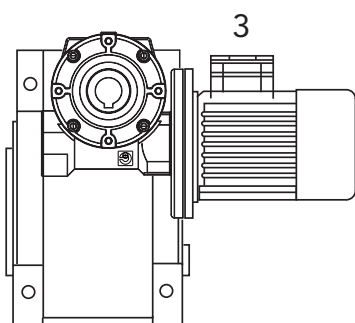
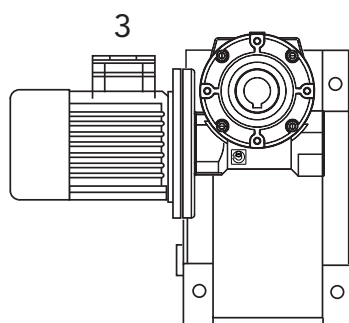
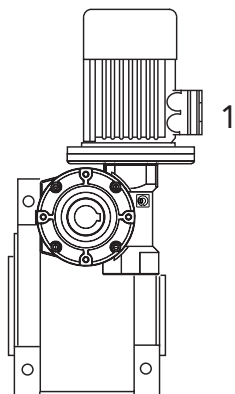
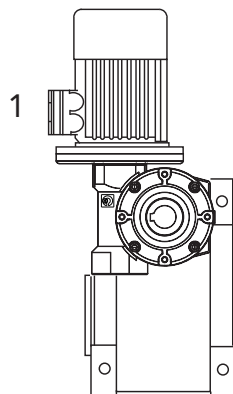
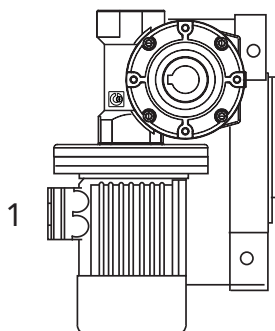
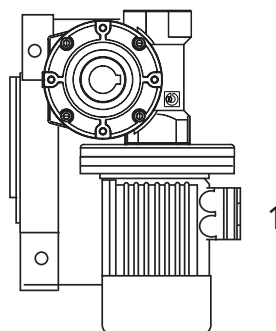
If the motor is also required, please specify:

|           |              |
|-----------|--------------|
| Size      | es. 56 C4    |
| Power     | es. Kw 0.09  |
| Poles     | es. 4        |
| Voltage   | es. V230/400 |
| Frequency | es. 50 Hz    |
| Flange    | es. B14      |

1) see page 63 and 69

2) lack of instructions indicates that the gear is not equipped with an output flange. In this case the group can be fixed on feet CH/CH or be swinging CH/CH..P

3) lack of instructions indicates that the gear is not equipped with an output flange.

**OAD****OAS****OBD****OBS****VAD****VAS****VBS****VBD**

The execution determines the mounting position of the first gear in relation to the second gear. If not otherwise specified at the time of order, the group will be supplied in the OBS execution. The placing position refers to the second gear.



# CH - CH PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

| TYPE        | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|-------------|---------|----------|-------|-------|
| CH<br>03/04 | 245     | 5.7      | 0.09  | 58    |
|             | 350     | 4.0      | 0.09* | 58    |
|             | 420     | 3.3      | 0.09* | 58    |
|             | 560     | 2.5      | 0.09* | 58    |
|             | 700     | 2.0      | 0.09* | 58    |
|             | 840     | 1.7      | 0.09* | 58    |
|             | 1120    | 1.3      | 0.09* | 58    |
|             | 1680    | 0.8      | 0.09* | 58    |
|             | 2100    | 0.7      | 0.09* | 58    |
|             | 2760    | 0.5      | 0.09* | 50    |

| TYPE        | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|-------------|---------|----------|-------|-------|
| CH<br>03/05 | 240     | 5.8      | 0.12  | 77    |
|             | 315     | 4.4      | 0.12  | 90    |
|             | 420     | 3.3      | 0.09  | 90    |
|             | 540     | 2.6      | 0.09  | 90    |
|             | 720     | 1.9      | 0.09* | 90    |
|             | 900     | 1.6      | 0.09* | 90    |
|             | 1120    | 1.3      | 0.09* | 90    |
|             | 1440    | 0.9      | 0.09* | 90    |
|             | 2160    | 0.6      | 0.09* | 90    |
|             | 2700    | 0.5      | 0.09* | 90    |

| TYPE        | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|-------------|---------|----------|-------|-------|
| CH<br>03/06 | 240     | 5.8      | 0.22  | 160   |
|             | 315     | 4.4      | 0.22  | 180   |
|             | 450     | 3.1      | 0.18  | 200   |
|             | 570     | 2.5      | 0.12  | 180   |
|             | 720     | 1.9      | 0.12  | 200   |
|             | 900     | 1.6      | 0.12  | 200   |
|             | 1200    | 1.2      | 0.12  | 200   |
|             | 1520    | 0.9      | 0.09* | 200   |
|             | 2280    | 0.6      | 0.09* | 200   |
|             | 2700    | 0.5      | 0.09* | 200   |

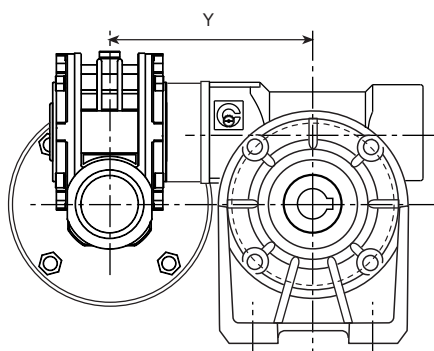
| TYPE        | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|-------------|---------|----------|-------|-------|
| CH<br>04/07 | 250     | 5.6      | 0.37  | 360   |
|             | 300     | 4.7      | 0.37  | 360   |
|             | 400     | 3.5      | 0.25  | 315   |
|             | 525     | 2.7      | 0.25  | 360   |
|             | 700     | 2.0      | 0.18  | 360   |
|             | 920     | 1.5      | 0.18  | 360   |
|             | 1200    | 1.2      | 0.12  | 360   |
|             | 1500    | 0.93     | 0.12* | 360   |
|             | 2100    | 0.67     | 0.12* | 360   |
|             | 2800    | 0.5      | 0.12* | 360   |

| TYPE        | i=ratio | n2 r/min | Kw=P1 | Nm=T2 |
|-------------|---------|----------|-------|-------|
| CH<br>04/08 | 230     | 5.6      | 0.55  | 460   |
|             | 300     | 4.7      | 0.55  | 490   |
|             | 400     | 3.5      | 0.55  | 490   |
|             | 525     | 2.7      | 0.37  | 490   |
|             | 700     | 2.0      | 0.37  | 490   |
|             | 920     | 1.5      | 0.25  | 490   |
|             | 1380    | 1.2      | 0.18  | 490   |
|             | 1840    | 0.93     | 0.18  | 490   |
|             | 2116    | 0.67     | 0.12  | 490   |
|             | 2760    | 0.5      | 0.12  | 490   |

\* The powers marked with an asterisk are higher than those that the gear allows, therefore the applicative choice must be made in accordance with the torque and not with the power.

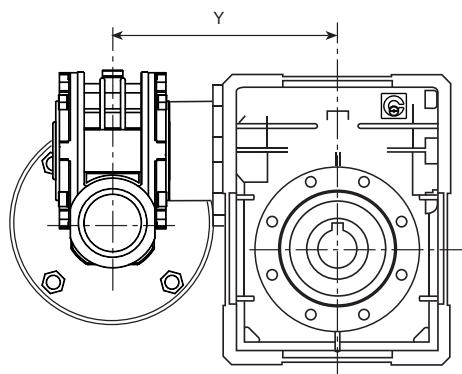
## DIMENSIONS OF CH/CH COMBINED GEARS

CH 03/CH 04-05



CH 03/CH 06

CH 04/CH 07-08



|          | Y     |
|----------|-------|
| CH 03/04 | 120.5 |
| CH 03/05 | 125.5 |
| CH 03/06 | 165   |
| CH 04/07 | 192   |
| CH 04/08 | 204.5 |

For other dimensions see pages 65 - 66 - 70 - 71 and 72 of the catalogue.

The gear ratios are those most frequently requested. It is possible to obtain multiple combinations using the various ratios of the two single gears.

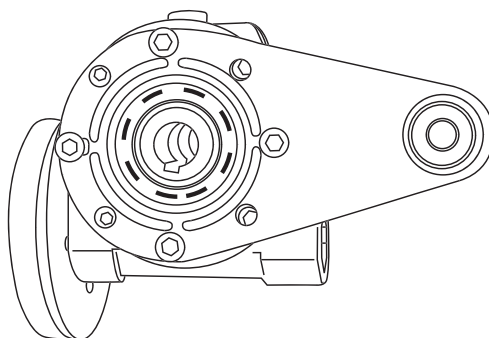
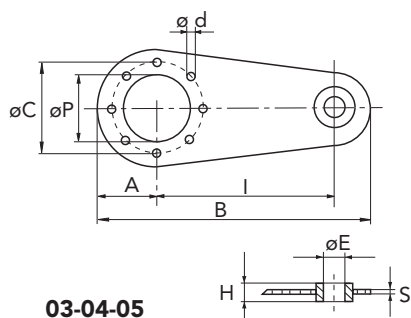
2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

Quantity, availability and prices with Chiaravalli B2B



## TORQUE ARM

| TYPE  | I   | A    | B     | Ø P | Ø C | Ø d | H  | øE | S |
|-------|-----|------|-------|-----|-----|-----|----|----|---|
| CH 03 | 100 | 40   | 157.5 | 50  | 65  | 7   | 14 | 8  | 4 |
| CH 04 | 100 | 40   | 157.5 | 50  | 65  | 7   | 14 | 8  | 4 |
| CH 05 | 100 | 55   | 172.5 | 68  | 94  | 7   | 14 | 8  | 4 |
| CH 06 | 150 | 52.5 | 232.5 | 75  | 90  | 9   | 20 | 10 | 6 |
| CH 07 | 200 | 62.5 | 300   | 90  | 110 | 9   | 25 | 20 | 6 |
| CH 08 | 200 | 75   | 312.5 | 110 | 130 | 11  | 25 | 20 | 6 |



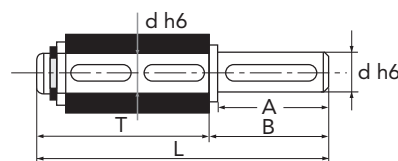
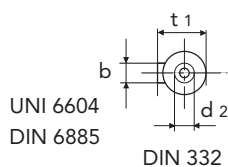
\* Without anti vibrationbush

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



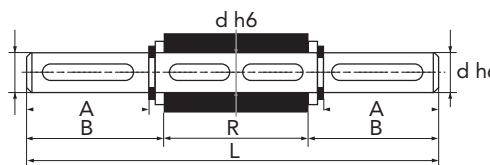
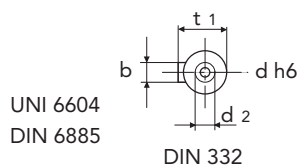
## SINGLE OUTPUT SHAFT KIT

| TYPE  | A  | Ø d | B  | b  | t1   | T   | L   | d2     | ød1 |
|-------|----|-----|----|----|------|-----|-----|--------|-----|
| CH 03 | 30 | 14  | 35 | 5  | 16   | 61  | 96  | M5x13  | 14  |
| CH 04 | 40 | 18  | 45 | 6  | 20.5 | 70  | 115 | M6x16  | 18  |
| CH 05 | 60 | 25  | 65 | 8  | 28   | 89  | 154 | M8x20  | 25  |
| CH 06 | 60 | 25  | 65 | 8  | 28   | 127 | 192 | M8x20  | 25  |
| CH 07 | 60 | 30  | 65 | 8  | 33   | 134 | 199 | M10x22 | 30  |
| CH 08 | 60 | 35  | 65 | 10 | 38   | 149 | 214 | M10x25 | 35  |



## DOUBLE OUTPUT SHAFT KIT

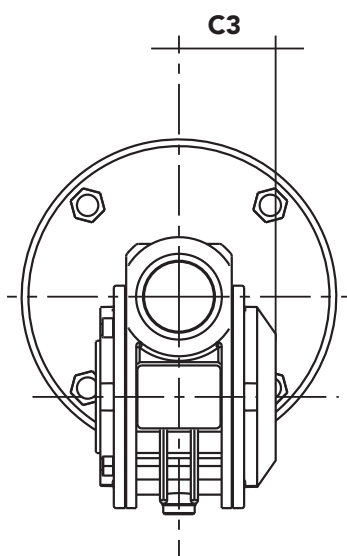
| TYPE  | A  | Ø d | B    | R   | b  | t1   | L     | d2     | ød1 |
|-------|----|-----|------|-----|----|------|-------|--------|-----|
| CH 03 | 30 | 14  | 32.5 | 55  | 5  | 16   | 120   | M5x13  | 14  |
| CH 04 | 40 | 18  | 42.7 | 64  | 6  | 20.5 | 149.4 | M6x16  | 18  |
| CH 05 | 60 | 25  | 63.2 | 82  | 8  | 28   | 208.4 | M8x20  | 25  |
| CH 06 | 60 | 25  | 63.2 | 120 | 8  | 28   | 246.4 | M8x20  | 25  |
| CH 07 | 60 | 30  | 64   | 127 | 8  | 33   | 255   | M10x22 | 30  |
| CH 08 | 60 | 35  | 64   | 140 | 10 | 38   | 268   | M10x25 | 35  |



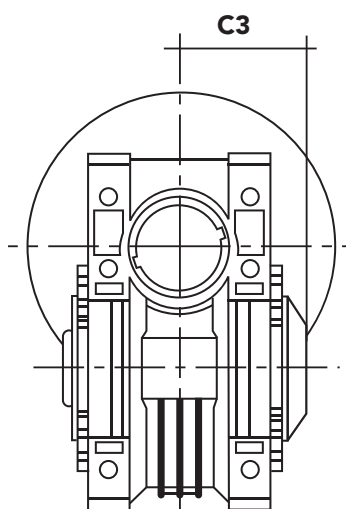




## CH 03-04-05



## CH 06-07-08



| TYPE | C3   |
|------|------|
| 03   | 37   |
| 04   | 42   |
| 05   | 55   |
| 06   | 70   |
| 07   | 85,5 |
| 08   | 93,5 |



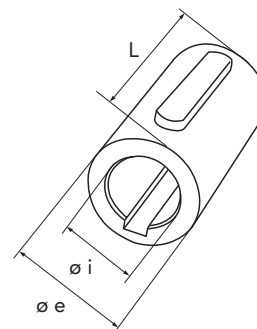
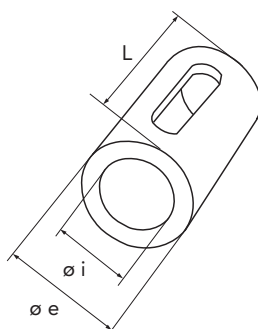
## REDUCTION BUSHINGS KIT

| SINGLE    |                   |     |                                  |                   |
|-----------|-------------------|-----|----------------------------------|-------------------|
| TYPE      | $\phi i / \phi e$ | L   | tongues                          | Weight for kit kg |
| CHT BRM-S | 9/11              | 20  | 4/3 x 4 x 11 RB*                 | 0.006             |
| CHT BRM-S | 11/14             | 30  | 5/4 x 6 x 10 RB*                 | 0.015             |
| CHT BRM-S | 14/19             | 40  | 6 x 5 x 30 *                     | 0.045             |
| CHT BRM-S | 19/24             | 50  | 6 x 5.5 x 20 *<br>8 x 5.5 x 40 * | 0.07              |
| CHT BRM-S | 24/28             | 60  | 8 x 9 x 40 *                     | 0.08              |
| CHT BRM-S | 28/38             | 80  | 10 x 7 x 60 *                    | 0.33              |
| CHT BRM-S | 38/42             | 110 | 12/10 x 10 x 48 RB*              | 0.22              |

| DOUBLE    |                   |    |               |                   |
|-----------|-------------------|----|---------------|-------------------|
| TYPE      | $\phi i / \phi e$ | L  | tongues       | Weight for kit kg |
| CHT BRM-D | 11/19             | 40 | 6 x 6 x 30 *  | 0.06              |
| CHT BRM-D | 14/24             | 50 | 8 x 7 x 40 A  | 0.12              |
| CHT BRM-D | 19/28             | 60 | 8 x 7 x 50 A  | 0.16              |
| CHT BRM-D | 24/38             | 80 | 10 x 8 x 60 A | 0.44              |

\* to drawing

Tongue acc. to UNI 6604 - DIN 6885  
Quenched

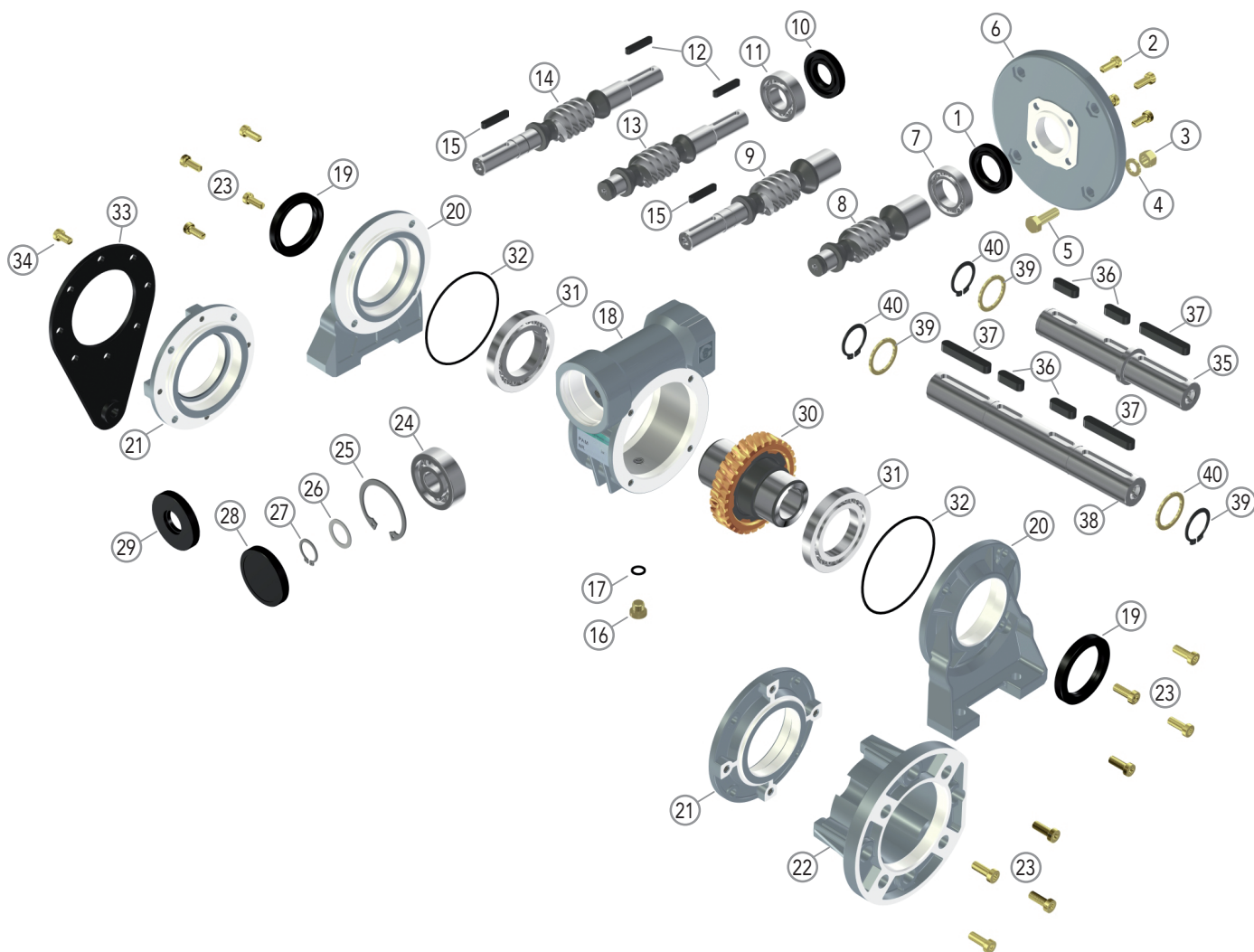


2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

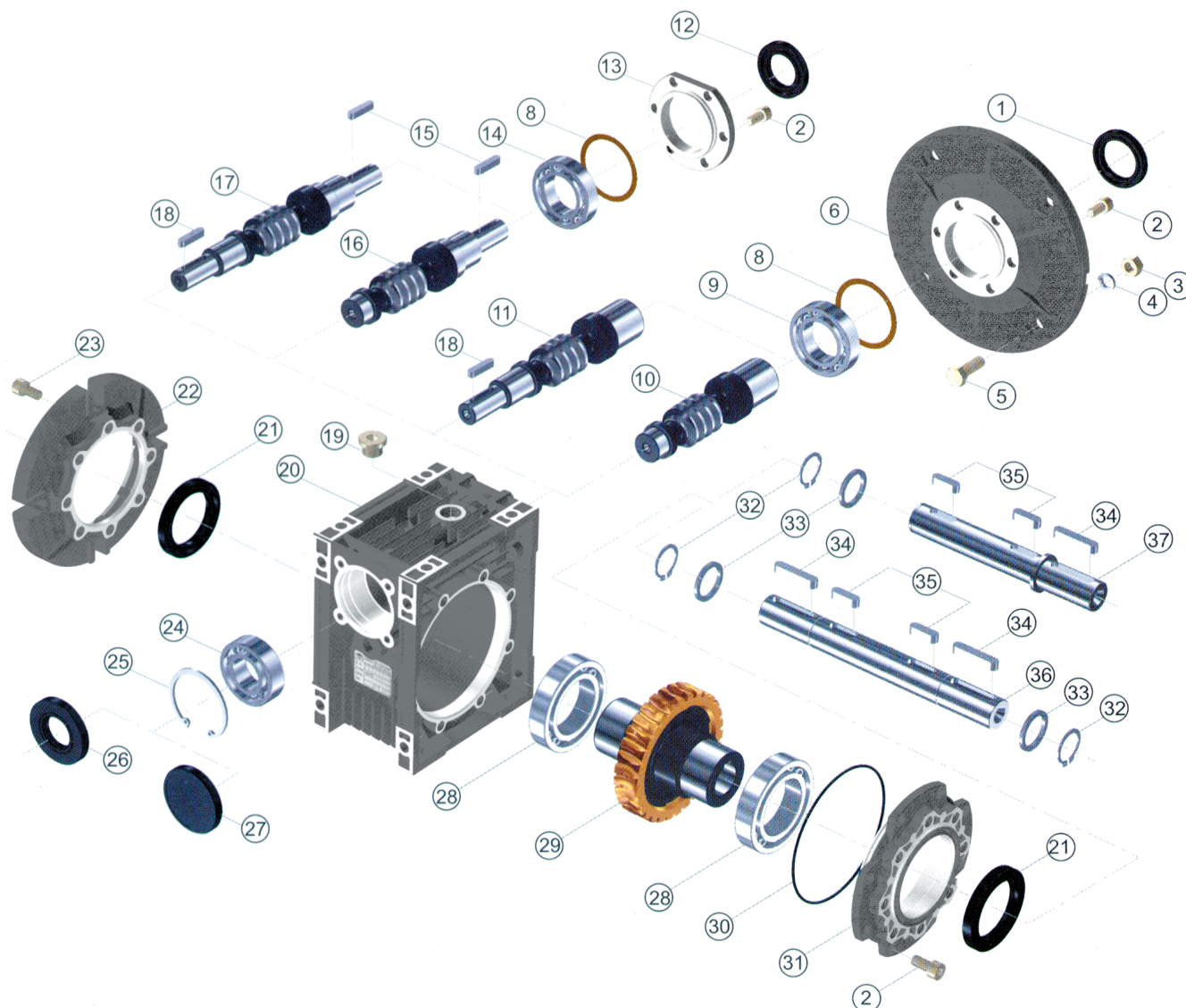
Quantity, availability and prices with Chiaravalli B2B



## CH 03/04/05 EXPLODED DRAWING AND SPARE



|    |                                  |    |                     |
|----|----------------------------------|----|---------------------|
| 1  | OIL SEAL                         | 21 | SIDE COVER          |
| 2  | SCREW                            | 22 | OUTPUT FLANGE       |
| 3  | NUT                              | 23 | SCREW               |
| 4  | WASHER                           | 24 | BEARING             |
| 5  | SCREW                            | 25 | SEEGER              |
| 6  | MOTOR CONNECTION FLANGE          | 26 | SPACER              |
| 7  | BEARING                          | 27 | SEEGER              |
| 8  | HOLE INPUT WORM                  | 28 | CAP                 |
| 9  | HOLE INPUT AND SHAFT OUTPUT WORM | 29 | OIL SEAL            |
| 10 | OIL SEAL                         | 30 | WORM WHEEL          |
| 11 | BEARING                          | 31 | BEARING             |
| 12 | KEY                              | 32 | O-RING              |
| 13 | SHAFT INPUT WORM                 | 33 | BRACCIO DI REAZIONE |
| 14 | DOUBLE EXTENDED INPUT SHAFT WORM | 34 | SCREW               |
| 15 | KEY                              | 35 | SINGLE OUTPUT SHAFT |
| 16 | OIL PLUG                         | 36 | KEY                 |
| 17 | GASKET                           | 37 | KEY                 |
| 18 | CASING                           | 38 | DOUBLE OUTPUT SHAFT |
| 19 | OIL SEAL                         | 39 | SPACER              |
| 20 | FOOT COVER                       | 40 | SEEGER              |



|    |                                  |    |                               |
|----|----------------------------------|----|-------------------------------|
| 1  | OIL SEAL                         | 20 | CASING                        |
| 2  | TORX SCREW                       | 21 | OIL SEAL                      |
| 3  | NUT                              | 22 | OUTPUT FLANGE                 |
| 4  | WASHER                           | 23 | EMBEDDED HEXAGONAL-HEAD SCREW |
| 5  | HEXAGONAL-HEAD SCREW             | 24 | BEARING                       |
| 6  | MOTOR CONNECTION FLANGE          | 25 | SEEGER                        |
| 8  | ADJUST SPACER                    | 26 | OIL SEAL                      |
| 9  | BEARING                          | 27 | CAP                           |
| 10 | HOLE INPUT WORM                  | 28 | BEARING                       |
| 11 | HOLE INPUT AND SHAFT OUTPUT WORM | 29 | WORM WHEEL                    |
| 12 | OIL SEAL                         | 30 | O-RING                        |
| 13 | INPUT COVER                      | 31 | OUTPUT COVER                  |
| 14 | BEARING                          | 32 | SEEGER                        |
| 15 | KEY                              | 33 | SPACER                        |
| 16 | SHAFT INPUT WORM                 | 34 | KEY                           |
| 17 | DOUBLE EXTENDED INPUT SHAFT WORM | 35 | KEY                           |
| 18 | KEY                              | 36 | DOUBLE OUTPUT SHAFT           |
| 19 | OIL PLUG                         | 37 | SINGLE OUTPUT SHAFT           |



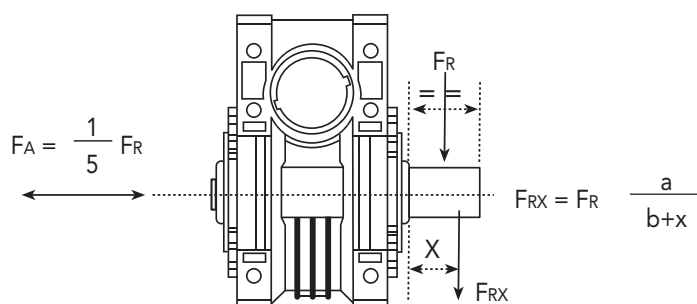
## CH RADIAL LOADS ON THE OUTPUT SHAFT

The loads indicated are valid for all application directions.

The maximum allowable axial loads are equal to 1/5 of the radial load value shown in the table when applied with the same radial load; if this is not the case, please contact our technical office. If double output shafts are used, the sum of radial loads applicable to the centre lines of the two ends of the shaft must not exceed the value shown in the table below.

The radial loads related to the output speed (n2)=10 are the maximum loads supported by the gear.

- a GEAR CONSTANT
- b GEAR CONSTANT
- x LOAD DISTANCE FROM SHAFT SHOULDER IN mm.
- $F_{RX}$  RADIAL LOAD IN POSITION X (IN N)
- $F_R$  RADIAL LOAD (N)
- $F_A$  AXIAL LOAD (N)



### SIZES

| Output speed | 03   | 04   | 05   | 06   | 07   | 08   |
|--------------|------|------|------|------|------|------|
| 400          | 490  | 720  | 1000 | 1450 | 1800 | 2020 |
| 250          | 580  | 860  | 1190 | 1720 | 2140 | 2420 |
| 150          | 690  | 1010 | 1400 | 2020 | 2510 | 2840 |
| 100          | 790  | 1160 | 1600 | 2330 | 2880 | 3260 |
| 60           | 940  | 1380 | 1910 | 2770 | 3440 | 3880 |
| 40           | 1070 | 1570 | 2160 | 3130 | 3890 | 4380 |
| 25           | 1260 | 1850 | 2550 | 3700 | 4590 | 5180 |
| 10           | 1700 | 2500 | 3450 | 5000 | 6200 | 7000 |

### CONSTANTS' VALUES

|   |    |    |    |     |     |     |
|---|----|----|----|-----|-----|-----|
| a | 60 | 71 | 99 | 130 | 136 | 146 |
| b | 45 | 51 | 69 | 102 | 108 | 118 |

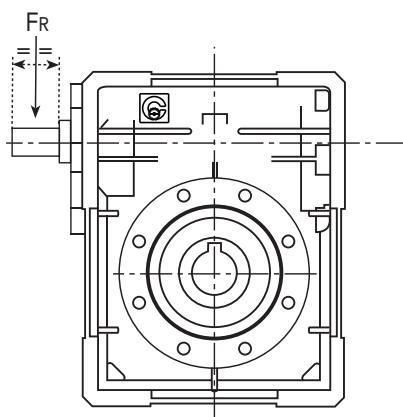
2D and 3D drawings available on the web site [www.chiaravalli.com](http://www.chiaravalli.com)

Quantity, availability and prices with Chiaravalli B2B





## RADIAL LOADS ON THE CENTRE LINE OF THE INPUT SHAFT



SIZES

|               | 03  | 04  | 05  | 06  | 07  | 08   |
|---------------|-----|-----|-----|-----|-----|------|
| <b>Fr max</b> | 100 | 150 | 220 | 700 | 975 | 1150 |

Notes: value of tables are in N



### INSTALLATION

- The data shown on the identification name plate must correspond to the gear ordered.
- All the gears are supplied complete with permanent synthetic oil in a quantity that is sufficient for any assembly position.
- The gear must be fixed on a flat surface that is sufficiently rigid in order to avoid any vibration.
- The gear 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 whilst 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.
- All of the gears are painted RAL 9022 grey.

### OPERATION AND RUNNING-IN

- To obtain the best performance the gears 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

- The worm gears from size 03 to size 08 and the pre-stage modules are lubricated with permanent synthetic oil and therefore do not require any maintenance.

### WAREHOUSE STORAGE

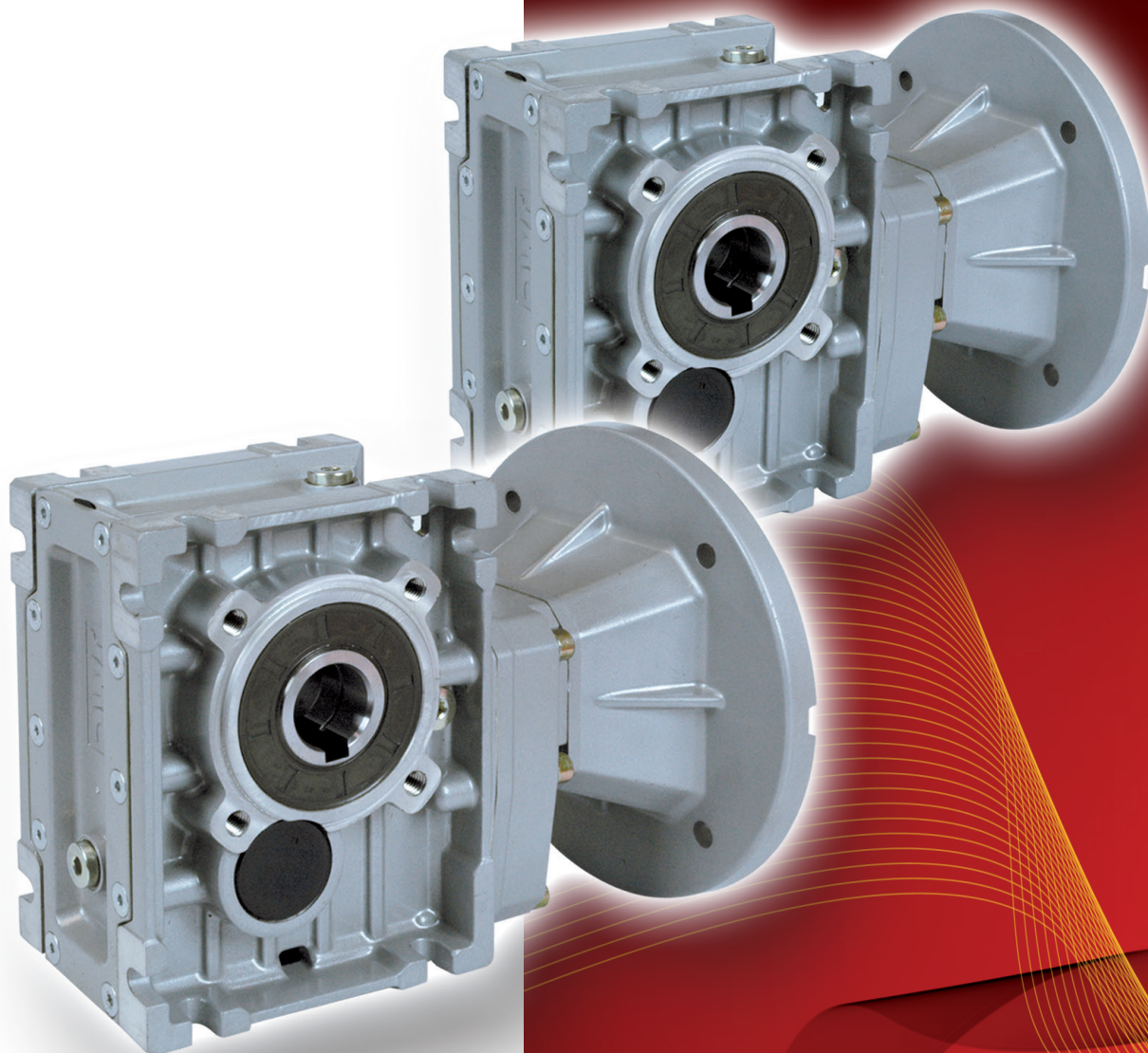
- If the warehouse storage will be for a long time, more than 3 months, the shafts and machined surfaces should be protected using antioxidants and the oil seals should be greased.

### 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.



## 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            |
|-------------|------------------|
| <b>1400</b> | <b>Kw</b>        |
| <b>2000</b> | <b>Kw * 1,35</b> |
| <b>2800</b> | <b>Kw * 1,8</b>  |

### 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

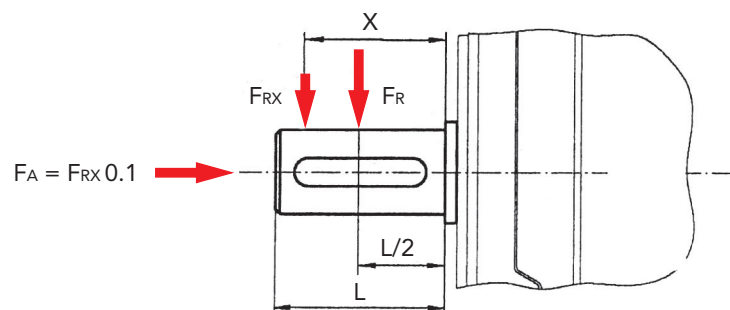
When the radial loads is not applied on the centre line of the shaft it is necessary to use the following formula.

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

$F_R$  = 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

| $P_{1n}$<br>[Kw] | $n_2$<br>[r/min] | $M_{2n}$<br>[Nm] | $i$<br>nominal | $i$<br>actual | $F_{r2}$<br>[N] | $f_s$ |              |             |             |
|------------------|------------------|------------------|----------------|---------------|-----------------|-------|--------------|-------------|-------------|
| <b>0.12</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   |       |          |      |

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] | $f_s$ |       |          |      |
|------------------|------------------|------------------|----------------|---------------|-----------------|-------|-------|----------|------|
| 0.25             | 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   |       |          |      |

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>0.37</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   |       |          |      |

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] | $f_s$ |       |          |      |
|------------------|------------------|------------------|----------------|---------------|-----------------|-------|-------|----------|------|
| 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



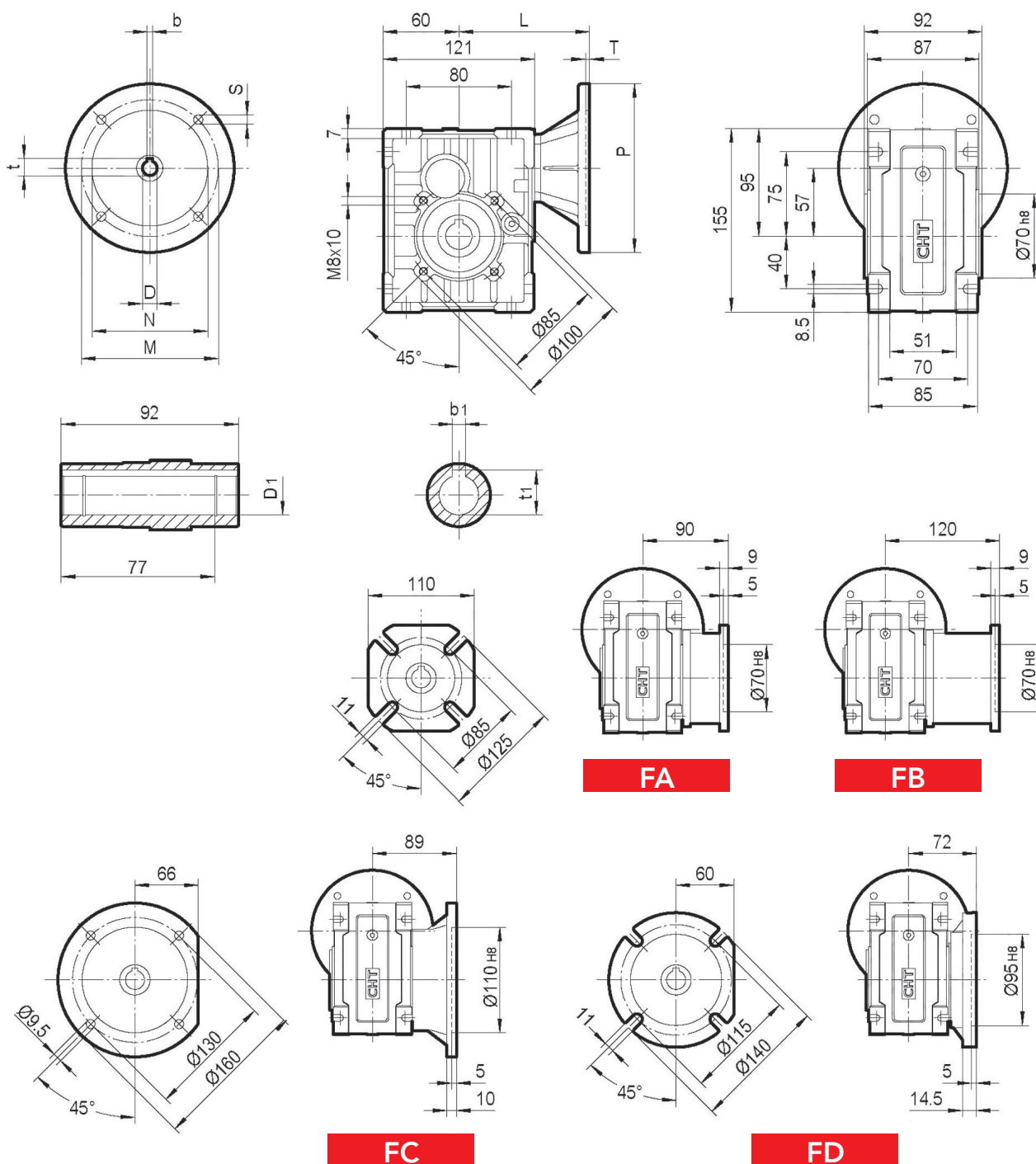
## GEAR UNIT SELECTION TABLES

| $P_{1n}$<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



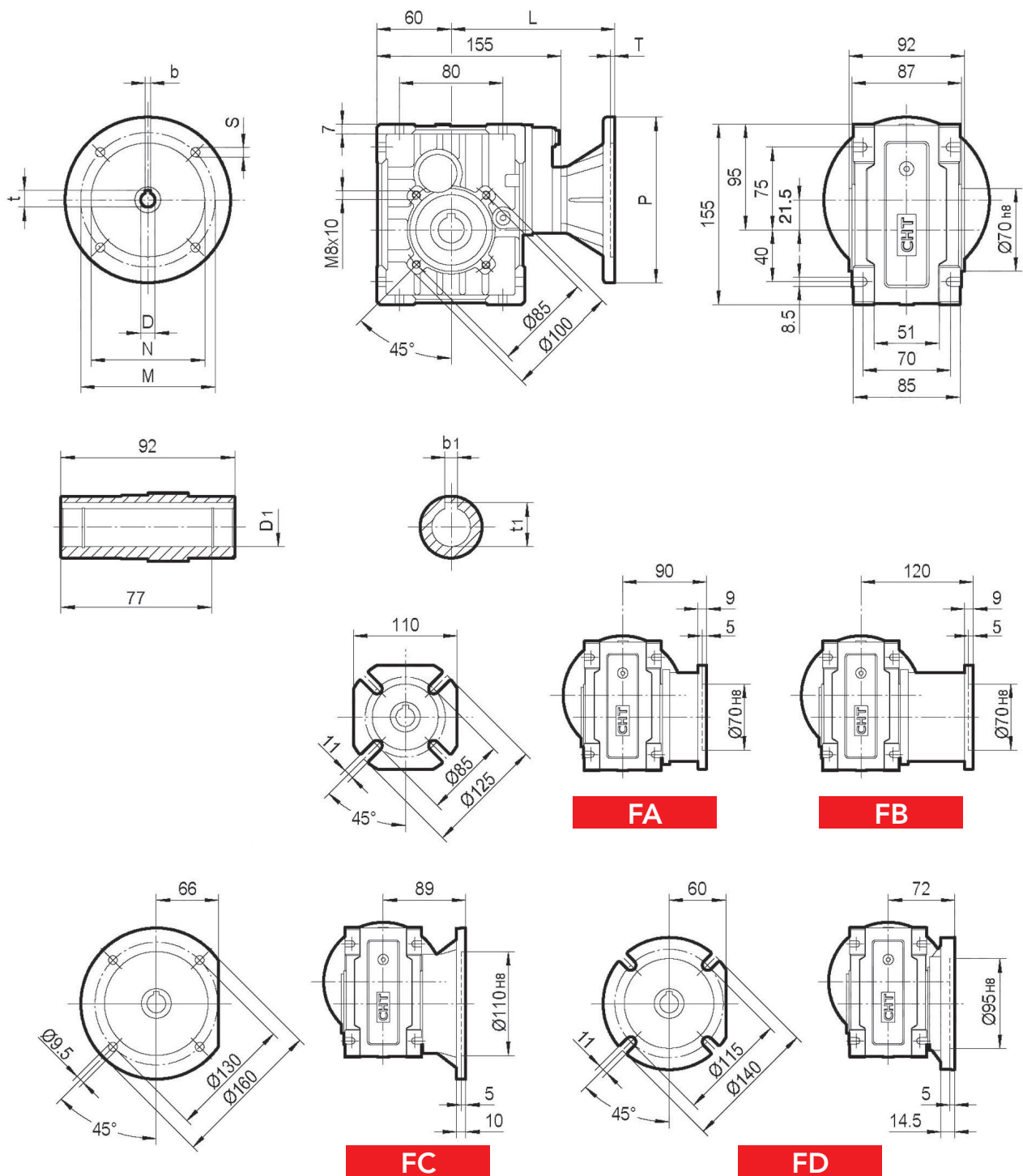
| IEC   | DE8 | b | t    | P   | M   | N   | S  | T | L   | D1 H8             | b1 | t1    |
|-------|-----|---|------|-----|-----|-----|----|---|-----|-------------------|----|-------|
| 63B5  | 11  | 4 | 12.8 | 140 | 115 | 95  | 9  | 4 | 106 | 20*               | 6* | 22.8* |
| 71B5  | 14  | 5 | 16.3 | 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



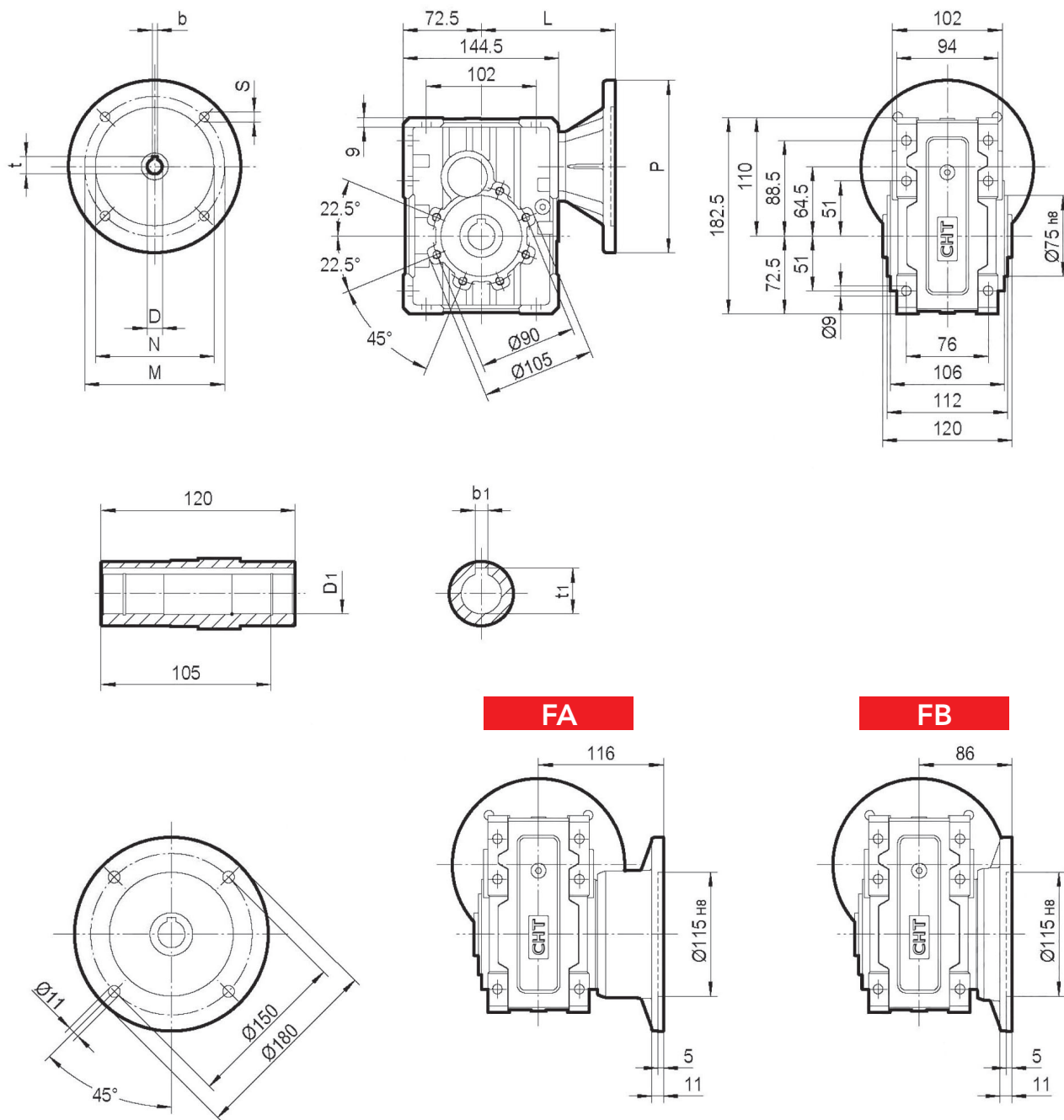
| IEC   | DE8 | b | t    | P   | M   | N   | S  | T | L   | D1 H8             | b1 | t1    |
|-------|-----|---|------|-----|-----|-----|----|---|-----|-------------------|----|-------|
| 63B5  | 11  | 4 | 12.8 | 140 | 115 | 95  | 9  | 4 | 140 | 20*               | 6* | 22.8* |
| 71B5  | 14  | 5 | 16.3 | 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 |       |    |      |

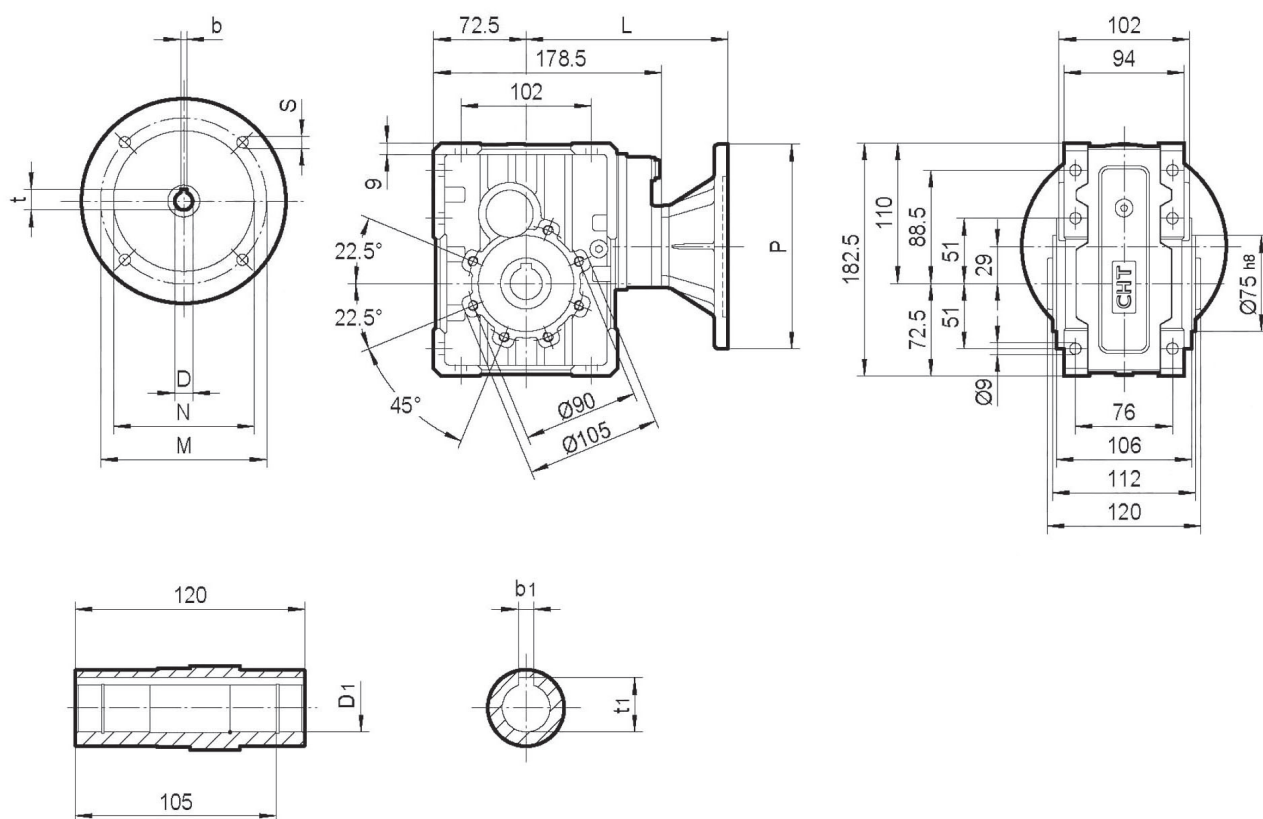
Weight 6.5 Kg excluding motor





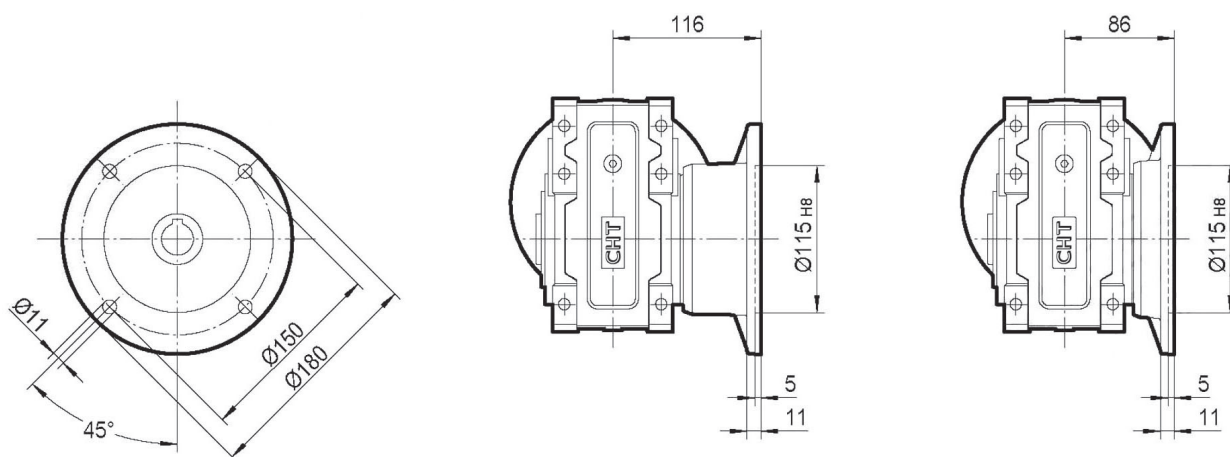
# DIMENSION SHEET

## 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



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

- Top View (Top Left):** Shows the circular top of the pump with dimensions  $b$ ,  $s$ ,  $D$ ,  $N$ , and  $M$ .
- Front View (Top Middle):** Shows the front of the pump with dimensions  $87$ ,  $174$ ,  $126$ ,  $46.5$ ,  $16.5$ ,  $9$ ,  $22.5^\circ$ ,  $45^\circ$ ,  $\varnothing 110$ ,  $\varnothing 125$ , and  $P$ .
- Side View (Top Right):** Shows the side of the pump with dimensions  $113$ ,  $104$ ,  $220.5$ ,  $133.5$ ,  $109.5$ ,  $74.5$ ,  $63$ ,  $87$ ,  $63$ ,  $\varnothing 10.5$ ,  $82$ ,  $117$ ,  $123$ ,  $127$ , and  $\varnothing 90 \text{ H8}$ .
- Bottom View (Bottom Left):** Shows the bottom of the pump with dimensions  $127$ ,  $112$ , and  $D1$ .
- End View (Bottom Middle):** Shows the end of the pump with dimensions  $b1$  and  $t1$ .
- Top View (Bottom Middle):** Shows the circular top of the pump with dimensions  $\varnothing 12$ ,  $45^\circ$ ,  $\varnothing 165$ , and  $\varnothing 200$ .
- Side View (Bottom Right):** Shows the side of the pump with dimensions  $111$ ,  $\varnothing 130 \text{ H8}$ ,  $5$ , and  $12$ .
- Top View (Bottom Left):** Shows the circular top of the pump with dimensions  $\varnothing 12$ ,  $45^\circ$ ,  $\varnothing 165$ , and  $\varnothing 200$ .
- Side View (Bottom Middle):** Shows the side of the pump with dimensions  $\varnothing 130 \text{ H8}$ ,  $5$ ,  $12$ , and  $85$ .
- Top View (Bottom Middle):** Shows the circular top of the pump with dimensions  $\varnothing 11$ ,  $45^\circ$ ,  $\varnothing 130$ , and  $\varnothing 160$ .
- Side View (Bottom Right):** Shows the side of the pump with dimensions  $\varnothing 110 \text{ H8}$ ,  $5$ ,  $12$ , and  $85$ .

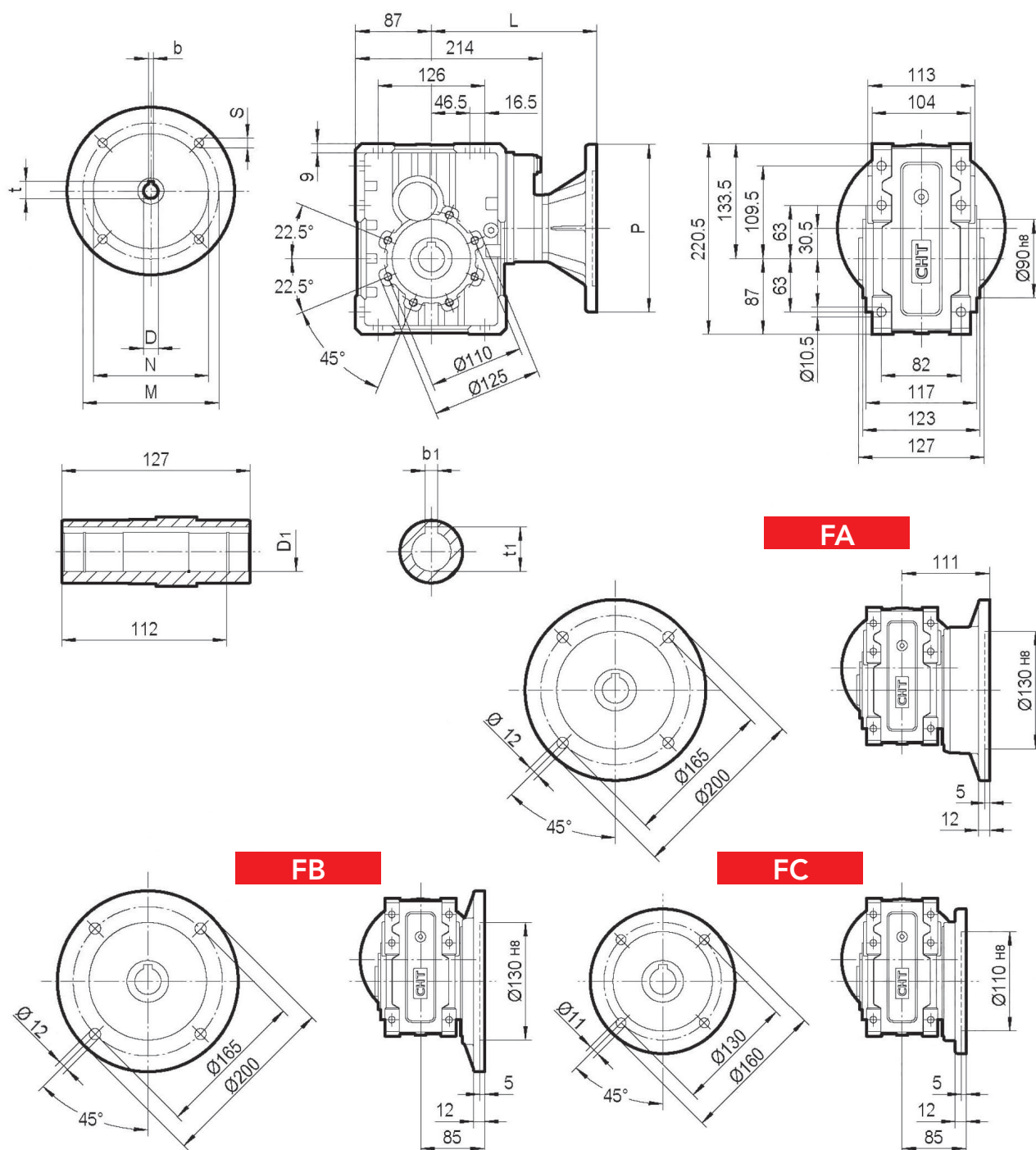
| IEC        | D <sub>E8</sub> | b | t    | P   | M   | N   | S    | T   | L   | D <sub>1 H8</sub> | b <sub>1</sub> | t <sub>1</sub> |
|------------|-----------------|---|------|-----|-----|-----|------|-----|-----|-------------------|----------------|----------------|
| 63B5       | 11              | 4 | 12.8 | 140 | 115 | 95  | 9    | 4   | 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



# DIMENSION SHEET

## CHO 73



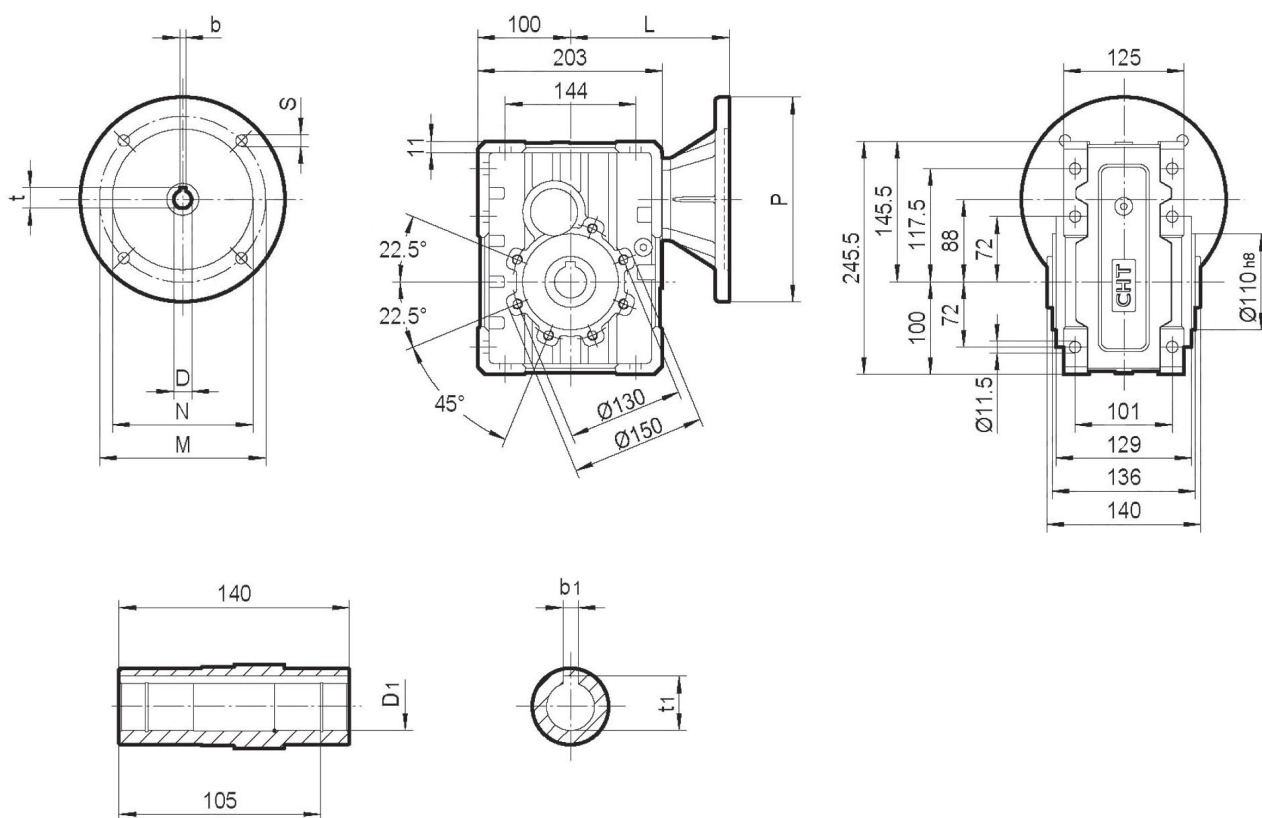
| IEC        | DE8 | b | t    | P   | M   | N   | S    | T   | L   | D1 H8             | b1 | t1    |
|------------|-----|---|------|-----|-----|-----|------|-----|-----|-------------------|----|-------|
| 63B5       | 11  | 4 | 12.8 | 140 | 115 | 95  | 9    | 4   | 179 | 28*               | 8* | 31.3* |
| 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



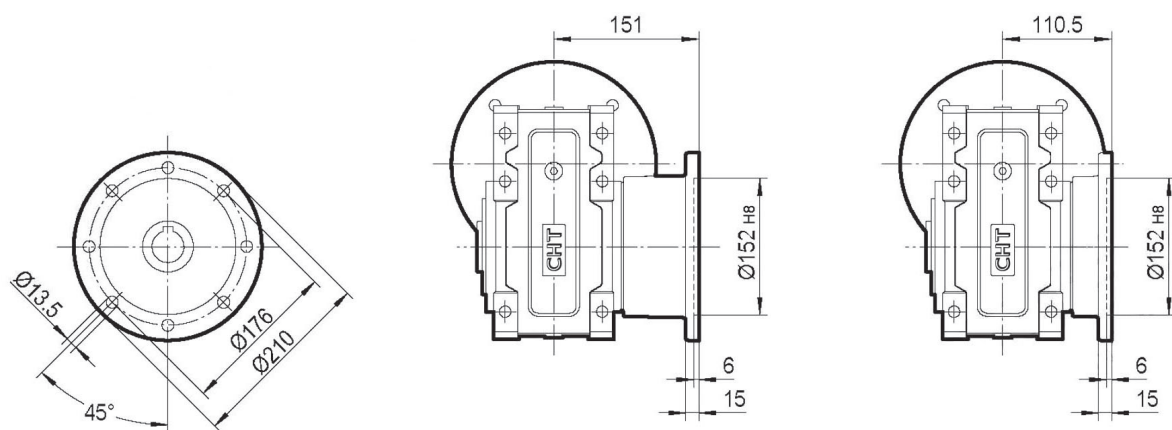
# DIMENSION SHEET

## CHO 82



FA

FB



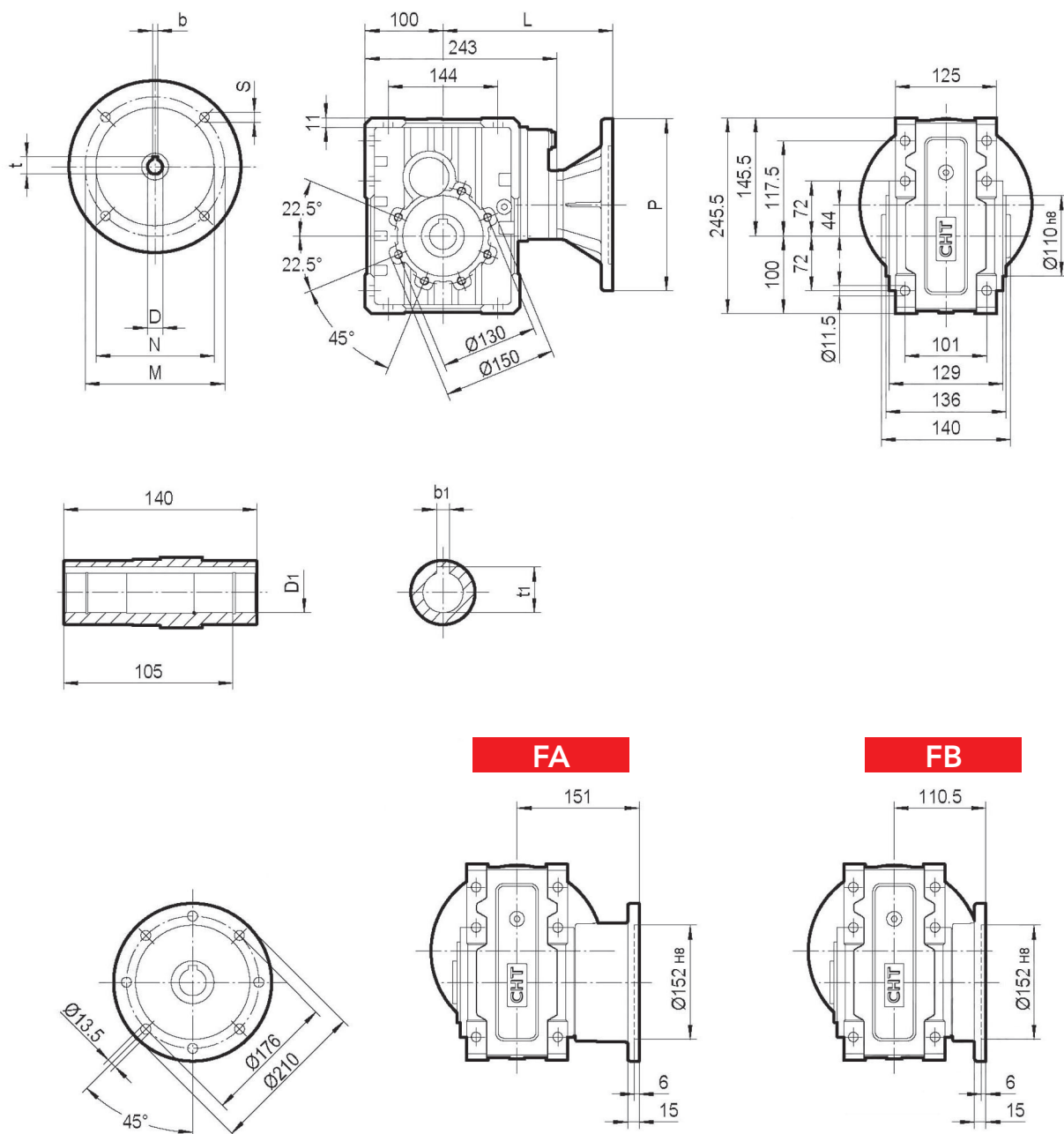
| IEC        | DE8 | b | t    | P   | M   | N   | S    | T   | L   | D1 H8 | b1 | t1   |
|------------|-----|---|------|-----|-----|-----|------|-----|-----|-------|----|------|
| 63B5       | 11  | 4 | 12.8 | 140 | 115 | 95  | 9    | 4   | 155 | 35    | 10 | 38.3 |
| 71B5       | 14  | 5 | 16.3 | 160 | 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 |       |    |      |

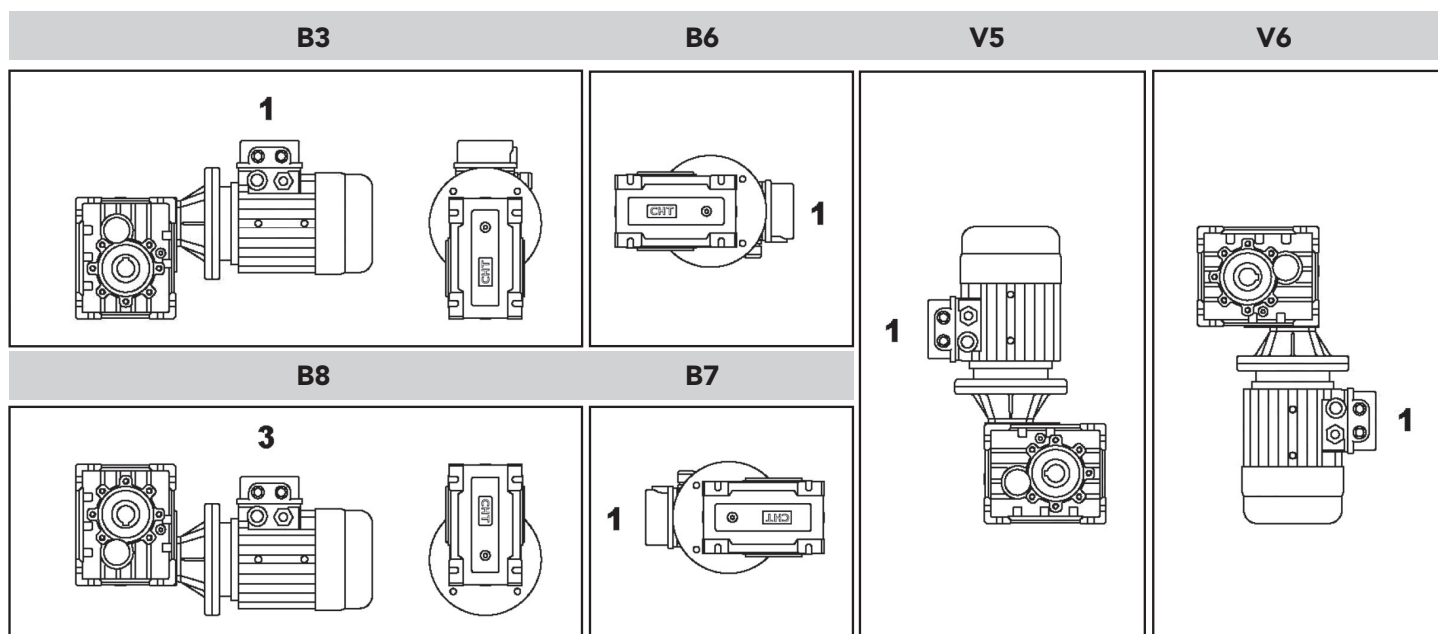
Weight 13.5 Kg excluding motor



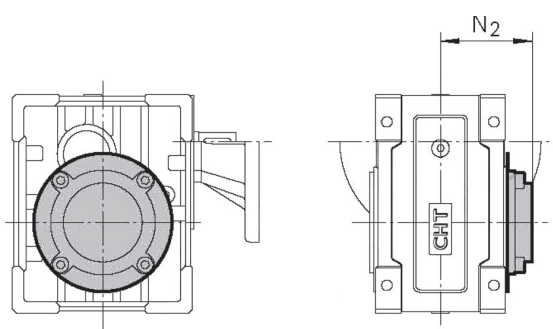


## ACCESSORIES

### MOUNTING POSITIONS



## COVER



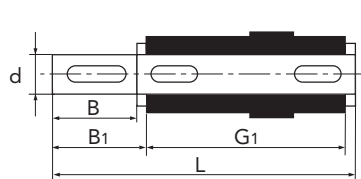
| TYPE      | $N_2$ |
|-----------|-------|
| CHO 52/53 | 59    |
| CHO 62/63 | 70    |
| CHO 72/73 | 85.5  |
| CHO 82/83 | 93.5  |



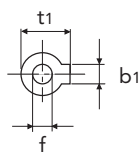
# DIMENSION SHEET

## ACCESSORIES

### OUTPUT SHAFT



**SS**



**DS**

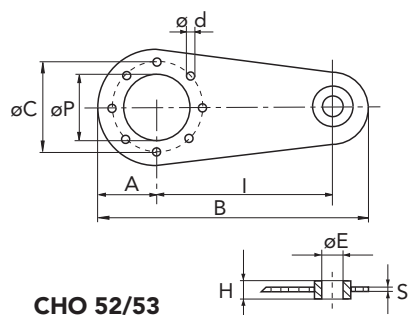
| TYPE                | $d_{h6}$ | B  | B <sub>1</sub> | G <sub>1</sub> | L   | L <sub>1</sub> | f   | b <sub>1</sub> | t <sub>1</sub> |
|---------------------|----------|----|----------------|----------------|-----|----------------|-----|----------------|----------------|
| <b>CHO 52/53</b>    | 25       | 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             |



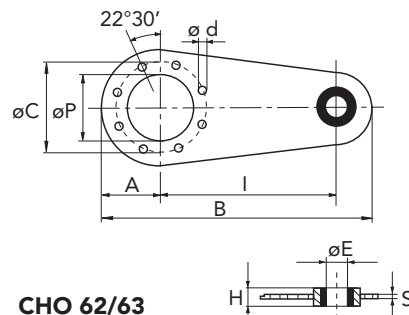
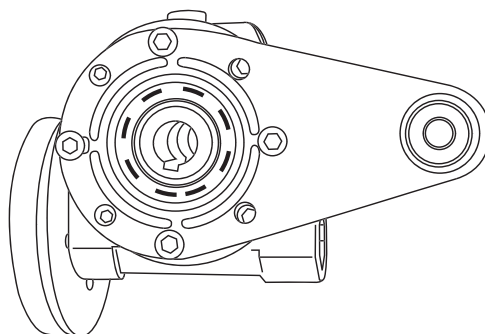
## TORQUE ARM

117

| 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**

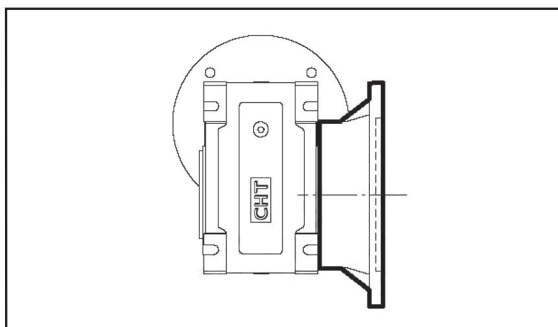
The anchoring point of the torque arm is equipped with a vibration resistant bushing.



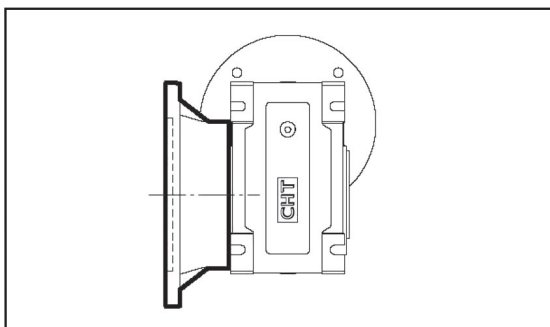
# FLANGE, SHAFTS AND TERMINAL BOXES MOUNTING POSITION

## POSITION DIAGRAM FOR OUTPUT

FA1, FB1, FC1, FD1, FE1



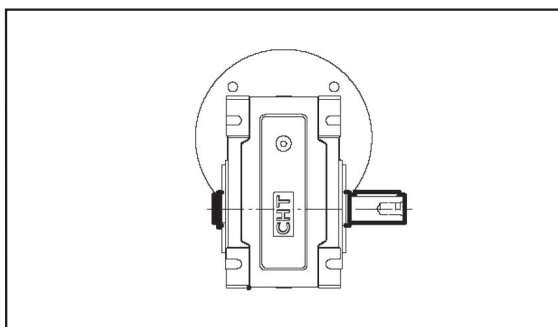
FA2, FB2, FC2, FD2, FE2



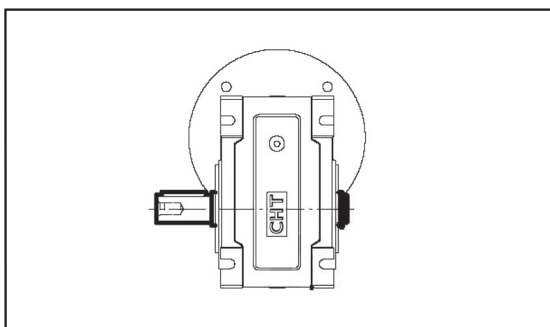
Unless specified otherwise, the reduction unit is supplied with the flange in pos. F.1 referred to position B3.

## POSITION DIAGRAM FOR SINGLE OUTPUT

SS1

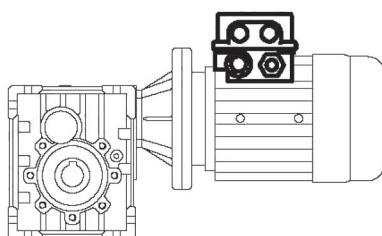
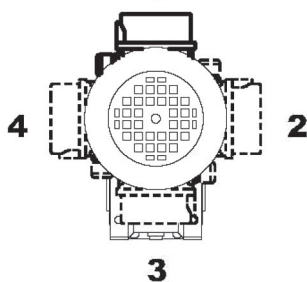


SS2

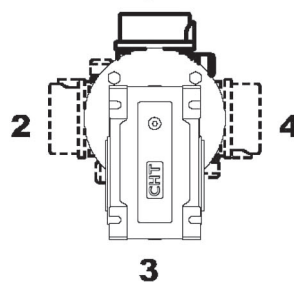


## POSITION OF TERMINAL BOX

1 Standard



1 Standard



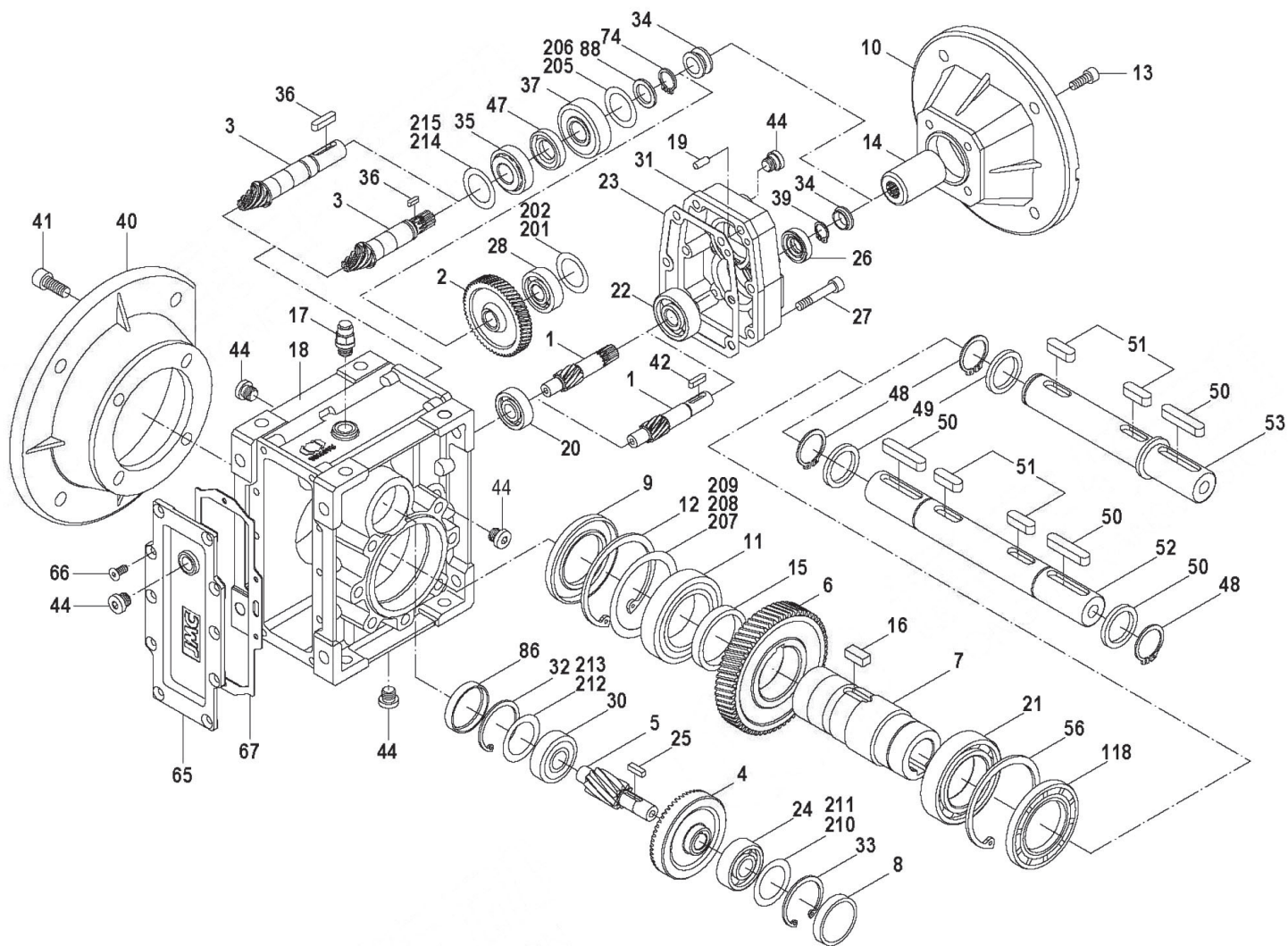
In the case of specific requirements, when ordering, specify the position of the terminal box as shown in the diagram.

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.

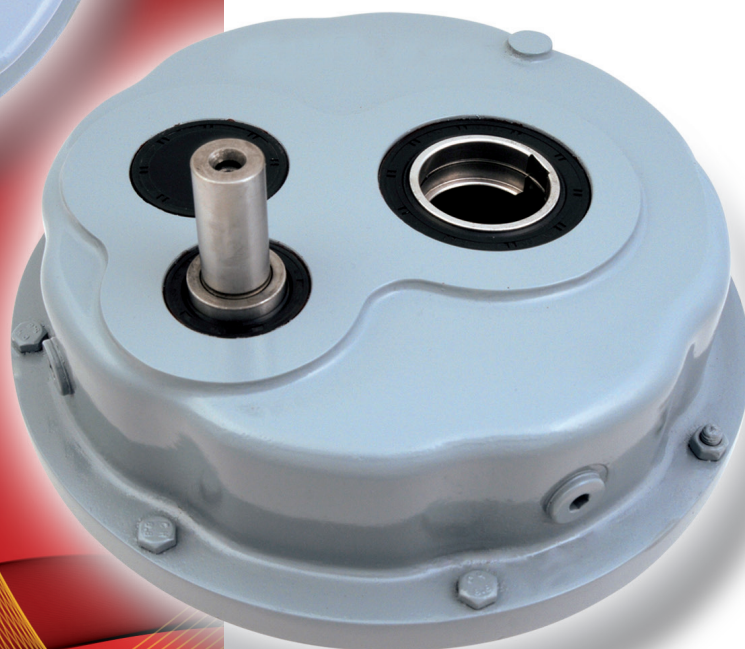
### HANDLING

- 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.





## **CHA SHAFT MOUNTED SPEED REDUCERS**



## INTRODUCTION

CHA shaft mounted gear units have been conceived to be mainly used for belt conveyors, because of backstop system mounting possibility they can be used on inclined planes assuring the system irreversibility.

The reducers are manufactured with GG20 painted cast iron cases and grinded gears 21NiCrMo2 material.

## PRODUCT FEATURES

- High efficiency
- Low noise
- Easy mounting
- Backstop mounting possibility

CHA gearboxes are manufactured in 8 sizes. Other ratios available on request.



## 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.

### TRANSMISSION RATIO i

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

### TORQUE M

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

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

$M_2$  = Output torque

$M_{2n}$  = Rated output torque

$P_1$  = Input power

$\eta$  = Transmission efficiency

$f_s$  = Service factor

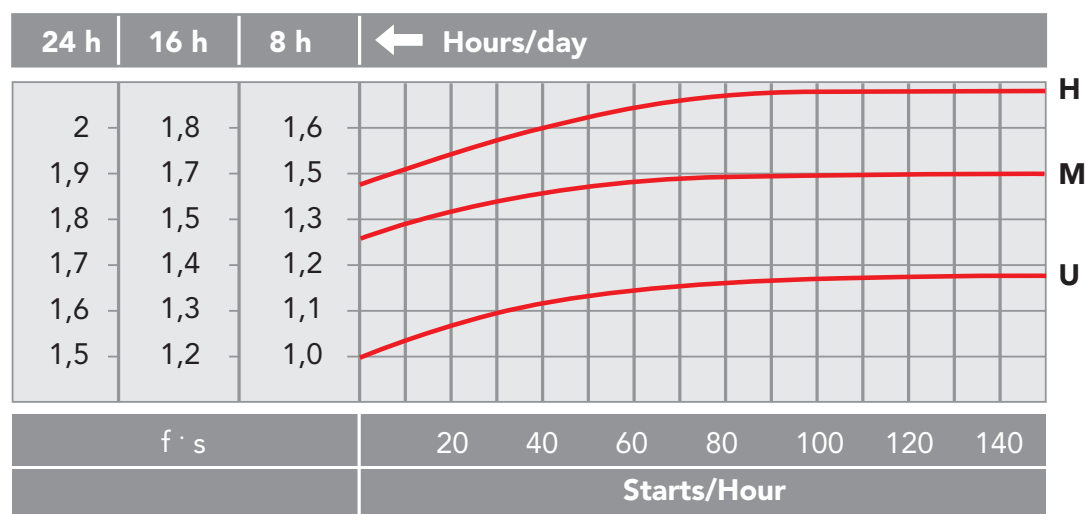


## SERVICE FACTOR $F_s$

The service factor mainly depends on three parameters:

- type to load: U - M - H
- run time: h/day
- start-up frequency: na/h

**U** = uniform  
**M** = moderate  
**H** = heavy  
**na/h** = starts/hour



### LOAD TYPE/APPLICATION

- U** Conveyor belts for light weights - centrifugal pumps - lifts - bottling machines
- M** Conveyor belts for heavy weights - packing machines - wood working machines - gear pumps
- H** Mixers - bucket elevators - tooling machines - machinery for bricks - vibrators



## 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  
          = 1,4 chain sprocket  
          = 1,75 v-pulley  
          = 2,5 flat-pulley  
 $D$  = Transmission element diameter  
 $R_{n1}$  = Radial load allowed on input shaft

Relationship between radial load  $F_R$  e  $R_{n1}$  must be provided according to following representation.

$$F_R \leq F_{n1}$$

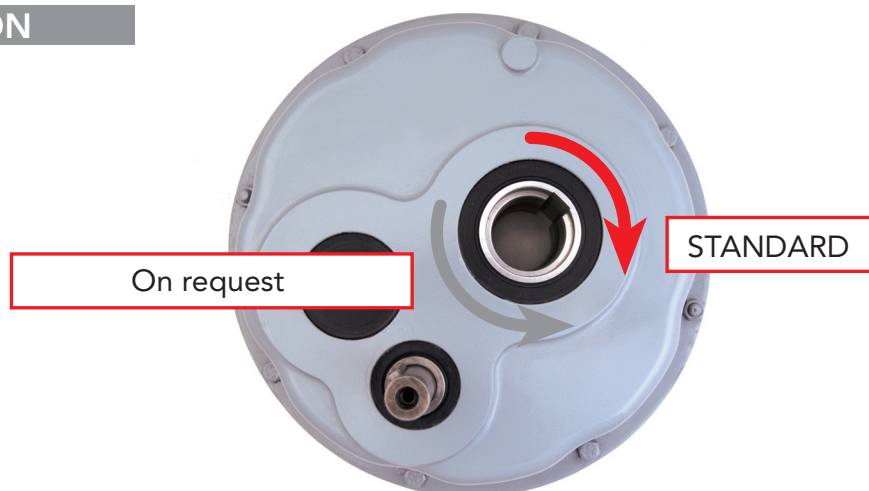


## BACKSTOP DEVICE

125

On request it is possible to have, with the exception of CHA 30, the backstop device. The direction of free rotation must be specified when the order is placed.

### ROTATION







Gears of CHA gear unit series run at oil bath and lubrication could be provided with splashing. Applicable plug position and oil quantity are given at tables according to variable mounting positions. Suitable checking of oil level must always be according to center of oil-level plug or with dipstick. Sometimes, there are possibility difference between oil-level and oil quantity which is given at table.

| LUBRICATION (Litres) |          |          |          |          |          |          |          |
|----------------------|----------|----------|----------|----------|----------|----------|----------|
| CHA 30               | CHA 35/2 | CHA 40/2 | CHA 45/2 | CHA 50/2 | CHA 60/2 | CHA 70/2 | CHA 80/2 |
| 0.5                  | 1.1      | 1.8      | 3.6      | 7.3      | 7.5      | 14.0     | 11.0     |

NOTE: The gearboxes are supplied without oil.

| VALUE OF VISCOSITY ACCORDING TO TYPE OF LOAD AND TEMPERATURE |                       |                         |                       |                         |
|--------------------------------------------------------------|-----------------------|-------------------------|-----------------------|-------------------------|
| Type of loads                                                | CHA<br>0°C - 20°C     |                         | CHA<br>20°C - 40°C    |                         |
|                                                              | Mineral Oil<br>ISO VG | Synthetic Oil<br>ISO VG | Mineral Oil<br>ISO VG | Synthetic Oil<br>ISO VG |
| Uniform load                                                 | 150                   | 150                     | 220                   | 220                     |
| Medium load                                                  | 150                   | 150                     | 320                   | 220                     |
| Heavy load                                                   | 200                   | 200                     | 460                   | 320                     |

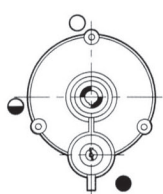
For choosing suitable oil, you must consider viscosity values which are specified according to type of load and ambient temperature on above table.



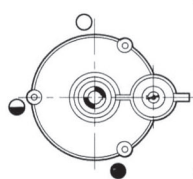


## MOUNTING POSITION

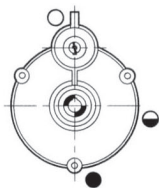
### CHA 30/1



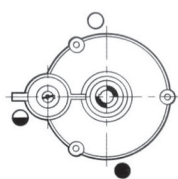
A



B



C

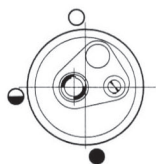


D

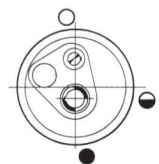
### CHA 35/2 · CHA 50/2 · CHA 60/2 · CHA 70/2



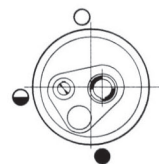
A



B

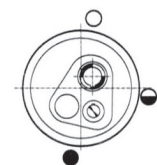


C

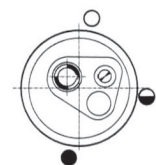


D

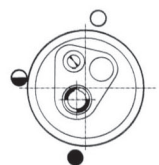
### CHA 40/2 · CHA 45/2 · CHA 80/2



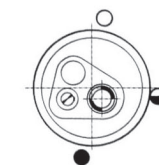
A



B

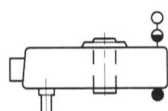


C

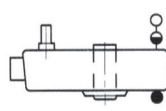


D

### CHA 30/1

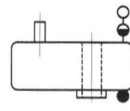


VA

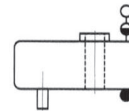


VB

### CHA 35/2 & CHA 80/2



VA

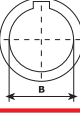


VB

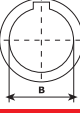
- Vent plug - Filler plug
- ◐ Level plug
- Drain plug



# GEAR UNIT SELECTION TABLE

|  |                        | CHA 30/1/30 |      | CHA 35/2/35 |     |     |     | CHA 40/2/40-45 |      |      |      |      | CHA 45/2/45-50-55 |      |      |      |      |
|-----------------------------------------------------------------------------------|------------------------|-------------|------|-------------|-----|-----|-----|----------------|------|------|------|------|-------------------|------|------|------|------|
| i                                                                                 |                        | 10          | 12,7 | 10          | 15  | 20  | 25  | 10             | 15   | 20   | 25   | 33   | 10                | 15   | 20   | 25   | 30   |
| $n_1 = 1400 \text{ min}^{-1}$                                                     | $n_2 \text{ min}^{-1}$ | 140         | 110  | 140         | 93  | 71  | 56  | 140            | 93   | 71   | 56   | 42   | 140               | 93   | 71   | 56   | 46   |
|                                                                                   | $Mn_2 \text{ Nm}$      | 130         | 130  | 315         | 330 | 360 | 380 | 630            | 715  | 740  | 760  | 760  | 1050              | 1140 | 1190 | 1235 | 1235 |
|                                                                                   | $Pn_1 \text{ kW}$      | 2           | 1,5  | 4,8         | 3,4 | 2,8 | 2,4 | 9,7            | 7,3  | 5,8  | 4,7  | 3,5  | 16,2              | 11,7 | 9,3  | 7,6  | 6,3  |
|                                                                                   | $Rn_1 \text{ N}$       | 350         | 350  | 500         | 500 | 500 | 500 | 850            | 850  | 850  | 850  | 850  | 1150              | 1150 | 1150 | 1150 | 1150 |
| $n_1 = 900 \text{ min}^{-1}$                                                      | $n_2 \text{ min}^{-1}$ | 90          | 71   | 90          | 60  | 46  | 36  | 90             | 60   | 46   | 36   | 27   | 90                | 60   | 46   | 36   | 30   |
|                                                                                   | $Mn_2 \text{ Nm}$      | 140         | 140  | 368         | 380 | 380 | 380 | 788            | 760  | 760  | 810  | 850  | 1260              | 1190 | 1235 | 1300 | 1300 |
|                                                                                   | $Pn_1 \text{ kW}$      | 1,3         | 1    | 3,7         | 2,5 | 1,9 | 1,5 | 7,8            | 5    | 3,8  | 3,2  | 2,6  | 12,5              | 7,9  | 6,2  | 5,1  | 4,2  |
|                                                                                   | $Rn_1 \text{ N}$       | 400         | 400  | 600         | 600 | 600 | 600 | 950            | 950  | 950  | 950  | 950  | 1300              | 1300 | 1300 | 1300 | 1300 |
| $n_1 = 500 \text{ min}^{-1}$                                                      | $n_2 \text{ min}^{-1}$ | 50          | 39   | 50          | 33  | 25  | 20  | 50             | 33   | 25   | 20   | 15   | 50                | 33   | 25   | 20   | 16   |
|                                                                                   | $Mn_2 \text{ Nm}$      | 170         | 170  | 420         | 400 | 400 | 420 | 840            | 850  | 850  | 900  | 920  | 1365              | 1300 | 1350 | 1400 | 1400 |
|                                                                                   | $Pn_1 \text{ kW}$      | 0,9         | 0,7  | 2,3         | 1,4 | 1,1 | 0,9 | 4,6            | 2,9  | 2,4  | 1,9  | 1,5  | 7,6               | 4,7  | 3,8  | 3    | 2,5  |
|                                                                                   | $Rn_1 \text{ N}$       | 500         | 500  | 750         | 750 | 750 | 750 | 1200           | 1200 | 1200 | 1200 | 1200 | 1650              | 1650 | 1650 | 1650 | 1650 |

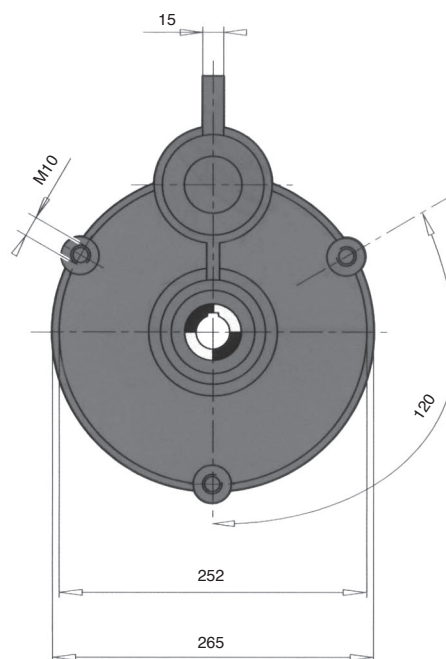
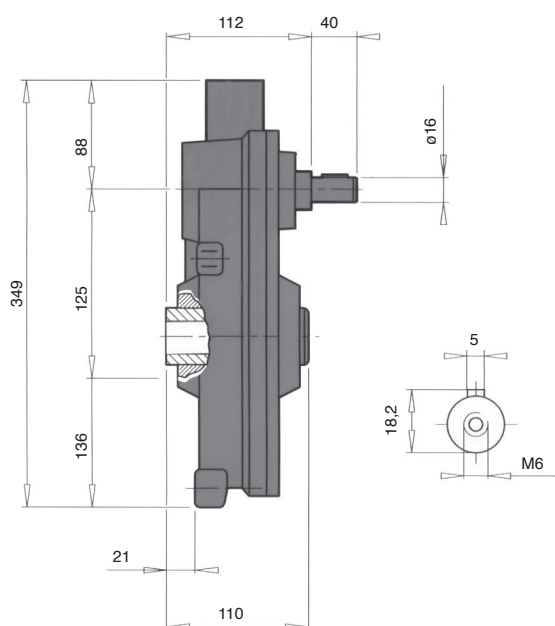
128

|  |                        | CHA 50/2/50 - 55 - 60 |      |      |      |      | CHA 60/2/60 |      | CHA 70/2/70 |      |      | CHA 80/2/80 |      |
|-------------------------------------------------------------------------------------|------------------------|-----------------------|------|------|------|------|-------------|------|-------------|------|------|-------------|------|
| i                                                                                   |                        | 10                    | 15   | 20   | 25   | 30   | 15          | 20   | 10          | 15   | 20   | 15          | 20   |
| $n_1 = 1400 \text{ min}^{-1}$                                                       | $n_2 \text{ min}^{-1}$ | 140                   | 93   | 69   | 56   | 47   | 93          | 69   | 139         | 93   | 70   | 93          | 69   |
|                                                                                     | $Mn_2 \text{ Nm}$      | 1838                  | 1805 | 2048 | 1900 | 2100 | 3040        | 3413 | 3990        | 4180 | 4725 | 5795        | 6405 |
|                                                                                     | $Pn_1 \text{ kW}$      | 28,4                  | 18,5 | 15,5 | 11,7 | 10,8 | 31,4        | 26,3 | 62          | 42,8 | 35,7 | 59,9        | 48,3 |
|                                                                                     | $Rn_1 \text{ N}$       | 1700                  | 1700 | 1700 | 1700 | 1700 | 2600        | 2600 | 3400        | 3400 | 3400 | 4200        | 4200 |
| $n_1 = 900 \text{ min}^{-1}$                                                        | $n_2 \text{ min}^{-1}$ | 90                    | 60   | 44   | 36   | 30   | 60          | 44   | 89          | 60   | 45   | 60          | 44   |
|                                                                                     | $Mn_2 \text{ Nm}$      | 1995                  | 1850 | 2100 | 1995 | 2205 | 3135        | 3570 | 4620        | 4275 | 4830 | 5985        | 6615 |
|                                                                                     | $Pn_1 \text{ kW}$      | 19,7                  | 12,3 | 10,3 | 7,9  | 7,2  | 20,9        | 17,4 | 46,2        | 28,5 | 23,1 | 39,9        | 32,6 |
|                                                                                     | $Rn_1 \text{ N}$       | 1900                  | 1900 | 1900 | 1900 | 1900 | 2900        | 2900 | 3800        | 3800 | 3800 | 4700        | 4700 |
| $n_1 = 500 \text{ min}^{-1}$                                                        | $n_2 \text{ min}^{-1}$ | 50                    | 33   | 24,5 | 20   | 16,5 | 33          | 24,5 | 50          | 33   | 25   | 33          | 24,5 |
|                                                                                     | $Mn_2 \text{ Nm}$      | 2100                  | 2100 | 2205 | 2300 | 2415 | 3500        | 3728 | 4725        | 4900 | 5250 | 6600        | 6930 |
|                                                                                     | $Pn_1 \text{ kW}$      | 11,6                  | 7,3  | 6    | 4,8  | 4,4  | 12,4        | 10,1 | 26,3        | 17,1 | 14,3 | 22,8        | 18,8 |
|                                                                                     | $Rn_1 \text{ N}$       | 2400                  | 2400 | 2400 | 2400 | 2400 | 3600        | 3600 | 4750        | 4750 | 4750 | 5900        | 5900 |



# DIMENSION SHEET

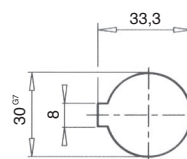
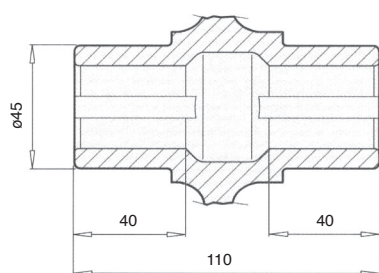
## CHA 30/1/30



Weight Kg 19

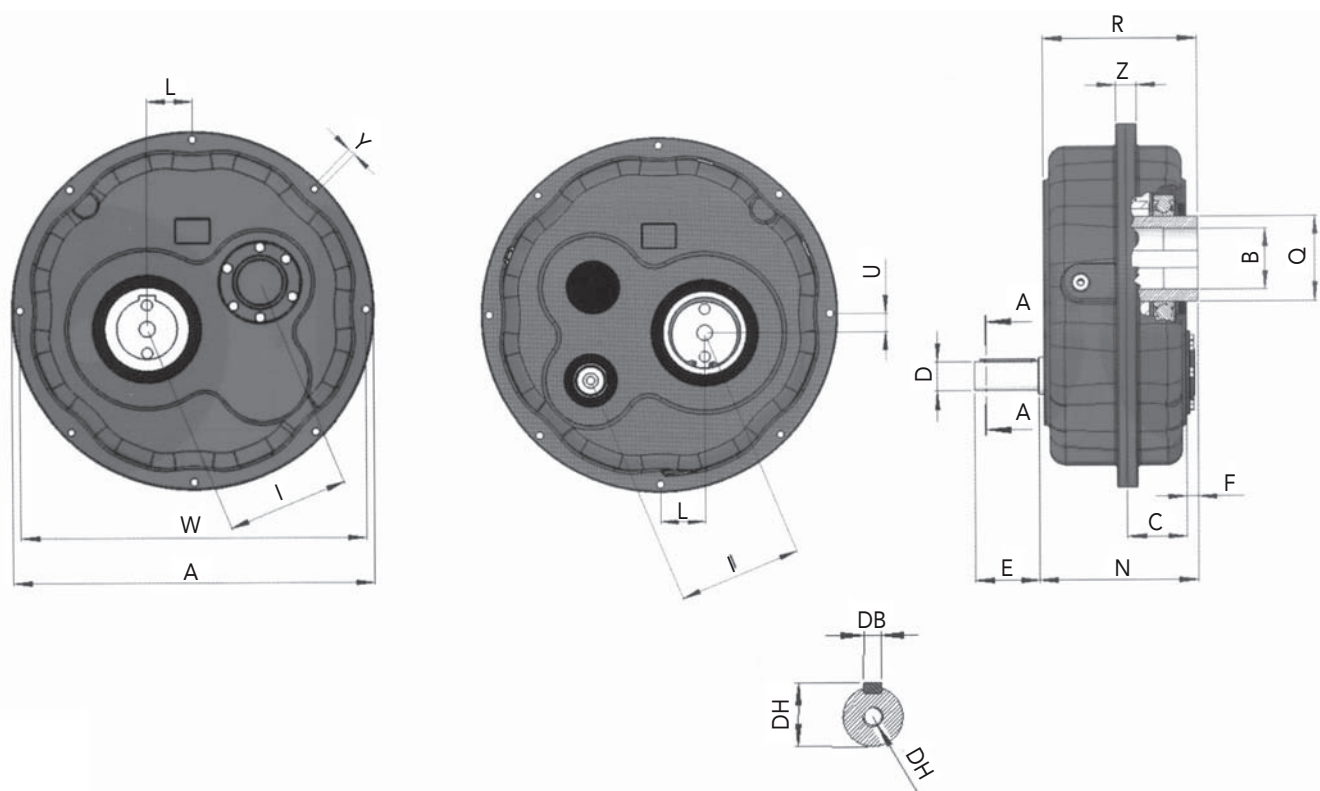
129

## OUTPUT SHAFT





# DIMENSION SHEET



130

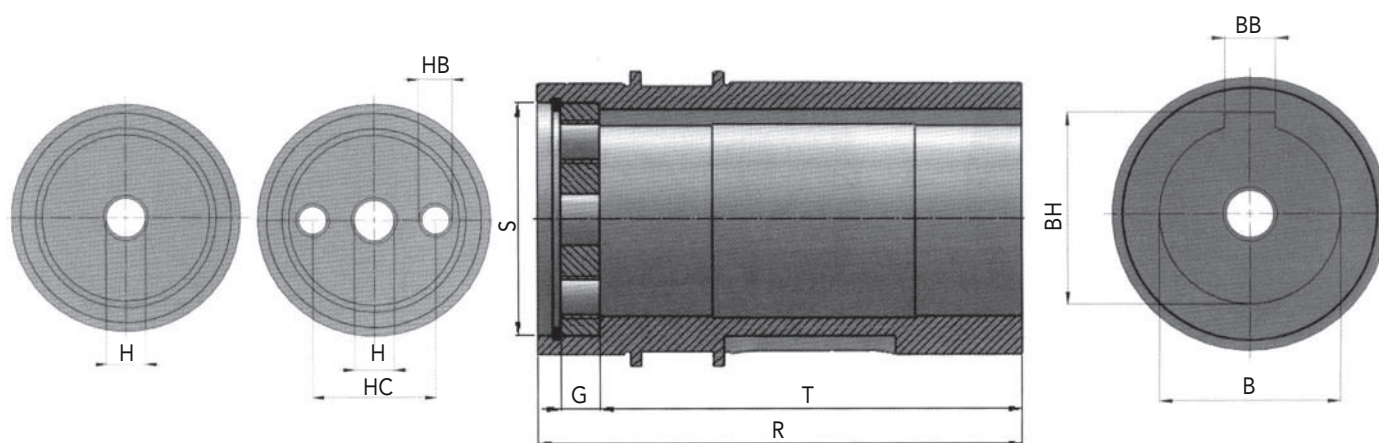
## Dimensions

| Type        | A   | B <sup>G7</sup> | C  | D  | DB | DH   | DM  | E   | F  | I   | L  | N   | Q   | R   | U  | W   | Y   | Z    | Kg  |
|-------------|-----|-----------------|----|----|----|------|-----|-----|----|-----|----|-----|-----|-----|----|-----|-----|------|-----|
| CHA 35/2/35 | 265 | 35              | 44 | 19 | 6  | 21,5 | M6  | 40  | 12 | 83  | 23 | 126 | 50  | 124 | 21 | 240 | 8,5 | 20,5 | 18  |
| CHA 40/2/40 | 322 | 40              | 57 | 24 | 8  | 27   | M8  | 50  | 11 | 112 | 30 | 150 | 60  | 144 | 22 | 302 | 8,5 | 20,5 | 28  |
| CHA 40/2/45 | 322 | 45              | 57 | 24 | 8  | 27   | M8  | 50  | 11 | 112 | 30 | 150 | 60  | 144 | 22 | 302 | 8,5 | 20,5 | 28  |
| CHA 45/2/45 | 364 | 45              | 62 | 28 | 8  | 31   | M10 | 60  | 15 | 123 | 34 | 164 | 75  | 162 | 33 | 344 | 9   | 20,5 | 38  |
| CHA 45/2/50 | 364 | 50              | 62 | 28 | 8  | 31   | M10 | 60  | 15 | 123 | 34 | 164 | 75  | 162 | 33 | 344 | 9   | 20,5 | 38  |
| CHA 45/2/55 | 364 | 55              | 62 | 28 | 8  | 31   | M10 | 60  | 15 | 123 | 34 | 164 | 75  | 162 | 33 | 344 | 9   | 20,5 | 37  |
| CHA 50/2/50 | 434 | 50              | 66 | 38 | 10 | 42   | M12 | 80  | 15 | 143 | 40 | 190 | 85  | 182 | 46 | 410 | 11  | 24,5 | 58  |
| CHA 50/2/55 | 434 | 55              | 66 | 38 | 10 | 42   | M12 | 80  | 15 | 143 | 40 | 190 | 85  | 182 | 46 | 410 | 11  | 24,5 | 58  |
| CHA 50/2/60 | 434 | 60              | 66 | 38 | 10 | 42   | M12 | 80  | 15 | 143 | 40 | 190 | 85  | 182 | 46 | 410 | 11  | 24,5 | 58  |
| CHA 60/2/60 | 498 | 60              | 73 | 38 | 10 | 42   | M12 | 80  | 15 | 174 | 47 | 205 | 100 | 199 | 48 | 468 | 13  | 28,5 | 97  |
| CHA 60/2/70 | 498 | 70              | 73 | 38 | 10 | 42   | M12 | 80  | 15 | 174 | 47 | 205 | 100 | 199 | 48 | 468 | 13  | 28,5 | 97  |
| CHA 70/2/70 | 550 | 70              | 84 | 42 | 12 | 45   | M12 | 110 | 18 | 188 | 52 | 228 | 120 | 223 | 53 | 520 | 13  | 28,5 | 121 |
| CHA 80/2/80 | 597 | 80              | 94 | 48 | 14 | 51,5 | M16 | 110 | 21 | 207 | 58 | 255 | 140 | 249 | 58 | 570 | 13  | 32,5 | 160 |



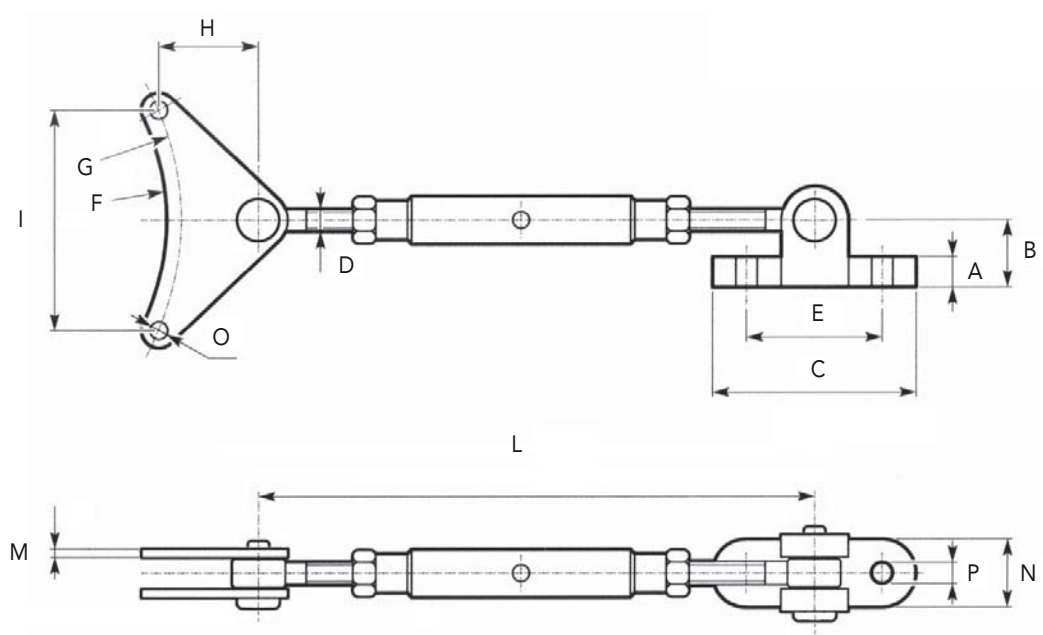


## OUTPUT SHAFT



Dimensions

| Type        | B <sup>G7</sup> | BB | BH   | G  | H   | HB  | HC | R   | S  | T   |
|-------------|-----------------|----|------|----|-----|-----|----|-----|----|-----|
| CHA 30/1/30 | 30              | 8  | 33,3 | -  | -   | -   | -  | 110 | -  | -   |
| CHA 35/2/35 | 35              | 10 | 38,3 | 8  | M12 | -   | -  | 124 | 40 | 106 |
| CHA 40/2/40 | 40              | 12 | 43,3 | 8  | M12 | -   | -  | 144 | 52 | 124 |
| CHA 40/2/45 | 45              | 14 | 47,3 | 8  | M12 | -   | -  | 144 | 52 | 124 |
| CHA 45/2/45 | 45              | 14 | 48,8 | 10 | M16 | -   | -  | 162 | 62 | 140 |
| CHA 45/2/50 | 50              | 14 | 53,8 | 10 | M16 | -   | -  | 162 | 62 | 140 |
| CHA 45/2/55 | 55              | 16 | 59,3 | 10 | M16 | -   | -  | 162 | 72 | 140 |
| CHA 50/2/50 | 50              | 14 | 53,8 | 10 | M16 | -   | -  | 182 | 62 | 160 |
| CHA 50/2/55 | 55              | 16 | 59,3 | 10 | M16 | -   | -  | 182 | 72 | 160 |
| CHA 50/2/60 | 60              | 18 | 64,4 | 12 | 17  | M12 | 42 | 182 | 72 | 160 |
| CHA 60/2/60 | 60              | 18 | 64,4 | 12 | 17  | M12 | 42 | 199 | 72 | 175 |
| CHA 60/2/70 | 70              | 20 | 74,9 | 12 | 22  | M16 | 50 | 199 | 90 | 175 |
| CHA 70/2/70 | 70              | 20 | 74,9 | 12 | 22  | M16 | 50 | 223 | 90 | 193 |
| CHA 80/2/80 | 80              | 22 | 85,4 | 18 | 22  | M16 | 60 | 249 | 95 | 219 |

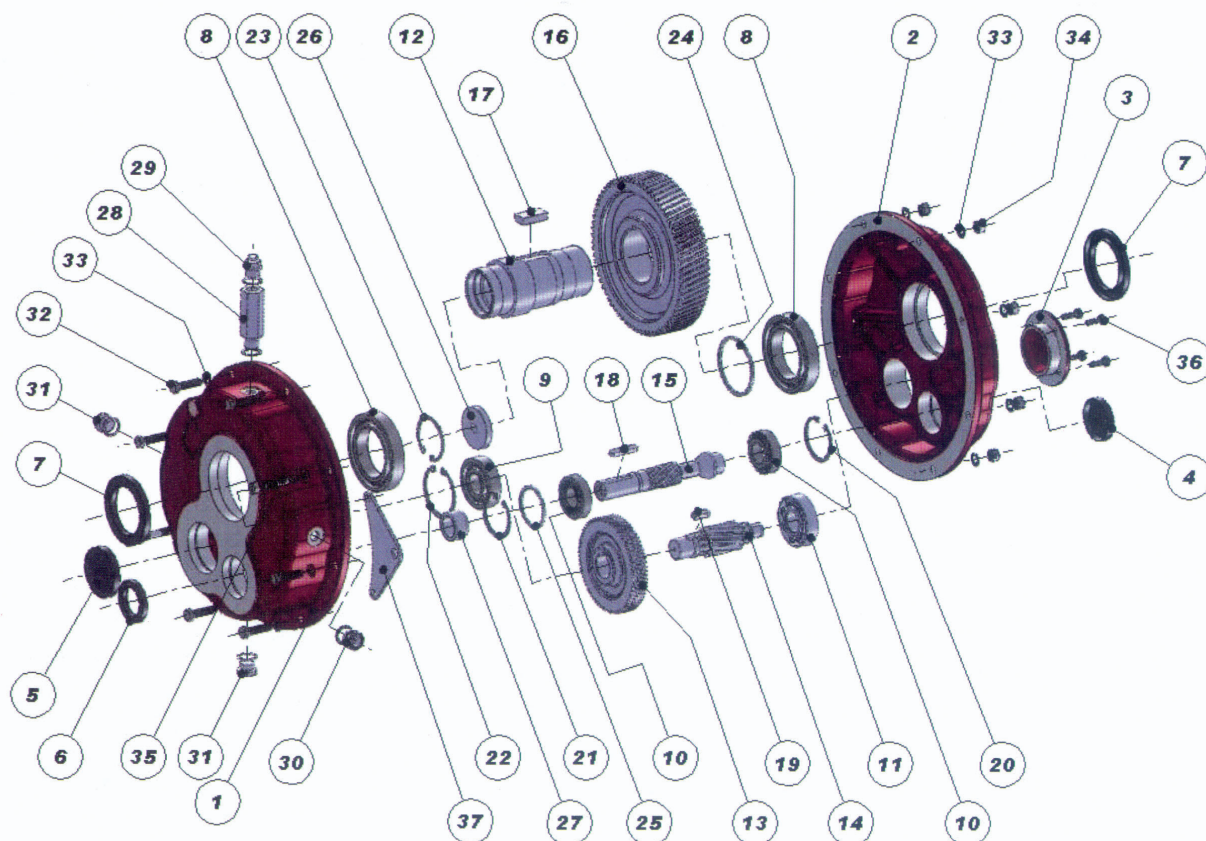


|                 | A  | B  | C   | D   | E  | F   | G   | H   | I     | L <sub>Min</sub> | L <sub>Max</sub> | M | N  | O    | P    |
|-----------------|----|----|-----|-----|----|-----|-----|-----|-------|------------------|------------------|---|----|------|------|
| <b>CHA 35/2</b> | 10 | 25 | 75  | M10 | 50 | 111 | 120 | 45  | 92    | 200              | 300              | 4 | 25 | 8,5  | 8,5  |
| <b>CHA 40/2</b> | 16 | 35 | 105 | M12 | 70 | 143 | 151 | 51  | 115,5 | 210              | 310              | 4 | 35 | 8,5  | 10,5 |
| <b>CHA 45/2</b> | 16 | 35 | 105 | M12 | 70 | 164 | 172 | 57  | 132   | 210              | 310              | 5 | 35 | 10,5 | 10,5 |
| <b>CHA 50/2</b> | 18 | 40 | 115 | M14 | 75 | 195 | 205 | 70  | 157   | 240              | 360              | 5 | 40 | 10,5 | 12,5 |
| <b>CHA 60/2</b> | 18 | 40 | 115 | M14 | 75 | 221 | 234 | 84  | 179   | 240              | 360              | 5 | 40 | 12,5 | 12,5 |
| <b>CHA 70/2</b> | 20 | 45 | 135 | M16 | 85 | 247 | 260 | 100 | 199   | 260              | 410              | 6 | 50 | 12,5 | 14,5 |
| <b>CHA 80/2</b> | 20 | 45 | 135 | M16 | 85 | 272 | 285 | 102 | 218   | 260              | 410              | 6 | 50 | 13   | 14,5 |



# PARTS LIST

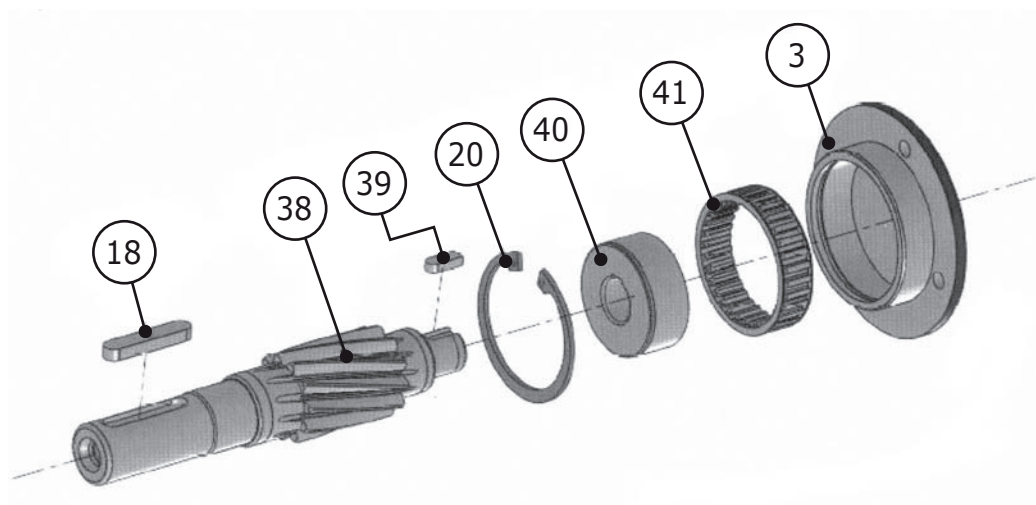
## CHA DOUBLE STAGE



### CHA DOUBLE STAGE

| Part No | CHA 35/2 | CHA 40/2 | CHA 45/2  | CHA 50/2  | CHA 60/2   | CHA 70/2   | CHA 80/2   |
|---------|----------|----------|-----------|-----------|------------|------------|------------|
| 6       | 30/52/7  | 35/52/7  | 40/62/7   | 55/80/10  | 55/80/8    | 55/85/8    | 60/90/8    |
| 7       | 50/72/8  | 60/85/8  | 75/100/10 | 85/110/12 | 100/130/12 | 120/150/12 | 140/180/12 |
| 8       | 6010     | 6012     | 6015      | 6017      | 6020       | 6024       | 6028       |
| 9       | 6304     | 6305     | 6306      | NJ 308 E  | NJ 2209 E  | NJ 2210 E  | NJ 2211 E  |
| 10      | 6304     | 30205    | 30206     | 32208     | 32208      | 32209      | 32210      |
| 11      | 6205     | NJ 305 E | NJ 306 E  | NJ 308 E  | NJ 2209 E  | NJ 211 E   | NJ 2211 E  |

|    |              |    |                         |
|----|--------------|----|-------------------------|
| 1  | CASE A       | 20 | CIRCLIP                 |
| 2  | CASE B       | 21 | CIRCLIP                 |
| 3  | CASE COVER   | 22 | CIRCLIP                 |
| 4  | OIL COVER    | 23 | CIRCLIP                 |
| 5  | OIL COVER    | 24 | SUPPORTING DISC         |
| 6  | SEAL         | 25 | SUPPORTING DISC         |
| 7  | SEAL         | 26 | FIXING ELEMENT          |
| 8  | BEARING      | 27 | BUSH                    |
| 9  | BEARING      | 28 | APPARATUS FOR EXTENSION |
| 10 | BEARING      | 29 | VENT PLUG               |
| 11 | BEARING      | 30 | OIL LEVEL PLUG          |
| 12 | OUTPUT SHAFT | 31 | DRAIN PLUG              |
| 13 | DRIVEN GEAR  | 32 | HEXAGONAL HEAD SCREW    |
| 14 | PINION GEAR  | 33 | WASHER                  |
| 15 | PINION GEAR  | 34 | NUT                     |
| 16 | DRIVEN GEAR  | 35 | STUD BOLT               |
| 17 | KEY          | 36 | HEXAGONAL SOCKET HEAD   |
| 18 | KEY          | 37 | BRACKET                 |
| 19 | KEY          |    |                         |



|    |             |
|----|-------------|
| 3  | CASE COVER  |
| 18 | KEY         |
| 20 | CIRCLIP     |
| 38 | PINION GEAR |
| 39 | KEY         |
| 40 | BUSH        |
| 41 | BACKSTOP    |



### 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.
- 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.
- 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

- The gearboxes are supplied empty of oil and must be filled by the customer before used.

### 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.

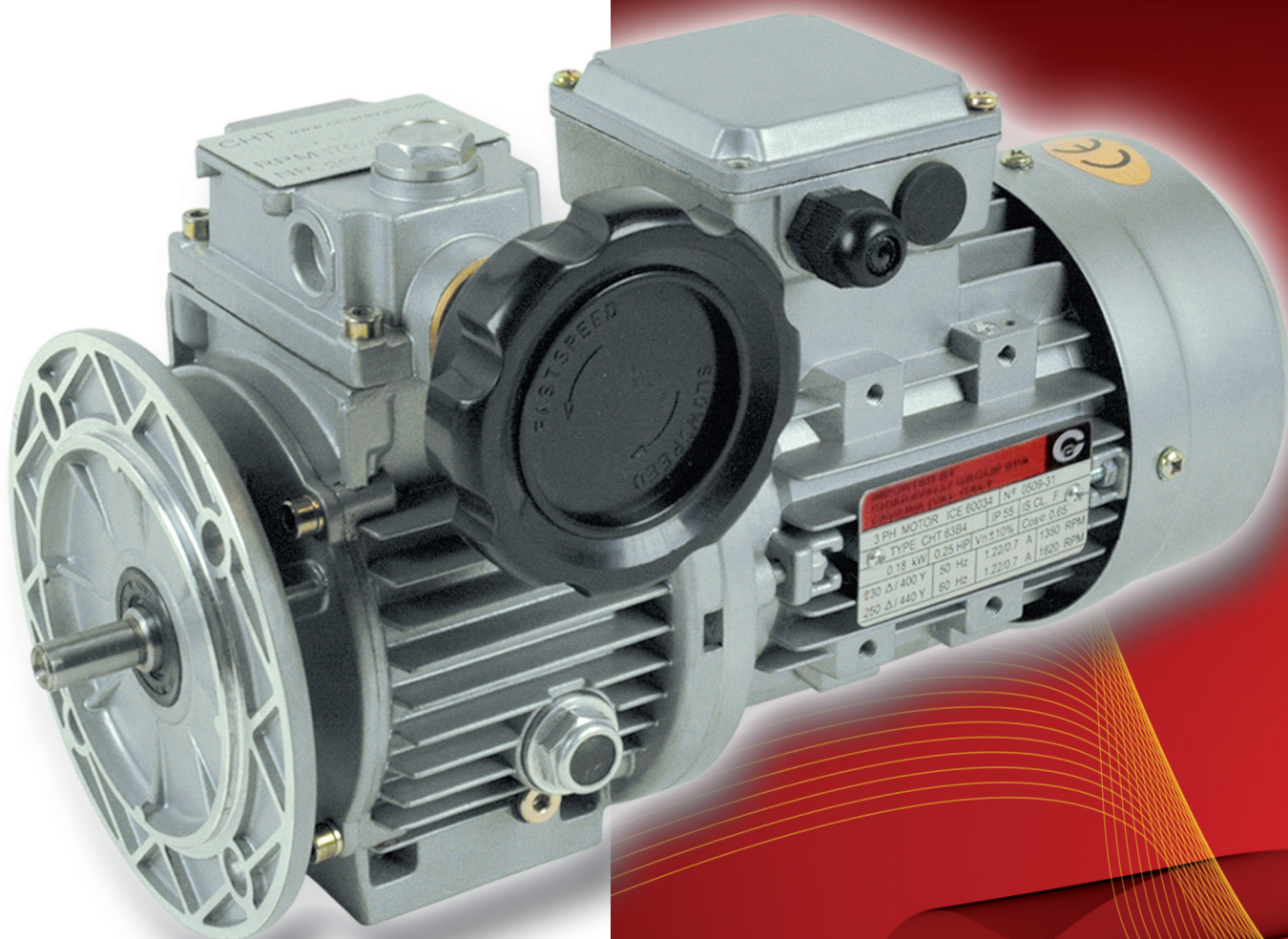
### HANDLING

- 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.





## SPEED VARIATORS CHV SERIES



## SPEED VARIATORS CHV SERIES

Chiaravalli Group S.p.A. introduces his mechanical speed variators line with oil bath lubrication CHV series sizes 02-05-10-20-30-50, the main characteristics are the following:

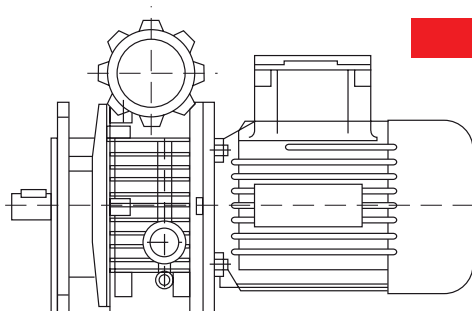
Speed range 1:5  
Smooth and silent running  
Increasing torque at low speed  
High efficiency  
Input and output flange B5  
Compact design  
Aluminium cases sizes 02-05-10  
RAL 9022 grey painted



## DESIGNATION

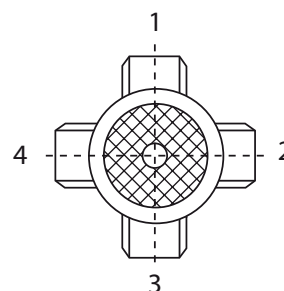
| TYPE | SIZE | POWER Kw    | POLES | VOLTAGE | FREQUENCY | T.BOX POS. | MOUNT. POS. |
|------|------|-------------|-------|---------|-----------|------------|-------------|
| CHV  | 02   | 0.18 - 0.22 | 4     | 230/400 | 50HZ      | 1          | B5          |
|      | 05   | 0.37        |       |         |           | 2          | V1          |
|      | 10   | 0.75        |       |         |           | 3          | V3          |
|      | 20   | 1.1 - 1.5   |       |         |           | 4          |             |
|      | 30   | 2.2         |       |         |           |            |             |
|      | 50   | 3.0 - 4.0   |       |         |           |            |             |

Mounting position

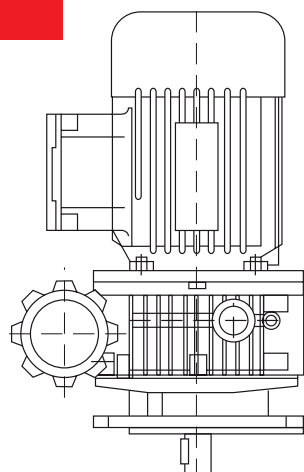


B5

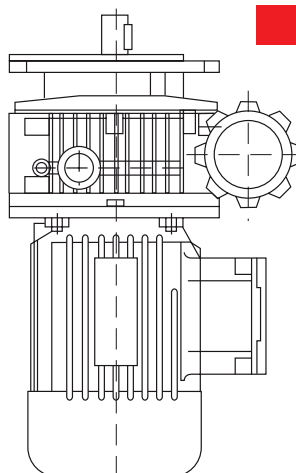
Terminal box position



V1



V3





## PERFORMANCES WITH 4 POLES MOTORS

| SPEED VARIATOR | POWER Kw | OUTPUT SPEED | OUTPUT TORQUE Nm |
|----------------|----------|--------------|------------------|
| CHV 02         | 0.18     | 170 - 880    | 3.0 - 1.5        |
| CHV 02         | 0.22     | 170 - 880    | 3.8 - 1.9        |
| CHV 05         | 0.37     | 200 - 1000   | 6.0 - 3.0        |
| CHV 10         | 0.75     | 200 - 1000   | 12 - 6.0         |
| CHV 20         | 1.10     | 200 - 1000   | 18 - 9.0         |
| CHV 20         | 1.50     | 200 - 1000   | 24 - 12          |
| CHV 30         | 2.20     | 200 - 1000   | 36 - 18          |
| CHV 50         | 3.00     | 200 - 1000   | 48 - 24          |
| CHV 50         | 4.00     | 200 - 1000   | 64 - 32          |



## LUBRICATION

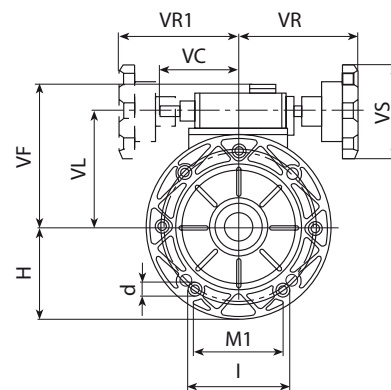
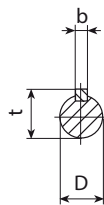
Speed variators are supplied with lubrication oil for assembly position B5, for other positions it will be necessary to add oil, see following table.

| OIL QUANTITY Kg |      |      |      |      |      |      |
|-----------------|------|------|------|------|------|------|
| CHV             | 02   | 05   | 10   | 20   | 30   | 50   |
| B5              | 0.13 | 0.15 | 0.33 | 0.8  | 1.20 | 1.20 |
| V1              | 0.3  | 0.4  | 0.85 | 1.40 | 2.15 | 2.15 |
| V3              | 0.2  | 0.25 | 0.45 | 0.90 | 1.30 | 1.30 |



## RECOMMENDED OILS

|       |               |
|-------|---------------|
| AGIP  | A.T.F. DEXRON |
| ESSO  | A.T.F. DEXRON |
| SHELL | A.T.F. DEXRON |
| BP    | A.T.F. DEXRON |



|        | B  | D(j6) | E  | G     | G3   | H   | I   | M   | M1 | N   | d  | D1 | P   | T   | K    | VC | VF  | VL  | VR  | VR1 | VS  | b | f   | t    | kg  |
|--------|----|-------|----|-------|------|-----|-----|-----|----|-----|----|----|-----|-----|------|----|-----|-----|-----|-----|-----|---|-----|------|-----|
| CHV 02 | 23 | 11    | 50 | 112.5 | 64.5 | 70  | 72  | 115 | 60 | 95  | 9  | M6 | 140 | 3.5 | 46   | 71 | 111 | 78  | 110 | 110 | 85  | 4 | M5  | 12.5 | 3.4 |
| CHV 05 | 30 | 14    | 40 | 110   | 74   | 80  | 90  | 130 | 76 | 110 | 9  | M8 | 160 | 3.5 | 52.5 | 71 | 123 | 90  | 110 | 110 | 85  | 5 | M6  | 16   | 4.7 |
| CHV 10 | 40 | 19    | 58 | 139   | 85.5 | 100 | 98  | 165 | 84 | 130 | 11 | M8 | 200 | 3.5 | 60   | 79 | 140 | 107 | 120 | 120 | 110 | 6 | M6  | 21.5 | 7.8 |
| CHV 20 | 50 | 24    | -  | 188   | 115  | 126 | 241 | 165 | -  | 130 | 11 | -  | 200 | 3.5 | -    | -  | 144 | 122 | 150 | -   | 110 | 8 | M8  | 27   | 31  |
| CHV 30 | 60 | 28    | -  | 222   | 131  | 150 | 270 | 215 | -  | 180 | 15 | -  | 250 | 4   | -    | -  | 188 | 150 | 160 | -   | 110 | 8 | M10 | 33   | 55  |
| CHV 50 | 60 | 28    | -  | 222   | 131  | 150 | 270 | 215 | -  | 180 | 15 | -  | 250 | 4   | -    | -  | 188 | 150 | 160 | -   | 110 | 8 | M10 | 33   | 57  |



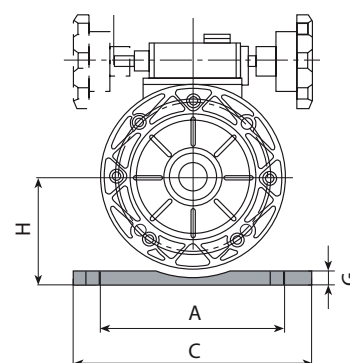
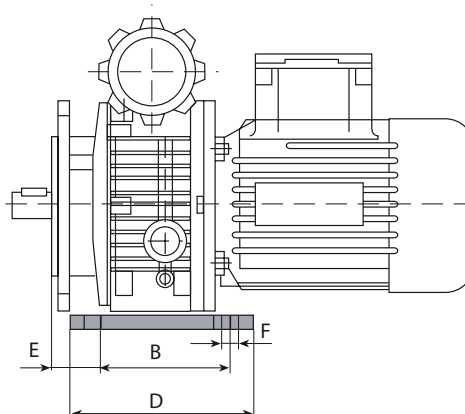
### Gravitational indicator

The gravitational indicator must be inserted into the handwheel and with a numerical scale it shows a reference link to the speed. Set the indicator moving the two hands to zero and put it into the handwheel after setting the variators to minimum speed.

The gravitational indicator doesn't work with vertical handwheel axis.

## Feet kit

| CHV | 02   | 05   | 10   |
|-----|------|------|------|
| A   | 110  | 120  | 160  |
| B   | 105  | 104  | 125  |
| C   | 145  | 149  | 190  |
| D   | 120  | 125  | 150  |
| E   | 15.5 | 20.5 | 26.5 |
| F   | 9    | 9    | 11   |
| G   | 10   | 12   | 14   |
| H   | 82   | 93   | 113  |





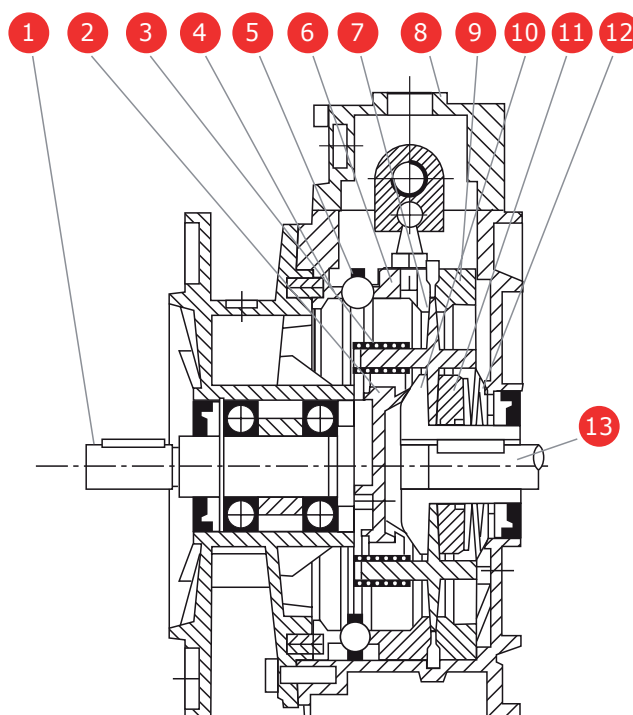
## USE AND MAINTENANCE

- The screws under the handwheel are well adjusted, don't touch them.
- Don't adjust the handwheel when the motor is off, this can cause internal breaking.
- Speed variators are filled with oil, check the level before running.
- After the running-in the oil must be changed, check the level periodically.
- The temperature after the running-in can reach 50/55°C over room temperature.
- When the variator is supplied without motor make sure that the assembled one is at least "normal" class quality and the connection is not forced.
- Speed variators are supplied with closed oil plugs. When the variator is used for continuous work replace the closed plug with the supplied breather plug.

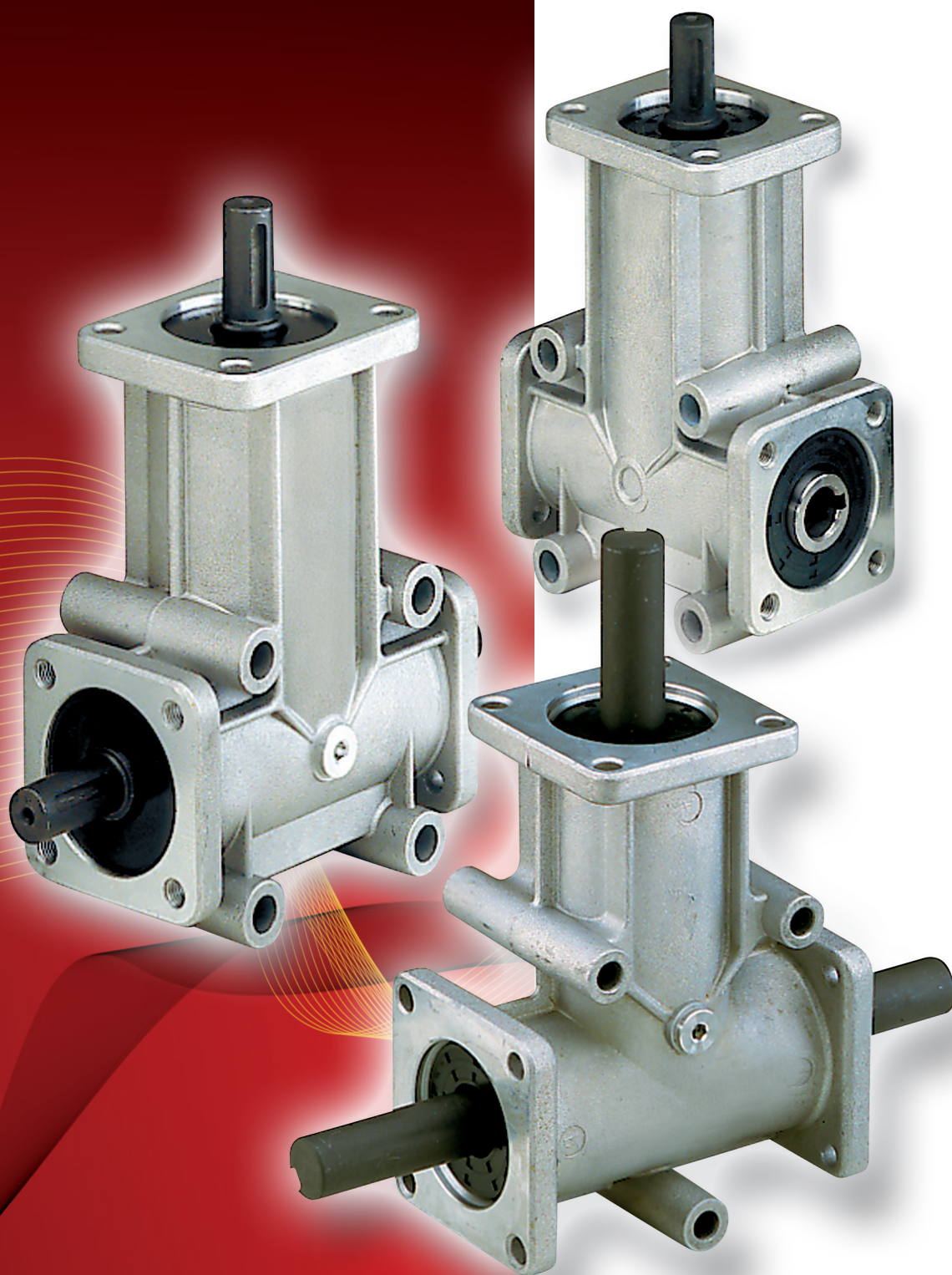


## SPARE PART LIST

- |    |                                 |
|----|---------------------------------|
| 1  | OUTPUT SHAFT                    |
| 2  | PLANET SUPPORT                  |
| 3  | SLIDE BLOCK                     |
| 4  | REGULATING ORBIT                |
| 5  | BALL RING                       |
| 6  | MOVING OUTER PLANETARY ORBIT    |
| 7  | PLANET WHEEL                    |
| 8  | OPERATING BOX                   |
| 9  | FIXED OUTER PLANETARY ORBIT     |
| 10 | FIXED INFERIOR PLANETARY ORBIT  |
| 11 | MOVING INFERIOR PLANETARY ORBIT |
| 12 | BUTTERFLY SPRING                |
| 13 | MOTOR SHAFT                     |







**RIGHT-ANGLE PRECISION  
BEVEL GEAR DRIVES**

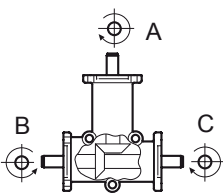
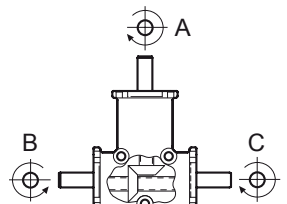
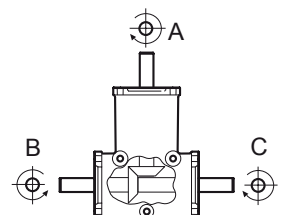
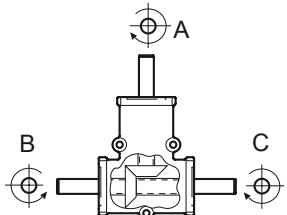


## RIGHT-ANGLE PRECISION BEVEL GEAR DRIVES

CHT-RB and CHT-RP right-angle drives are designed for industrial applications where rotary power must be transferred between two shafts at right-angles to each other. CHT-RB and CHT-RP are available in many different sizes with 2 or 3 outputs and 1/1 - 1/2 - 1/3 transmission ratios.

### Right-angle identification:

The following tables show: the shaft diameter, the transmission ratio, the input shaft, the output shafts B-C or D and the direction of rotation (looking at the shaft from the front).

| SIZE |                                                                                     | MOD. RB |       | CHT   |        |      |          |           |
|------|-------------------------------------------------------------------------------------|---------|-------|-------|--------|------|----------|-----------|
|      |                                                                                     | SHAFT   | RATIO | INPUT | OUTPUT | TYPE | CODE     | WEIGHT Kg |
| 1    |    | Ø 8     | 1/1   | A     | B      | 1    | R1081101 | 0.3       |
|      |                                                                                     | Ø 8     | 1/1   | A     | C      | 2    | R1081102 |           |
|      |                                                                                     | Ø 8     | 1/2   | A     | B      | 3    | R1081203 |           |
|      |                                                                                     | Ø 8     | 1/2   | A     | C      | 4    | R1081204 |           |
|      |                                                                                     | Ø 8     | 1/1   | A     | B-C    | 5    | R1081105 |           |
|      |                                                                                     | Ø 8     | 1/2   | A     | B-C    | 6    | R1081206 |           |
| 2    |  | Ø 15    | 1/1   | A     | B      | 1    | R1151101 | 1.1       |
|      |                                                                                     | Ø 15    | 1/1   | A     | C      | 2    | R1151102 |           |
|      |                                                                                     | Ø 15    | 1/2   | A     | B      | 3    | R1151203 |           |
|      |                                                                                     | Ø 15    | 1/2   | A     | C      | 4    | R1151204 |           |
|      |                                                                                     | Ø 15    | 1/1   | A     | B-C    | 5    | R1151105 | 1.2       |
|      |                                                                                     | Ø 15    | 1/2   | A     | B-C    | 6    | R1151206 |           |
| 3    |  | Ø 20    | 1/1   | A     | B      | 1    | R1201101 | 3.4       |
|      |                                                                                     | Ø 20    | 1/1   | A     | C      | 2    | R1201102 |           |
|      |                                                                                     | Ø 20    | 1/2   | A     | B      | 3    | R1201203 |           |
|      |                                                                                     | Ø 20    | 1/2   | A     | C      | 4    | R1201204 |           |
|      |                                                                                     | Ø 20    | 1/1   | A     | B-C    | 5    | R1201105 | 3.5       |
|      |                                                                                     | Ø 20    | 1/2   | A     | B-C    | 6    | R1201206 |           |
| 4    |  | Ø 25    | 1/1   | A     | B      | 1    | R1251101 | 5.5       |
|      |                                                                                     | Ø 25    | 1/1   | A     | C      | 2    | R1251102 |           |
|      |                                                                                     | Ø 25    | 1/2   | A     | B      | 3    | R1251203 |           |
|      |                                                                                     | Ø 25    | 1/2   | A     | C      | 4    | R1251204 |           |
|      |                                                                                     | Ø 25    | 1/1   | A     | B-C    | 5    | R1251105 | 5.8       |
|      |                                                                                     | Ø 25    | 1/2   | A     | B-C    | 6    | R1251206 |           |



# RIGHT-ANGLE PRECISION BEVEL GEAR DRIVES

| SIZE | MOD. RP | CHT   |       |       |        |      |          |           |
|------|---------|-------|-------|-------|--------|------|----------|-----------|
|      |         | SHAFT | RATIO | INPUT | OUTPUT | TYPE | CODE     | WEIGHT Kg |
| 1    |         | Ø 8   | 1/1   | A     | B      | 1    | R3081101 | 0.6       |
|      |         | Ø 8   | 1/1   | A     | C      | 2    | R3081102 |           |
|      |         | Ø 8   | 1/2   | A     | B      | 3    | R3081203 |           |
|      |         | Ø 8   | 1/2   | A     | C      | 4    | R3081204 |           |
|      |         | Ø 8   | 1/1   | A     | B-C    | 5    | R3081105 |           |
|      |         | Ø 8   | 1/2   | A     | B-C    | 6    | R3081206 |           |
| 2    |         | Ø 14  | 1/1   | A     | B      | 1    | R3141101 | 2         |
|      |         | Ø 14  | 1/1   | A     | C      | 2    | R3141102 |           |
|      |         | Ø 14  | 1/2   | A     | B      | 3    | R3141203 |           |
|      |         | Ø 14  | 1/2   | A     | C      | 4    | R3141204 |           |
|      |         | Ø 14  | 1/3   | A     | B      | 5    | R3141305 |           |
|      |         | Ø 14  | 1/3   | A     | C      | 6    | R3141306 |           |
|      |         | Ø 14  | 1/1   | A     | B-C    | 7    | R3141107 |           |
|      |         | Ø 14  | 1/2   | A     | B-C    | 8    | R3141208 |           |
|      |         | Ø 14  | 1/3   | A     | B-C    | 9    | R3141309 |           |
| 3    |         | Ø 14  | 1/1   | A     | B-C    | 10   | R3141110 | 1.9       |
|      |         | Ø 14  | 1/2   | A     | B-C    | 11   | R3141211 |           |
|      |         | Ø 14  | 1/3   | A     | B-C    | 12   | R3141312 |           |
| 4    |         | Ø 14  | 1/1   | A     | B-C    | 13   | R3141113 | 3.2       |
|      |         | Ø 14  | 1/1   | A     | C-D    | 14   | R3141114 |           |
|      |         | Ø 14  | 1/2   | A     | B-C    | 15   | R3141215 |           |
|      |         | Ø 14  | 1/2   | A     | C-D    | 16   | R3141216 |           |
|      |         | Ø 14  | 1/3   | A     | B-C    | 17   | R3141317 |           |
|      |         | Ø 14  | 1/3   | A     | C-D    | 18   | R3141318 |           |
|      |         | Ø 14  | 1/1   | A     | B-C-D  | 19   | R3141119 |           |
|      |         | Ø 14  | 1/2   | A     | B-C-D  | 20   | R3141220 |           |
|      |         | Ø 14  | 1/3   | A     | B-C-D  | 21   | R3141321 |           |
| 5    |         | Ø 19  | 1/1   | A     | B      | 1    | R3191101 | 4.5       |
|      |         | Ø 19  | 1/1   | A     | C      | 2    | R3191102 |           |
|      |         | Ø 19  | 1/2   | A     | B      | 3    | R3191203 |           |
|      |         | Ø 19  | 1/2   | A     | C      | 4    | R3191204 |           |
|      |         | Ø 19  | 1/3   | A     | B      | 5    | R3191305 |           |
|      |         | Ø 19  | 1/3   | A     | C      | 6    | R3191306 |           |
|      |         | Ø 19  | 1/1   | A     | B-C    | 7    | R3191107 |           |
|      |         | Ø 19  | 1/2   | A     | B-C    | 8    | R3191208 |           |
|      |         | Ø 19  | 1/3   | A     | B-C    | 9    | R3191309 |           |
| 6    |         | Ø 19  | 1/1   | A     | B-C    | 10   | R3191110 | 4.4       |
|      |         | Ø 19  | 1/2   | A     | B-C    | 11   | R3191211 |           |
|      |         | Ø 19  | 1/3   | A     | B-C    | 12   | R3191312 |           |
| 7    |         | Ø 24  | 1/1   | A     | B      | 1    | R3241101 | 4.6       |
|      |         | Ø 24  | 1/1   | A     | C      | 2    | R3241102 |           |
|      |         | Ø 24  | 1/2   | A     | B      | 3    | R3241203 |           |
|      |         | Ø 24  | 1/2   | A     | C      | 4    | R3241204 |           |
|      |         | Ø 24  | 1/3   | A     | B      | 5    | R3241305 |           |
|      |         | Ø 24  | 1/3   | A     | C      | 6    | R3241306 |           |
|      |         | Ø 24  | 1/1   | A     | B-C    | 7    | R3241107 |           |
|      |         | Ø 24  | 1/2   | A     | B-C    | 8    | R3241208 |           |
|      |         | Ø 24  | 1/3   | A     | B-C    | 9    | R3241309 |           |



## TECHNICAL NOTES

Selecting the correct type of angle bevel gear is not simply a question of defining the power required in relation to R.P.M. and the torque to be transmitted. It also involves defining the conditions under which the angle bevel gear will be used. Defining operating conditions involves taking into consideration a number of factors such as the type of operating cycle (intermittent, continuous), radial and axial loads on the shaft ends, maximum and minimum temperatures, ambient conditions (e.g. dust and dirt levels) and the type of lubricant used. To decide the type and size of angle bevel gear required, proceed as follows.

- 1) Use table 1 to define the Service Factor for your application.
- 2) Calculate the Rated Power ( $P_n$ );  $P_n = P_e$  (Horsepower)  $\times$  FS.
- 3) Use the output speed and the rated power ( $P_n$ ) to select the angle gear size and transmission ratio required for your application.
- 4) Check that the radial and axial load at the midpoint of the exposed shaft end does not exceed the values shown in table external loads.
- 5) Check that the operating temperature does not exceed  $-20^{\circ}\text{C} \div 80^{\circ}\text{C}$
- 6) If you require a 1/2 or 1/3 ratio, do not use a speed multiplier with an input more than 750 R.P.M. and 500 R.P.M. in ratio 1/2 and 1/3, respectively.
- 7) If the unit is to be used in very dusty conditions, protect the oil seal against direct exposure to dust to prevent abrasive damage which might shorten the working life of the unit.

**TABLE 1**

SERVICE FACTOR  $F_s$

|                           | hours of operation for day |     |     |     |
|---------------------------|----------------------------|-----|-----|-----|
|                           | 3                          | 8   | 12  | 24  |
| uniform load              | 0.7                        | 0.9 | 1   | 1.3 |
| load with moderate shocks | 0.9                        | 1   | 1.3 | 1.8 |
| load with shocks          | 1.3                        | 1.6 | 1.8 | 2.3 |



# INPUT POWER (Pn) Output torque T

| Output speed       |       | 50 rpm    | 100 rpm   | 200 rpm   | 400 rpm   | 800 rpm   | 1400 rpm  | 2000 rpm  | 3000 rpm  |
|--------------------|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Output torque      |       | T power   | T power   | T power   | T power   | T power   | T power   | T power   | T power   |
| Type               | Ratio | Nm Kw     | Nm Kw     | Nm Kw     | Nm Kw     | Nm Kw     | Nm Kw     | Nm Kw     | Nm Kw     |
| RB 1-1/2- RB 1-5   | R 1:1 | 4,7 0,02  | 3,9 0,04  | 3,3 0,07  | 2,8 0,12  | 2,3 0,19  | 2,0 0,30  | 1,8 0,39  | 1,7 0,53  |
| RP 1-1/2- RP 1-5   |       | 9,1 0,05  | 7,6 0,08  | 6,4 0,13  | 5,4 0,23  | 4,5 0,38  | 4,0 0,58  | 3,6 0,76  | 3,3 1,03  |
| RB 2-1/2- RB 2-5   |       | 16,5 0,09 | 13,9 0,15 | 11,7 0,24 | 9,8 0,41  | 8,2 0,69  | 7,2 1,05  | 6,6 1,37  | 5,9 1,86  |
| RP 3-10            |       | 28,8 0,15 | 24,2 0,25 | 20,3 0,43 | 17,1 0,72 | 14,4 1,20 | 12,5 1,83 | 11,4 2,39 | 10,3 3,25 |
| RP 2-1/2           |       | 34,5 0,18 | 29,0 0,30 | 24,4 0,51 | 20,5 0,86 | 17,2 1,44 | 15,0 2,20 | 13,7 2,87 | 12,4 3,89 |
| RP 4-13/14         |       |           |           |           |           |           |           |           |           |
| RP 2-7             |       |           |           |           |           |           |           |           |           |
| RP 4-19            |       |           |           |           |           |           |           |           |           |
| RB 3-1/2           |       | 53,1 0,28 | 44,6 0,47 | 37,5 0,79 | 31,6 1,32 | 26,5 2,22 | 23,1 3,38 | 21,1 4,42 | 19,1 5,99 |
| RB 3-5             |       |           |           |           |           |           |           |           |           |
| RP 6-10            |       | 75,7 0,40 | 63,7 0,67 | 53,5 1,12 | 45,0 1,89 | 37,9 3,17 | 32,9 4,82 | 30,1 6,30 | 27,2 8,54 |
| RB 4-1/2- RP 5-1/2 |       | 87,3 0,46 | 73,4 0,77 | 61,8 1,29 | 51,9 2,17 | 43,7 3,66 | 38,0 5,56 | 34,7 7,27 | 31,4 9,86 |
| RP 7-1/2- RB 4-5   |       |           |           |           |           |           |           |           |           |
| RP 5-7- RP 7-7     |       |           |           |           |           |           |           |           |           |
| RB 1-3/4- RB 1-6   | R 1:2 | 4,0 0,02  | 3,4 0,04  | 2,8 0,06  | 2,4 0,10  | 2,0 0,17  | 1,7 0,26  | 1,6 0,33  | 1,4 0,45  |
| RP 1-3/4- RP 1-6   |       | 8,9 0,05  | 7,5 0,08  | 6,3 0,13  | 5,3 0,22  | 4,4 0,37  | 3,9 0,57  | 3,5 0,74  | 3,2 1,00  |
| RB 2-3/4- RB 2-6   |       | 14,6 0,08 | 12,3 0,13 | 10,3 0,22 | 8,7 0,36  | 7,3 0,61  | 6,3 0,93  | 5,8 1,21  | 5,2 1,65  |
| RP 3-11            |       | 28,1 0,15 | 23,7 0,25 | 19,9 0,42 | 16,7 0,70 | 14,1 1,18 | 12,2 1,79 | 11,2 2,34 | 10,1 3,17 |
| RP 2-3/4           |       | 33,8 0,18 | 28,5 0,30 | 23,9 0,50 | 20,1 0,84 | 16,9 1,42 | 14,7 2,16 | 13,5 2,82 | 12,2 3,82 |
| RP 4-15/16         |       |           |           |           |           |           |           |           |           |
| RP 2-8             |       |           |           |           |           |           |           |           |           |
| RP 4-20            |       |           |           |           |           |           |           |           |           |
| RB 3-3/4- RB 3-6   |       | 42,5 0,22 | 35,7 0,37 | 30,1 0,63 | 25,3 1,06 | 21,3 1,78 | 18,5 2,71 | 16,9 3,54 | 15,3 4,80 |
| RP 6-11            |       | 71,3 0,37 | 59,9 0,63 | 50,4 1,06 | 42,4 1,77 | 35,6 2,98 | 31,0 4,54 | 28,3 5,93 | 25,6 8,04 |
| RB 4-3/4- RP 4-6   |       | 82,3 0,43 | 69,2 0,72 | 58,2 1,22 | 48,9 2,05 | 41,1 3,44 | 35,8 5,24 | 32,7 6,85 | 29,6 9,28 |
| RP 7-3/4- RB 4-6   |       |           |           |           |           |           |           |           |           |
| RP 5-8- RP 7-8     |       |           |           |           |           |           |           |           |           |
| RP 2-5/6           | R 1:3 | 27,5 0,14 | 23,1 0,24 | 19,4 0,41 | 16,3 0,68 | 13,7 1,15 | 12,0 1,75 | 10,9 2,29 | 9,9 3,10  |
| RP 2-9             |       |           |           |           |           |           |           |           |           |
| RP 3-12            |       |           |           |           |           |           |           |           |           |
| RP 4-17/18         |       |           |           |           |           |           |           |           |           |
| RP 4-21            |       |           |           |           |           |           |           |           |           |
| RP 5-5/6           |       | 63,4 0,33 | 53,3 0,56 | 44,9 0,94 | 37,7 1,58 | 31,7 2,66 | 27,6 4,04 | 25,2 5,28 | 22,8 7,16 |
| RP 5-9             |       |           |           |           |           |           |           |           |           |
| RP 6-12            |       |           |           |           |           |           |           |           |           |
| RP 7-5/6           |       |           |           |           |           |           |           |           |           |
| RP 7-9             |       |           |           |           |           |           |           |           |           |





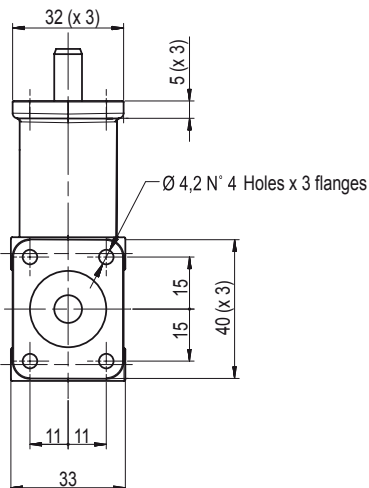
# RIGHT-ANGLE PRECISION BEVEL GEAR DRIVES

EXTERNAL LOADS IN CONNECTION WITH SPEED Fr = radial load Fa = axial load

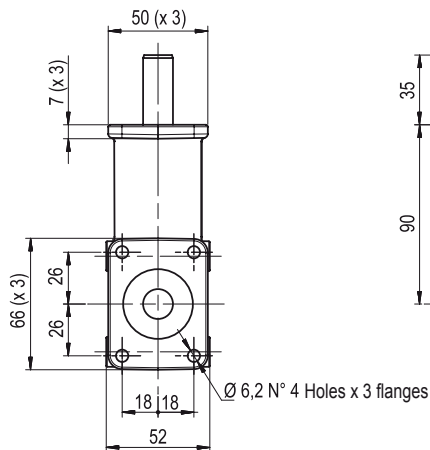
| Output speed                                              |       | 50 rpm |     | 100 rpm |     | 200 rpm |     | 400 rpm |     | 800 rpm |     | 1400 rpm |     | 2000 rpm |     | 3000 rpm |     |
|-----------------------------------------------------------|-------|--------|-----|---------|-----|---------|-----|---------|-----|---------|-----|----------|-----|----------|-----|----------|-----|
| Radial - axial load                                       |       | Fr     | Fa  | Fr      | Fa  | Fr      | Fa  | Fr      | Fa  | Fr      | Fa  | Fr       | Fa  | Fr       | Fa  | Fr       | Fa  |
| Type                                                      | Ratio | N      | N   | N       | N   | N       | N   | N       | N   | N       | N   | N        | N   | N        | N   | N        | N   |
| RB 1-1/2- RB 1-5                                          | R 1:1 | 139    | 94  | 117     | 79  | 98      | 66  | 83      | 56  | 70      | 47  | 60       | 41  | 55       | 37  | 50       | 34  |
| RP 1-1/2- RP 1-5                                          |       | 195    | 158 | 164     | 133 | 138     | 112 | 116     | 94  | 98      | 79  | 85       | 69  | 78       | 63  | 70       | 57  |
| RB 2-1/2- RB 2-5                                          |       | 328    | 220 | 276     | 185 | 232     | 156 | 195     | 131 | 164     | 110 | 142      | 96  | 130      | 87  | 118      | 79  |
| RP 3-10                                                   |       | 430    | 348 | 361     | 293 | 304     | 246 | 256     | 207 | 215     | 174 | 187      | 151 | 171      | 139 | 154      | 125 |
| RP 2-1/2<br>RP 4-13/14<br>RP 2-7<br>RP 4-19               |       | 516    | 418 | 434     | 351 | 365     | 295 | 307     | 248 | 258     | 209 | 224      | 182 | 205      | 166 | 185      | 150 |
| RB 3-1/2<br>RB 3-5                                        |       | 684    | 458 | 575     | 385 | 484     | 324 | 407     | 273 | 342     | 229 | 297      | 199 | 272      | 182 | 246      | 165 |
| RP 6-10                                                   |       | 826    | 554 | 695     | 465 | 584     | 391 | 491     | 329 | 413     | 277 | 359      | 241 | 329      | 220 | 297      | 199 |
| RB 4-1/2 - RP 5-1/2<br>RP 7-1/2- RB 4-5<br>RP 5-7- RP 7-7 |       | 953    | 639 | 802     | 537 | 674     | 452 | 567     | 380 | 477     | 319 | 414      | 278 | 379      | 254 | 342      | 229 |
| RB 1-3/4- RB 1-6                                          | R 1:2 | 107    | 76  | 90      | 64  | 76      | 54  | 64      | 45  | 54      | 38  | 47       | 33  | 43       | 30  | 39       | 27  |
| RP 1-3/4- RP 1-6                                          |       | 182    | 110 | 153     | 93  | 129     | 78  | 108     | 66  | 91      | 55  | 79       | 48  | 73       | 44  | 66       | 40  |
| RB 2-3/4- RB 2-6                                          |       | 276    | 168 | 232     | 141 | 195     | 119 | 164     | 100 | 138     | 84  | 120      | 73  | 110      | 67  | 99       | 60  |
| RP 3-11                                                   |       | 370    | 263 | 311     | 221 | 262     | 186 | 220     | 157 | 185     | 132 | 161      | 114 | 147      | 105 | 133      | 95  |
| RP 2-3/4<br>RP 4-15/16<br>RP 2-8<br>RP 4-20               |       | 445    | 316 | 374     | 266 | 315     | 224 | 265     | 188 | 223     | 158 | 194      | 137 | 177      | 126 | 160      | 114 |
| RB 3-3/4- RB 3-6                                          |       | 548    | 361 | 461     | 303 | 387     | 255 | 326     | 214 | 274     | 180 | 238      | 157 | 218      | 143 | 197      | 130 |
| RP 6-11                                                   |       | 696    | 422 | 585     | 355 | 492     | 299 | 414     | 251 | 348     | 211 | 303      | 184 | 277      | 168 | 250      | 152 |
| RB 4-3/4 - RP 4-6<br>RP 7-3/4- RB 4-6<br>RP 5-8- RP 7-8   |       | 803    | 483 | 675     | 406 | 568     | 341 | 478     | 287 | 402     | 241 | 349      | 210 | 319      | 192 | 289      | 173 |
| RP 2-5/6<br>RP 2-9<br>RP 3-12<br>RP 4-17/18<br>RP 4-21    | R 1:3 | 357    | 199 | 301     | 167 | 253     | 141 | 213     | 118 | 179     | 99  | 155      | 86  | 142      | 79  | 128      | 71  |
| RP 5-5/6<br>RP 5-9<br>RP 6-12<br>RP 7-5/6<br>RP 7-9       |       | 619    | 346 | 521     | 291 | 438     | 245 | 368     | 206 | 310     | 173 | 269      | 151 | 246      | 138 | 222      | 124 |



The diagram shows an isometric view of a mechanical assembly. It consists of a central cylindrical body with a flange at the top and a base. A vertical shaft passes through the center of the assembly. Three rotation axes are indicated by circular arrows: Axis A is vertical, passing through the top flange; Axis B is horizontal, passing through the center of the assembly; and Axis C is horizontal, passing through the base of the assembly.



The diagram shows a three-ported valve assembly. Port A is at the top, Port B is on the left, and Port C is on the right. Each port has a rotation arrow indicating its direction of movement. Port A's arrow points clockwise. Port B's arrow points counter-clockwise. Port C's arrow points clockwise.





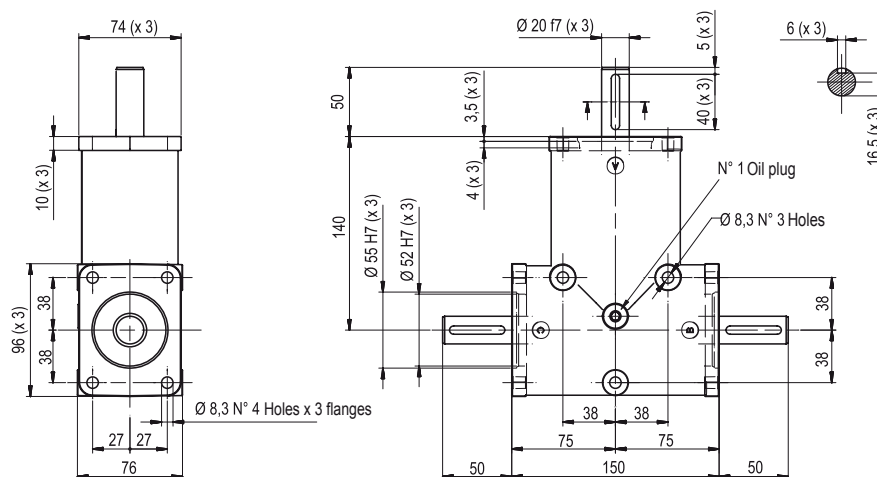
# RIGHT-ANGLE PRECISION BEVEL GEAR DRIVES

SIZE 3

MOD. RB

CHT

|  | RATIO | INPUT | OUTPUT | CODE     | WEIGHT Kg |
|--|-------|-------|--------|----------|-----------|
|  | 1/1   | A     | B      | R1201101 | 3.4       |
|  | 1/1   | A     | C      | R1201102 |           |
|  | 1/2   | A     | B      | R1201203 |           |
|  | 1/2   | A     | C      | R1201204 |           |
|  | 1/1   | A     | B-C    | R1201105 | 3.5       |
|  | 1/2   | A     | B-C    | R1201206 |           |



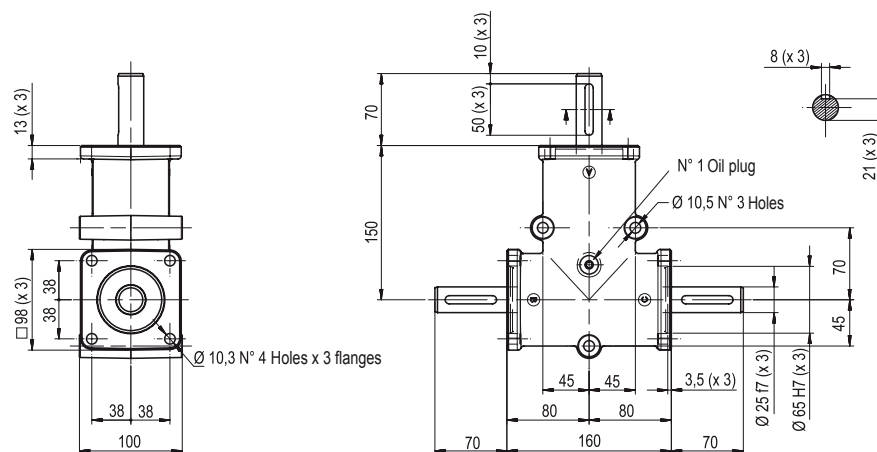
148

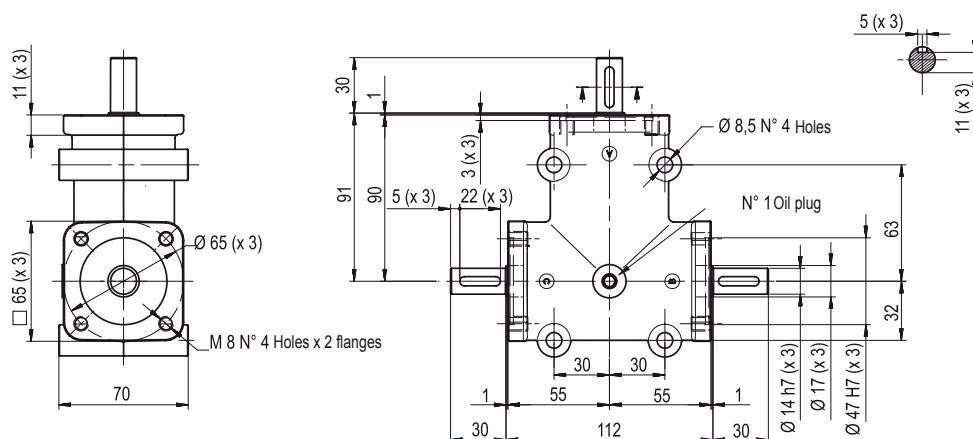
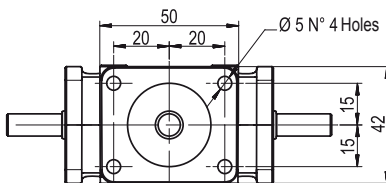
SIZE 4

MOD. RB

CHT

|  | RATIO | INPUT | OUTPUT | CODE     | WEIGHT Kg |
|--|-------|-------|--------|----------|-----------|
|  | 1/1   | A     | B      | R1251101 | 5.5       |
|  | 1/1   | A     | C      | R1251102 |           |
|  | 1/2   | A     | B      | R1251203 |           |
|  | 1/2   | A     | C      | R1251204 |           |
|  | 1/1   | A     | B-C    | R1251105 | 5.8       |
|  | 1/2   | A     | B-C    | R1251206 |           |





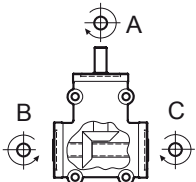


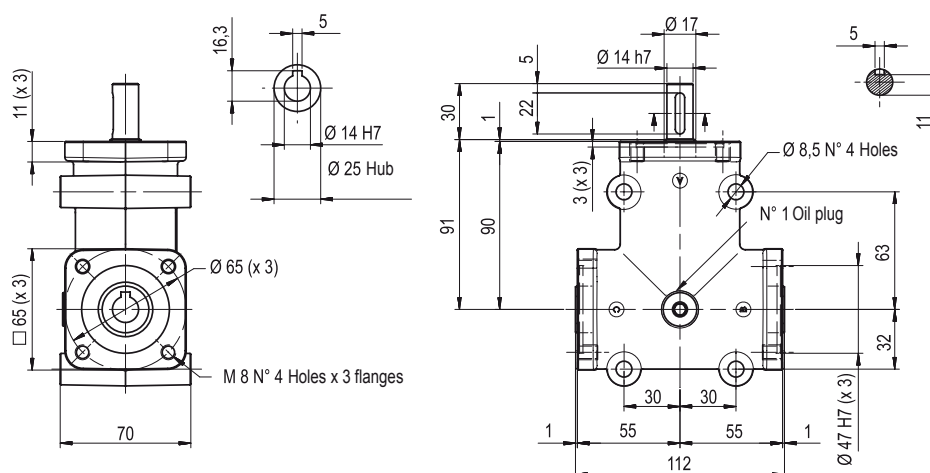
# RIGHT-ANGLE PRECISION BEVEL GEAR DRIVES

SIZE 3

MOD. RP

CHT

|                                                                                   | RATIO | INPUT | OUTPUT | CODE     | WEIGHT Kg |
|-----------------------------------------------------------------------------------|-------|-------|--------|----------|-----------|
|  | 1/1   | A     | B-C    | R3141110 | 2         |
|                                                                                   | 1/2   | A     | B-C    | R3141211 |           |
|                                                                                   | 1/3   | A     | B-C    | R3141312 |           |
|                                                                                   |       |       |        |          |           |

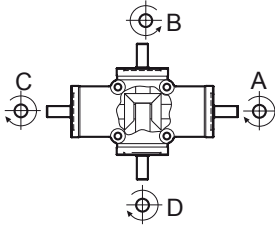


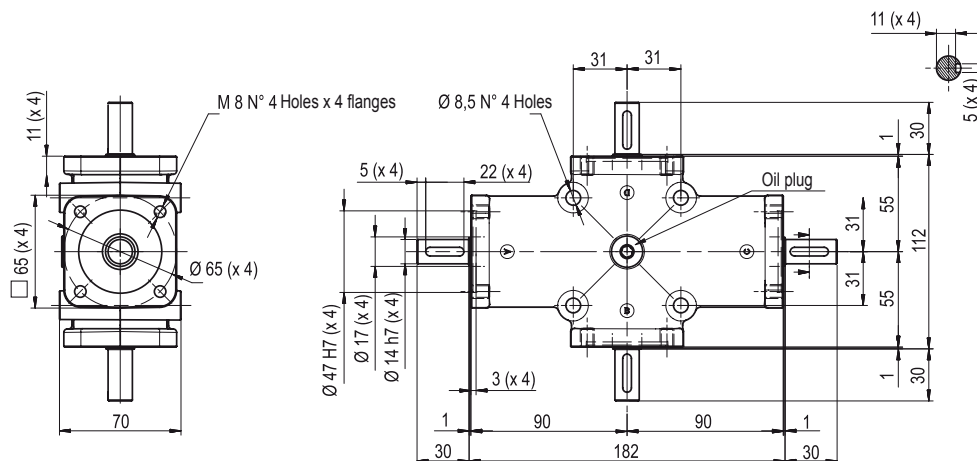
150

SIZE 4

MOD. RP

CHT

|                                                                                     | RATIO | INPUT | OUTPUT | CODE     | WEIGHT Kg |
|-------------------------------------------------------------------------------------|-------|-------|--------|----------|-----------|
|  | 1/1   | A     | B-C    | R3141113 | 3.2       |
|                                                                                     | 1/1   | A     | C-D    | R3141114 |           |
|                                                                                     | 1/2   | A     | B-C    | R3141215 |           |
|                                                                                     | 1/2   | A     | C-D    | R3141216 |           |
|                                                                                     | 1/3   | A     | B-C    | R3141317 |           |
|                                                                                     | 1/3   | A     | C-D    | R3141318 |           |
|                                                                                     | 1/1   | A     | B-C-D  | R3141119 |           |
|                                                                                     | 1/2   | A     | B-C-D  | R3141220 |           |
|                                                                                     | 1/3   | A     | B-C-D  | R3141321 |           |
|                                                                                     |       |       |        |          |           |
|                                                                                     |       |       |        |          |           |
|                                                                                     |       |       |        |          |           |









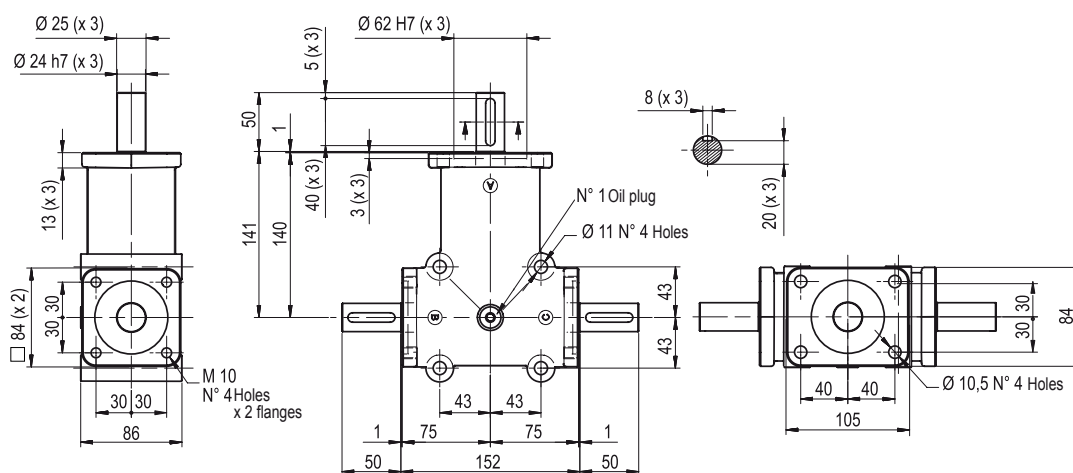
# RIGHT-ANGLE PRECISION BEVEL GEAR DRIVES

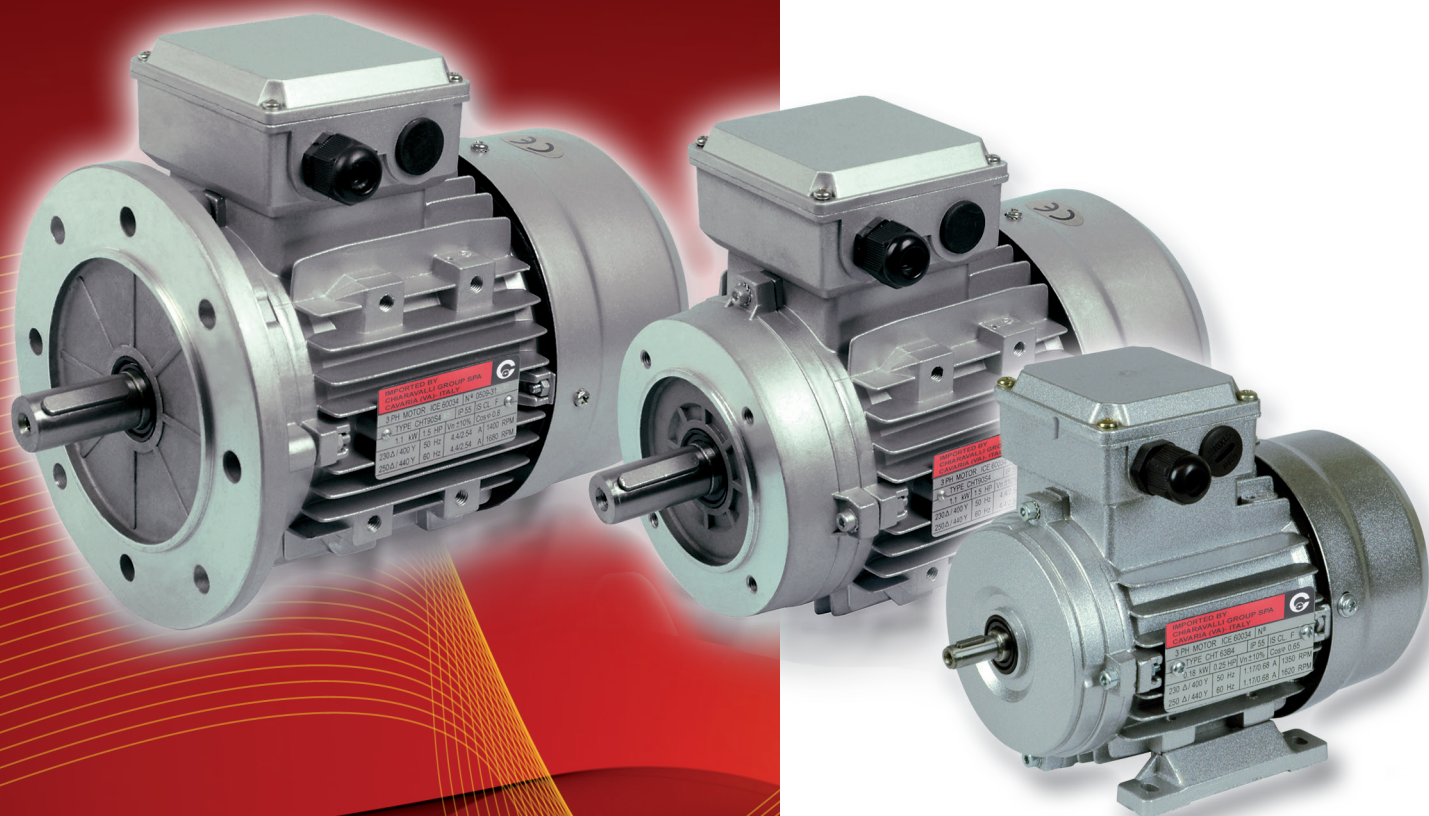
SIZE 7

MOD. RP

CHT

|  | RATIO | INPUT | OUTPUT | CODE     | WEIGHT Kg |
|--|-------|-------|--------|----------|-----------|
|  | 1/1   | A     | B      | R3241101 | 4.5       |
|  | 1/1   | A     | C      | R3241102 |           |
|  | 1/2   | A     | B      | R3241203 |           |
|  | 1/2   | A     | C      | R3241204 |           |
|  | 1/3   | A     | B      | R3241305 |           |
|  | 1/3   | A     | C      | R3241306 |           |
|  | 1/1   | A     | B-C    | R3241107 |           |
|  | 1/2   | A     | B-C    | R3241208 |           |
|  | 1/3   | A     | B-C    | R3241309 |           |





## ELECTRIC MOTORS



## INTRODUCTION

CHT series motors have been produced to be mounted on gearboxes and therefore they have mechanical and electrical characteristics particularly right for this use.

All our motors are IP55, insulation class F with phase separator to be used with frequency variators, in this condition they can be provided complete with forced ventilation.

The motors like the gearboxes are painted with RAL 9022 grey colour epoxy powder.



## TECHNICAL CHARACTERISTICS

- **Cage rotor motors, locked with outside surface ventilation.**
- **Project, construction and test in compliance with CEI2-3, international norms IEC34-1 and principal foreign/international standard.**
- **Power-sizes in specification with IEC 72, national norms UNEL-MEC.**
- **Insulation: class F**
- **Protection: class IP55**
- **Rated power delivered on continuous: S1**
- **European directive ROHS 2002/95/CE**
- **Phase separator**
- **Volt 400/690 standard from 160 up to 355 on request for other sizes**



## FUNCTION WITH A FREQUENCY OF 60

The CHT line motors can function with a frequency of 60 Hz. with differences in performances and electrical sizes as described on the table.

| PLATE VOLTAGE<br>50 Hz | PLATE VOLTAGE<br>60 Hz | NOMINAL<br>POWER | NOMINAL<br>CURRENT | NOMINAL<br>TORQUE | R.P.M. | STARTING<br>CURRENT | STARTING<br>TORQUE | MAX TORQUE |
|------------------------|------------------------|------------------|--------------------|-------------------|--------|---------------------|--------------------|------------|
| 230 +/- 10%            | 220 +/- 5%             | 1                | 1                  | 0.83              | 1.2    | 0.83                | 0.83               | 0.83       |
| 230 +/- 10%            | 230 +/- 10%            | 1                | 0.95               | 0.83              | 1.2    | 0.83                | 0.83               | 0.83       |
| 230 +/- 10%            | 254 +/- 5%             | 1.15             | 1.02               | 0.96              | 1.2    | 0.93                | 0.93               | 0.93       |
| 230 +/- 10%            | 277 +/- 5%             | 1.2              | 1                  | 1                 | 1.2    | 1                   | 1                  | 1          |
| 400 +/- 10%            | 380 +/- 5%             | 1                | 1                  | 0.83              | 1.2    | 0.83                | 0.83               | 0.83       |
| 400 +/- 10%            | 400 +/- 10%            | 1                | 0.95               | 0.83              | 1.2    | 0.83                | 0.83               | 0.83       |
| 400 +/- 10%            | 440 +/- 5%             | 1.16             | 1.02               | 0.96              | 1.2    | 0.93                | 0.93               | 0.93       |
| 400 +/- 10%            | 460 +/- 10%            | 1.15             | 1                  | 0.96              | 1.2    | 0.96                | 0.96               | 0.96       |
| 400 +/- 10%            | 480 +/- 5%             | 1.2              | 1                  | 1                 | 1.2    | 1                   | 1                  | 1          |



## FEEDING VOLTAGE

The CHT line motors are made to be used on the European net system Volt 230/400 +/- 10% - Hz 50 and Volt 400/690 +/- 10% - Hz 50

This means that the same motor can function on the following stili existing nets:

- 220/380 Volt +/- 5%
- 230/400 Volt +/- 10%
- 240/415 Volt +/- 5%
- 380/660 Volt +/- 5%
- 400/690 Volt +/- 10%
- 415/720 Volt +/- 5%

corresponding to the requirements requested by the rules of numerous countries.





# ELECTRIC MOTORS 2/4/6 POLES

## IE 1

| TYPE   |    | POLES | POWER<br>Kw | VOLTAGE<br>V | CURRENT<br>400 V | TORQUE<br>N/m | EFFICIENCY<br>% | FACTOR<br>COS.φ | WEIGHT<br>Kg. |
|--------|----|-------|-------------|--------------|------------------|---------------|-----------------|-----------------|---------------|
| CHT 56 | B2 | 2     | 0.13        | 230/400      | 0.40             | 0.42          | 62.00           | 0.69            | 3.20          |
| CHT 56 | B4 | 4     | 0.09        | 230/400      | 0.43             | 0.64          | 50.00           | 0.61            | 3.20          |
| CHT 63 | A2 | 2     | 0.18        | 230/400      | 0.55             | 0.63          | 63.00           | 0.75            | 4.00          |
| CHT 63 | B2 | 2     | 0.25        | 230/400      | 0.71             | 0.88          | 65.00           | 0.78            | 4.40          |
| CHT 63 | C2 | 2     | 0.37        | 230/400      | 1.05             | 1.30          | 65.00           | 0.78            | 4.90          |
| CHT 63 | A4 | 4     | 0.12        | 230/400      | 0.47             | 0.85          | 57.00           | 0.64            | 3.90          |
| CHT 63 | B4 | 4     | 0.18        | 230/400      | 0.70             | 1.27          | 57.00           | 0.65            | 4.50          |
| CHT 63 | C4 | 4     | 0.22        | 230/400      | 0.92             | 1.77          | 59.00           | 0.67            | 4.80          |
| CHT 63 | B6 | 6     | 0.12        | 230/400      | 0.62             | 1.27          | 45.00           | 0.62            | 4.80          |
| CHT 71 | A2 | 2     | 0.37        | 230/400      | 0.97             | 1.29          | 70.00           | 0.79            | 5.60          |
| CHT 71 | B2 | 2     | 0.55        | 230/400      | 1.42             | 1.90          | 71.00           | 0.79            | 6.10          |
| CHT 71 | A4 | 4     | 0.25        | 230/400      | 0.84             | 1.77          | 60.00           | 0.62            | 5.60          |
| CHT 71 | B4 | 4     | 0.37        | 230/400      | 1.12             | 2.58          | 65.00           | 0.74            | 6.20          |
| CHT 71 | C4 | 4     | 0.55        | 230/400      | 1.61             | 3.81          | 66.00           | 0.75            | 7.00          |
| CHT 71 | A6 | 6     | 0.18        | 230/400      | 0.70             | 1.95          | 56.00           | 0.66            | 6.00          |
| CHT 71 | B6 | 6     | 0.25        | 230/400      | 0.87             | 2.65          | 59.00           | 0.70            | 6.50          |
| CHT 71 | C6 | 6     | 0.37        | 230/400      | 1.27             | 3.97          | 61.00           | 0.69            | 7.20          |
| CHT 80 | A4 | 4     | 0.55        | 230/400      | 1.59             | 3.81          | 67.00           | 0.75            | 8.90          |
| CHT 80 | A6 | 6     | 0.37        | 230/400      | 1.23             | 3.93          | 62.00           | 0.70            | 8.20          |
| CHT 80 | B6 | 6     | 0.55        | 230/400      | 1.65             | 5.80          | 67.00           | 0.72            | 9.90          |

## IE 2

|         |     |   |      |         |       |       |       |      |       |
|---------|-----|---|------|---------|-------|-------|-------|------|-------|
| CHT 80  | A2  | 2 | 0.75 | 230/400 | 1.75  | 2.51  | 77.40 | 0.80 | 9.10  |
| CHT 80  | B2  | 2 | 1.10 | 230/400 | 2.45  | 3.69  | 80.00 | 0.82 | 10.70 |
| CHT 80  | C2  | 2 | 1.50 | 230/400 | 3.12  | 4.97  | 82.70 | 0.83 | 13.00 |
| CHT 80  | B4  | 4 | 0.75 | 230/400 | 1.79  | 5.04  | 79.60 | 0.76 | 11.20 |
| CHT 80  | C4  | 4 | 1.10 | 230/400 | 2.72  | 7.39  | 81.40 | 0.71 | 13.50 |
| CHT 90  | S2  | 2 | 1.50 | 230/400 | 3.20  | 4.95  | 81.40 | 0.83 | 13.30 |
| CHT 90  | L2  | 2 | 2.20 | 230/400 | 4.54  | 7.38  | 83.20 | 0.84 | 16.00 |
| CHT 90  | S4  | 4 | 1.10 | 230/400 | 2.50  | 7.37  | 81.40 | 0.78 | 13.90 |
| CHT 90  | L4  | 4 | 1.50 | 230/400 | 3.31  | 10.09 | 82.80 | 0.79 | 16.20 |
| CHT 90  | M4  | 4 | 2.20 | 230/400 | 5.09  | 14.71 | 84.30 | 0.74 | 20.50 |
| CHT 90  | S6  | 6 | 0.75 | 230/400 | 2.01  | 7.66  | 76.00 | 0.71 | 13.00 |
| CHT 90  | L6  | 6 | 1.10 | 230/400 | 2.82  | 11.23 | 78.10 | 0.72 | 16.30 |
| CHT 100 | LA2 | 2 | 3.00 | 230/400 | 5.88  | 10.05 | 84.60 | 0.87 | 23.00 |
| CHT 100 | LA4 | 4 | 2.20 | 230/400 | 4.83  | 14.70 | 84.30 | 0.78 | 22.70 |
| CHT 100 | LB4 | 4 | 3.00 | 230/400 | 6.33  | 20.00 | 85.50 | 0.80 | 26.50 |
| CHT 100 | LA6 | 6 | 1.50 | 230/400 | 3.71  | 15.20 | 80.00 | 0.73 | 22.00 |
| CHT 112 | M2  | 2 | 4.00 | 230/400 | 7.56  | 13.13 | 86.00 | 0.89 | 27.00 |
| CHT 112 | M4  | 4 | 4.00 | 230/400 | 8.23  | 26.60 | 86.60 | 0.81 | 32.50 |
| CHT 112 | L4  | 4 | 5.50 | 230/400 | 11.25 | 36.57 | 87.90 | 0.80 | 39.00 |
| CHT 112 | M6  | 6 | 2.20 | 230/400 | 5.17  | 22.30 | 81.80 | 0.75 | 29.50 |
| CHT 132 | SA2 | 2 | 5.50 | 230/400 | 10.25 | 18.00 | 87.20 | 0.89 | 40.20 |
| CHT 132 | SB2 | 2 | 7.50 | 230/400 | 13.80 | 24.47 | 88.10 | 0.89 | 45.00 |
| CHT 132 | S4  | 4 | 5.50 | 230/400 | 11.00 | 36.22 | 87.90 | 0.83 | 44.00 |
| CHT 132 | M4  | 4 | 7.50 | 230/400 | 14.50 | 50.00 | 88.70 | 0.84 | 53.50 |
| CHT 132 | M6  | 6 | 4.00 | 230/400 | 8.86  | 40.42 | 84.60 | 0.77 | 45.00 |
| CHT 132 | S6  | 6 | 3.00 | 230/400 | 6.84  | 30.48 | 83.30 | 0.76 | 36.10 |



## IE 3

## IE 3 EFFICIENCY MOTORS

From January 2017, the third phase of the regulation (CE) n° 640/2009 came into force, therefore, starting from this date, the electric motors sold in the European Economic Market at 2, 4 and 6 poles with power included between KW 0,75 and KW 375 Kw must have minimum efficiency IE3, alternatively IE2, if supplied with inverter or destined for countries not belonging to the aforementioned market.

With the entry into force of the third phase, it will be the responsibility of the purchaser to make sure that the IE2 motors, which are included in the regulations, are used as indicated above.

| TYPE        | POLES | POWER<br>Kw | VOLTAGE<br>V | CURRENT<br>400 V | TORQUE<br>N/m | EFFICIENCY<br>% | FACTOR<br>COS.φ | WEIGHT<br>Kg. |
|-------------|-------|-------------|--------------|------------------|---------------|-----------------|-----------------|---------------|
| CHT 80 A2   | 2     | 0.75        | 230/400      | 1.66             | 2.51          | 80.7            | 0.81            | 8.5/8.4       |
| CHT 80 B2   | 2     | 1.1         | 230/400      | 2.31             | 3.69          | 82.7            | 0.83            | 10.3/10.2     |
| CHT 90 S2   | 2     | 1.5         | 230/400      | 3.14             | 5.02          | 84.2            | 0.82            | 14.4/14.3     |
| CHT 90 L2   | 2     | 2.2         | 230/400      | 4.51             | 7.38          | 85.9            | 0.82            | 16.3/16.1     |
| CHT 100 LA2 | 2     | 3           | 230/400      | 5.59             | 10.05         | 87.1            | 0.89            | 24.1/24.0     |
| CHT 112 M2  | 2     | 4           | 230/400      | 7.2              | 13.13         | 88.1            | 0.91            | 30.2/30.1     |
| CHT 132 SA2 | 2     | 5.5         | 230/400      | 10               | 18.08         | 89.2            | 0.89            | 44.2/44.00    |
| CHT 132 SB2 | 2     | 7.5         | 230/400      | 13.4             | 24.61         | 90.1            | 0.90            | 52.0/52.8     |
| CHT 80 B4   | 4     | 0.75        | 230/400      | 1.9              | 5.04          | 82.2            | 0.69            | 12.1/11.3     |
| CHT 90 S4   | 4     | 1.1         | 230/400      | 2.59             | 7.37          | 84.1            | 0.73            | 15.0/15.0     |
| CHT 90 L4   | 4     | 1.5         | 230/400      | 3.43             | 10.09         | 85.3            | 0.74            | 18.0/18.0     |
| CHT 100 LA4 | 4     | 2.2         | 230/400      | 4.58             | 14.69         | 86.7            | 0.80            | 23.5/23.0     |
| CHT 100 LB4 | 4     | 3           | 230/400      | 6.33             | 20.03         | 87.7            | 0.78            | 28.2/28.0     |
| CHT 112 M4  | 4     | 4           | 230/400      | 7.95             | 26.62         | 88.6            | 0.82            | 32.3/32.0     |
| CHT 132 S4  | 4     | 5.5         | 230/400      | 10.5             | 36.73         | 89.6            | 0.84            | 48.0/47.5     |
| CHT 132 M4  | 4     | 7.5         | 230/400      | 14.3             | 50.08         | 90.4            | 0.84            | 58.2/58.0     |
| CHT 90 S6   | 6     | 0.75        | 230/400      | 2.05             | 7.66          | 78.9            | 0.67            | 14.1/14.0     |
| CHT 10 L6   | 6     | 1.1         | 230/400      | 2.93             | 11.23         | 81.0            | 0.67            | 17.8/16.2     |
| CHT 100 LA6 | 6     | 1.5         | 230/400      | 3.75             | 15.24         | 82.5            | 0.70            | 22.2/22.0     |
| CHT 112 M6  | 6     | 2.2         | 230/400      | 5.54             | 22.35         | 84.3            | 0.68            | 27.0/26.0     |
| CHT 132 S6  | 6     | 3           | 230/400      | 6.84             | 30.48         | 86.8            | 0.74            | 40.0/39.0     |
| CHT 132 MA6 | 6     | 4           | 230/400      | 8.99             | 40.42         | 86.8            | 0.74            | 47.5/47.2     |
| CHT 132 MB6 | 6     | 5.5         | 230/400      | 12.7             | 55.58         | 88.0            | 0.71            | 55.4/54.0     |

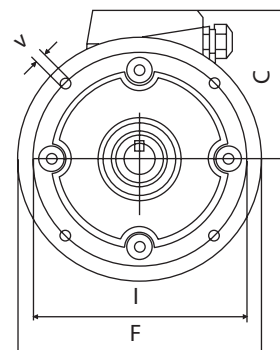
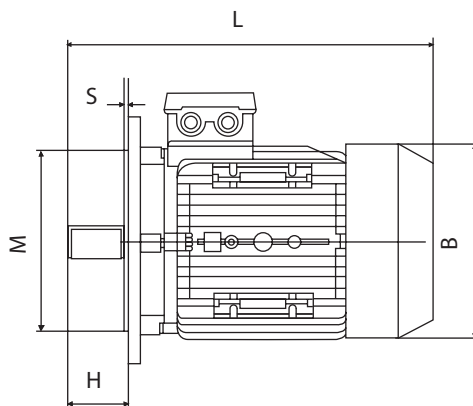
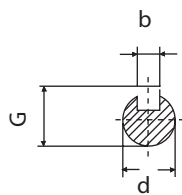
\* Volt 400/690 standard from 160 up to 355 on request for other sizes.

\* **SIEMENS** motor available on request

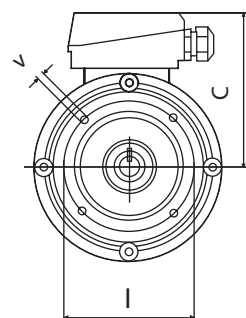
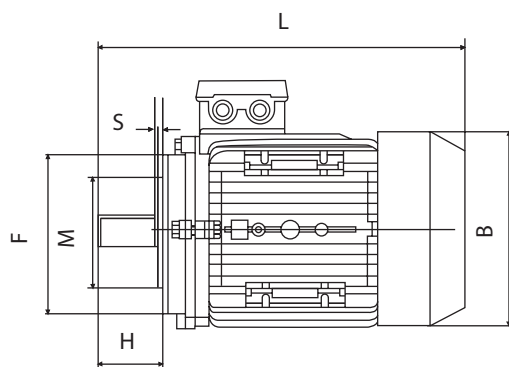
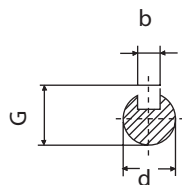
\* **MGM** brake motor available on request



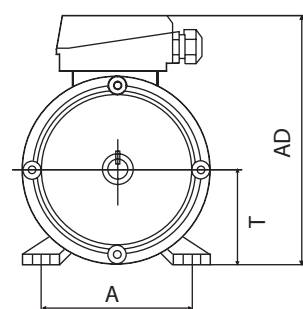
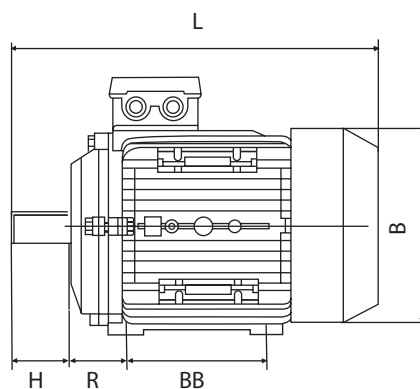
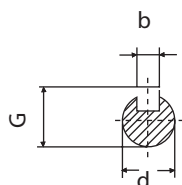
## B5



## B14



## B3





## ELECTRIC MOTORS THREE-PHASE - DIMENSIONS

| TYPE     | MOUNTING DIMENSIONS (mm) |    |    |      |     |     |     |    |     |     |     |     |     |     |    | DIMENSIONS |     |     |     |     |     |     |
|----------|--------------------------|----|----|------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|----|------------|-----|-----|-----|-----|-----|-----|
|          | B5                       |    |    |      | B14 |     |     |    |     | B3  |     |     |     |     |    |            |     |     |     |     |     |     |
|          | d                        | H  | b  | G    | I   | M   | F   | V  | S   | I   | M   | F   | V   | S   | R  | BB         | A   | T   | AD  | B   | C   | L   |
| 56       | 9                        | 20 | 3  | 10.2 | 100 | 80  | 120 | 7  | 3.0 | 65  | 50  | 80  | M5  | 2.5 | 36 | 71         | 90  | 56  | 156 | 110 | 100 | 195 |
| 63       | 11                       | 23 | 4  | 12.5 | 115 | 95  | 140 | 10 | 3.0 | 75  | 60  | 90  | M5  | 2.5 | 40 | 80         | 100 | 63  | 173 | 123 | 110 | 215 |
| 71       | 14                       | 30 | 5  | 16   | 130 | 110 | 160 | 10 | 3.5 | 85  | 70  | 105 | M6  | 2.5 | 45 | 90         | 112 | 71  | 188 | 138 | 117 | 255 |
| 80       | 19                       | 40 | 6  | 21.5 | 165 | 130 | 200 | 12 | 3.5 | 100 | 80  | 120 | M6  | 3.0 | 50 | 100        | 125 | 80  | 217 | 155 | 137 | 290 |
| 90S      | 24                       | 50 | 8  | 27   | 165 | 130 | 200 | 12 | 3.5 | 115 | 95  | 140 | M8  | 3.0 | 56 | 100        | 140 | 90  | 235 | 176 | 145 | 310 |
| 90L/90LL | 24                       | 50 | 8  | 27   | 165 | 130 | 200 | 12 | 3.5 | 115 | 95  | 140 | M8  | 3.0 | 56 | 125        | 140 | 90  | 235 | 176 | 145 | 335 |
| 100L     | 28                       | 60 | 8  | 31   | 215 | 180 | 250 | 15 | 4.0 | 130 | 110 | 160 | M8  | 3.5 | 63 | 140        | 160 | 100 | 252 | 197 | 152 | 386 |
| 112M     | 28                       | 60 | 8  | 31   | 215 | 180 | 250 | 15 | 4.0 | 130 | 110 | 160 | M8  | 3.5 | 70 | 140        | 190 | 112 | 292 | 220 | 180 | 395 |
| 132S     | 38                       | 80 | 10 | 41   | 265 | 230 | 300 | 15 | 4.0 | 165 | 130 | 200 | M10 | 4.0 | 89 | 140        | 216 | 132 | 325 | 257 | 195 | 436 |
| 132M     | 38                       | 80 | 10 | 41   | 265 | 230 | 300 | 15 | 4.0 | 165 | 130 | 200 | M10 | 4.0 | 89 | 178        | 216 | 132 | 325 | 257 | 195 | 475 |

The dimensions are indicative.



## IE 1 ALUMINUM

Δ/Y 230/400V-50Hz (£112) Δ 400V-50Hz ( $\geq 132$ )

1. Cl.F - IP55 - IC411

**Duty S1** ( $P_N < 0,75\text{kW}$ ) - **S3** 70% ( $P_N \geq 0,75\text{kW}$ )

Aluminum casing

Efficiency IE1 (IEC60034-30, IEC60034-2-1)

2 POLES 3000 min<sup>-1</sup>

| P <sub>N</sub><br>[kW] | Motor             | Poles    | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | η<br>100% | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|-------------------|----------|----------------------------------------|------------------------|-----------------------|-------|-----------|--------------------------------|----------------------------------|--------------------------------|----------------------------------------|-----------|
| 11                     | <b>CHT 132 MC</b> | <b>2</b> | 2800                                   | 37,5                   | 20,5                  | 0,88  | 88,0      | 2,0                            | 2,2                              | 7,0                            | 0,017                                  | 65        |
| 11                     | <b>CHT 160 M</b>  | <b>2</b> | 2800                                   | 37,5                   | 20,4                  | 0,88  | 88,4      | 2,0                            | 2,3                              | 7,0                            | 0,038                                  | 104       |
| 15                     | <b>CHT 160 L</b>  | <b>2</b> | 2800                                   | 51,2                   | 27,5                  | 0,88  | 89,4      | 2,0                            | 2,3                              | 7,0                            | 0,045                                  | 116       |
| 18,5                   | <b>CHT 160 LB</b> | <b>2</b> | 2800                                   | 63,1                   | 33,3                  | 0,89  | 90,0      | 2,0                            | 2,2                              | 7,0                            | 0,055                                  | 130       |

4 POLES 1500 min<sup>-1</sup>

| P <sub>N</sub><br>[kW] | Motor             | Poles    | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | η<br>100% | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|-------------------|----------|----------------------------------------|------------------------|-----------------------|-------|-----------|--------------------------------|----------------------------------|--------------------------------|----------------------------------------|-----------|
| 11                     | <b>CHT 132 MC</b> | <b>4</b> | 1440                                   | 73,0                   | 21,5                  | 0,84  | 88,0      | 2,2                            | 2,3                              | 7,0                            | 0,044                                  | 80        |
| 11                     | <b>CHT 160 M</b>  | <b>4</b> | 1440                                   | 73,0                   | 21,4                  | 0,84  | 88,4      | 2,2                            | 2,3                              | 7,0                            | 0,075                                  | 107       |
| 15                     | <b>CHT 160 L</b>  | <b>4</b> | 1440                                   | 99,5                   | 28,8                  | 0,84  | 89,4      | 2,2                            | 2,3                              | 7,0                            | 0,092                                  | 128       |

6 POLES 1000 min<sup>-1</sup>

| P <sub>N</sub><br>[kW] | Motor             | Poles    | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | η<br>100% | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|-------------------|----------|----------------------------------------|------------------------|-----------------------|-------|-----------|--------------------------------|----------------------------------|--------------------------------|----------------------------------------|-----------|
| 5,5                    | <b>CHT 132 MB</b> | <b>6</b> | 960                                    | 54,7                   | 11,9                  | 0,78  | 85,3      | 2,0                            | 2,2                              | 6,5                            | 0,046                                  | 64        |
| 7,5                    | <b>CHT 160 M</b>  | <b>6</b> | 940                                    | 76,2                   | 16,1                  | 0,78  | 86,0      | 2,0                            | 2,0                              | 6,5                            | 0,088                                  | 108       |
| 11                     | <b>CHT 160 L</b>  | <b>6</b> | 940                                    | 111,8                  | 23,4                  | 0,78  | 87,0      | 2,0                            | 2,0                              | 6,5                            | 0,116                                  | 126       |





# ELECTRIC MOTORS 2/4/6 POLES IE1 CAST IRON

## IE 1 CAST IRON

Δ/Y 400/690 V-50Hz

1. Cl.F - IP54 - IC411

Duty S3 70%

Cast iron casing

Efficiency IE1 (IEC60034-30, IEC60034-2-1)

### 2 POLES 3000 min<sup>-1</sup>

| P <sub>N</sub><br>[kW] | Motor      | Poles | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | η<br>100% | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|------------|-------|----------------------------------------|------------------------|-----------------------|-------|-----------|--------------------------------|----------------------------------|--------------------------------|----------------------------------------|-----------|
| 22                     | CHT 180 M  | 2     | 2940                                   | 71                     | 39                    | 0,90  | 89,9      | 2,1                            | 2,3                              | 7,0                            | 0,075                                  | 165       |
| 30                     | CHT 200 LA | 2     | 2950                                   | 97                     | 53                    | 0,90  | 90,7      | 2,0                            | 2,5                              | 6,9                            | 0,12                                   | 218       |
| 37                     | CHT 200 LB | 2     | 2950                                   | 120                    | 65                    | 0,90  | 91,2      | 2,0                            | 2,4                              | 7,2                            | 0,14                                   | 230       |
| 45                     | CHT 225 M  | 2     | 2960                                   | 145                    | 79                    | 0,90  | 91,7      | 2,2                            | 2,4                              | 7,3                            | 0,23                                   | 280       |
| 55                     | CHT 250 M  | 2     | 2965                                   | 177                    | 96                    | 0,90  | 92,1      | 2,0                            | 2,3                              | 7,1                            | 0,31                                   | 365       |
| 75                     | CHT 280 S  | 2     | 2970                                   | 241                    | 130                   | 0,90  | 92,7      | 2,2                            | 2,4                              | 7,3                            | 0,58                                   | 495       |
| 90                     | CHT 280 M  | 2     | 2970                                   | 289                    | 153                   | 0,91  | 93,0      | 2,0                            | 2,3                              | 7,0                            | 0,68                                   | 565       |
| 110                    | CHT 315 S  | 2     | 2975                                   | 353                    | 187                   | 0,91  | 93,3      | 1,9                            | 2,3                              | 7,1                            | 1,18                                   | 840       |
| 132                    | CHT 315 M  | 2     | 2975                                   | 424                    | 224                   | 0,91  | 93,5      | 1,8                            | 2,3                              | 6,6                            | 1,82                                   | 980       |
| 160                    | CHT 315 LA | 2     | 2975                                   | 514                    | 268                   | 0,92  | 93,8      | 1,9                            | 2,3                              | 6,7                            | 2,08                                   | 1055      |
| 200                    | CHT 315 LB | 2     | 2975                                   | 642                    | 334                   | 0,92  | 94,0      | 1,8                            | 2,3                              | 7,0                            | 2,38                                   | 1110      |

### 4 POLES 1500 min<sup>-1</sup>

| P <sub>N</sub><br>[kW] | Motor      | Poles | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | η<br>100% | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|------------|-------|----------------------------------------|------------------------|-----------------------|-------|-----------|--------------------------------|----------------------------------|--------------------------------|----------------------------------------|-----------|
| 18,5                   | CHT 180 M  | 4     | 1460                                   | 121                    | 35                    | 0,86  | 89,9      | 2,1                            | 2,8                              | 6,7                            | 0,14                                   | 164       |
| 22                     | CHT 180 L  | 4     | 1470                                   | 143                    | 41                    | 0,86  | 89,9      | 2,2                            | 3,0                              | 7,5                            | 0,16                                   | 182       |
| 30                     | CHT 200 L  | 4     | 1470                                   | 195                    | 56                    | 0,86  | 90,7      | 2,3                            | 2,5                              | 6,6                            | 0,26                                   | 244       |
| 37                     | CHT 225 S  | 4     | 1470                                   | 240                    | 67                    | 0,87  | 91,2      | 2,3                            | 2,6                              | 7,2                            | 0,41                                   | 258       |
| 45                     | CHT 225 M  | 4     | 1475                                   | 291                    | 81                    | 0,87  | 91,7      | 2,2                            | 2,4                              | 7,0                            | 0,47                                   | 290       |
| 55                     | CHT 250 M  | 4     | 1475                                   | 356                    | 99                    | 0,87  | 92,1      | 2,3                            | 2,6                              | 7,1                            | 0,66                                   | 388       |
| 75                     | CHT 280 S  | 4     | 1480                                   | 484                    | 134                   | 0,87  | 92,7      | 2,3                            | 2,5                              | 6,6                            | 1,12                                   | 510       |
| 90                     | CHT 280 M  | 4     | 1480                                   | 581                    | 161                   | 0,87  | 93,0      | 2,2                            | 2,4                              | 6,2                            | 1,46                                   | 606       |
| 110                    | CHT 315 S  | 4     | 1480                                   | 710                    | 193                   | 0,88  | 93,3      | 2,2                            | 2,4                              | 7,0                            | 3,11                                   | 910       |
| 132                    | CHT 315 M  | 4     | 1480                                   | 852                    | 232                   | 0,88  | 93,5      | 2,2                            | 2,5                              | 6,8                            | 3,62                                   | 985       |
| 160                    | CHT 315 LA | 4     | 1480                                   | 1032                   | 277                   | 0,89  | 93,8      | 2,1                            | 2,4                              | 6,6                            | 4,13                                   | 1056      |
| 200                    | CHT 315 LB | 4     | 1480                                   | 1291                   | 345                   | 0,89  | 94,0      | 2,2                            | 2,4                              | 6,9                            | 4,73                                   | 1128      |

### 6 POLES 1000 min<sup>-1</sup>

| P <sub>N</sub><br>[kW] | Motor      | Poles | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | η<br>100% | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|------------|-------|----------------------------------------|------------------------|-----------------------|-------|-----------|--------------------------------|----------------------------------|--------------------------------|----------------------------------------|-----------|
| 15                     | CHT 180 L  | 6     | 970                                    | 148                    | 31                    | 0,81  | 87,7      | 2,1                            | 2,2                              | 6,9                            | 0,16                                   | 178       |
| 18,5                   | CHT 200 LA | 6     | 980                                    | 180                    | 37                    | 0,81  | 88,6      | 2,1                            | 2,2                              | 6,7                            | 0,26                                   | 210       |
| 22                     | CHT 200 LB | 6     | 980                                    | 214                    | 43                    | 0,83  | 89,2      | 2,1                            | 2,2                              | 6,6                            | 0,28                                   | 227       |
| 30                     | CHT 225 M  | 6     | 980                                    | 292                    | 57                    | 0,84  | 90,2      | 2,0                            | 2,1                              | 6,7                            | 0,47                                   | 265       |
| 37                     | CHT 250 M  | 6     | 980                                    | 361                    | 68                    | 0,86  | 90,8      | 2,1                            | 2,2                              | 6,9                            | 0,66                                   | 370       |
| 45                     | CHT 280 S  | 6     | 980                                    | 439                    | 83                    | 0,86  | 91,4      | 2,1                            | 2,2                              | 6,5                            | 1,12                                   | 490       |
| 55                     | CHT 280 M  | 6     | 980                                    | 536                    | 100                   | 0,86  | 91,9      | 2,0                            | 2,1                              | 6,6                            | 1,46                                   | 540       |
| 75                     | CHT 315 S  | 6     | 985                                    | 727                    | 136                   | 0,86  | 92,6      | 2,0                            | 2,3                              | 6,8                            | 3,11                                   | 800       |
| 90                     | CHT 315 M  | 6     | 985                                    | 873                    | 163                   | 0,86  | 92,9      | 2,1                            | 2,2                              | 6,7                            | 3,62                                   | 920       |
| 110                    | CHT 315 LA | 6     | 985                                    | 1066                   | 198                   | 0,86  | 93,3      | 2,0                            | 2,1                              | 6,6                            | 4,13                                   | 960       |
| 132                    | CHT 315 LB | 6     | 985                                    | 1280                   | 234                   | 0,87  | 93,5      | 2,1                            | 2,3                              | 6,4                            | 4,73                                   | 1050      |

**IE 3 ALUMINUM** $\Delta/Y$  230/400V-50Hz (F112)  $\Delta$  400V-50Hz ( $\geq 132$ )

1. CL.F - IP55 - IC411

**Duty S1****Aluminum casing****Efficiency IE3** (IEC60034-30, IEC60034-2-1)**2 POLES 3000 min<sup>-1</sup>**

| P <sub>N</sub> |            | Motor         | Poles    | n <sub>N</sub>       | M <sub>N</sub> | I <sub>N</sub> | COS φ |      |      | η    |     |     | M <sub>S</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>S</sub> /I <sub>N</sub> | J <sub>0</sub>       | W    |
|----------------|------------|---------------|----------|----------------------|----------------|----------------|-------|------|------|------|-----|-----|--------------------------------|----------------------------------|--------------------------------|----------------------|------|
| [kW]           |            |               |          | [min <sup>-1</sup> ] | [Nm]           | [A]            | 100%  |      |      | 75%  | 50% |     |                                |                                  |                                | [kg m <sup>2</sup> ] | [kg] |
| 11             | <b>CHT</b> | <b>160 M</b>  | <b>2</b> | 2940                 | 35,7           | 19,6           | 0,89  | 91,2 | 91,4 | 90,1 | 2,2 | 2,3 | 7,9                            | 0,063                            | 108                            |                      |      |
| 15             | <b>CHT</b> | <b>160 L</b>  | <b>2</b> | 2935                 | 48,8           | 26,5           | 0,89  | 91,9 | 92,2 | 91,7 | 2,2 | 2,3 | 8,0                            | 0,073                            | 119                            |                      |      |
| 18,5           | <b>CHT</b> | <b>160 LB</b> | <b>2</b> | 2940                 | 60,1           | 32,4           | 0,89  | 92,5 | 92,9 | 92,3 | 2,2 | 2,3 | 8,1                            | 0,084                            | 134                            |                      |      |

**4 POLES 1500 min<sup>-1</sup>**

| P <sub>N</sub> |                  | Motor    | Poles | n <sub>N</sub>       | M <sub>N</sub> | I <sub>N</sub> | COS φ |      |      | η   | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | J <sub>0</sub> | W    |
|----------------|------------------|----------|-------|----------------------|----------------|----------------|-------|------|------|-----|--------------------------------|----------------------------------|--------------------------------|----------------|------|
| [kW]           |                  |          |       | [min <sup>-1</sup> ] | [Nm]           | [A]            | 100%  | 75%  | 50%  |     |                                |                                  |                                | [kg m²]        | [kg] |
| 11             | <b>CHT 160 M</b> | <b>4</b> | 1460  | 72,0                 | 20,7           | 0,84           | 91,4  | 91,5 | 91,5 | 2,2 | 2,3                            | 7,5                              | 0,096                          | 111            |      |
| 15             | <b>CHT 160 L</b> | <b>4</b> | 1460  | 98,1                 | 27,7           | 0,85           | 92,1  | 92,3 | 92,1 | 2,2 | 2,3                            | 7,5                              | 0,133                          | 132            |      |

**6 POLES 1000 min<sup>-1</sup>**

| P <sub>N</sub> |                  | Motor    | Poles | n <sub>N</sub>       | M <sub>N</sub> | I <sub>N</sub> | COS φ |      |      | η   | M <sub>S</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>S</sub> /I <sub>N</sub> | J <sub>0</sub> | W    |
|----------------|------------------|----------|-------|----------------------|----------------|----------------|-------|------|------|-----|--------------------------------|----------------------------------|--------------------------------|----------------|------|
| [kW]           |                  |          |       | [min <sup>-1</sup> ] | [Nm]           | [A]            | 100%  | 75%  | 50%  |     |                                |                                  |                                | [kg m²]        | [kg] |
| 7,5            | <b>CHT 160 M</b> | <b>6</b> | 970   | 73,8                 | 15,8           | 0,77           | 89,1  | 89,3 | 89,0 | 2,1 | 2,1                            | 6,7                              | 0,107                          | 111            |      |
| 15             | <b>CHT 160 L</b> | <b>6</b> | 970   | 108,3                | 22,5           | 0,78           | 90,3  | 90,4 | 90,0 | 2,1 | 2,1                            | 7,2                              | 0,146                          | 132            |      |



# ELECTRIC MOTORS 2/4/6 POLES IE3 CAST IRON

## IE 3 CAST IRON

Δ/Y 400/690 V-50Hz

1. Cl.F - IP54 - IC411

Duty S1

Cast iron casing

Efficiency IE3 (IEC60034-30, IEC60034-2-1)

### 2 POLES 3000 min<sup>-1</sup>

| P <sub>N</sub><br>[kW] | Motor      | Poles | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | η    |      |      | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|------------|-------|----------------------------------------|------------------------|-----------------------|-------|------|------|------|--------------------------------|----------------------------------|--------------------------------|----------------------------------------|-----------|
|                        |            |       |                                        |                        |                       |       | 100% | 75%  | 50%  |                                |                                  |                                |                                        |           |
| 22                     | CHT 180 M  | 2     | 2955                                   | 71                     | 38                    | 0,90  | 92,7 | 92,7 | 90,8 | 2,2                            | 2,3                              | 8,2                            | 0,098                                  | 182       |
| 30                     | CHT 200 LA | 2     | 2960                                   | 97                     | 52                    | 0,89  | 93,3 | 93,3 | 91,4 | 2,2                            | 2,3                              | 7,5                            | 0,14                                   | 250       |
| 37                     | CHT 200 LB | 2     | 2960                                   | 119                    | 63                    | 0,91  | 93,7 | 93,7 | 91,8 | 2,2                            | 2,3                              | 7,5                            | 0,17                                   | 259       |
| 45                     | CHT 225 M  | 2     | 2965                                   | 145                    | 79                    | 0,88  | 94,0 | 94,0 | 92,1 | 2,2                            | 2,3                              | 7,6                            | 0,28                                   | 324       |
| 55                     | CHT 250 M  | 2     | 2970                                   | 177                    | 95                    | 0,89  | 94,3 | 94,3 | 92,4 | 2,2                            | 2,3                              | 7,6                            | 0,40                                   | 426       |
| 75                     | CHT 280 S  | 2     | 2975                                   | 241                    | 127                   | 0,90  | 94,7 | 94,7 | 92,8 | 2,0                            | 2,3                              | 6,9                            | 0,65                                   | 533       |
| 90                     | CHT 280 M  | 2     | 2975                                   | 289                    | 154                   | 0,89  | 95,0 | 95,0 | 93,1 | 2,0                            | 2,3                              | 7,0                            | 0,75                                   | 812       |
| 110                    | CHT 315 S  | 2     | 2975                                   | 353                    | 185                   | 0,90  | 95,2 | 95,2 | 93,3 | 2,0                            | 2,2                              | 7,1                            | 1,45                                   | 905       |
| 132                    | CHT 315 M  | 2     | 2975                                   | 424                    | 222                   | 0,90  | 95,4 | 95,4 | 93,5 | 2,0                            | 2,2                              | 7,1                            | 2,10                                   | 995       |
| 160                    | CHT 315 LA | 2     | 2980                                   | 513                    | 268                   | 0,90  | 95,6 | 95,6 | 93,7 | 2,0                            | 2,2                              | 7,1                            | 2,40                                   | 1119      |
| 200                    | CHT 315 LB | 2     | 2980                                   | 641                    | 331                   | 0,91  | 95,8 | 95,8 | 93,9 | 2,0                            | 2,2                              | 7,1                            | 2,60                                   | 1150      |

### 4 POLES 1500 min<sup>-1</sup>

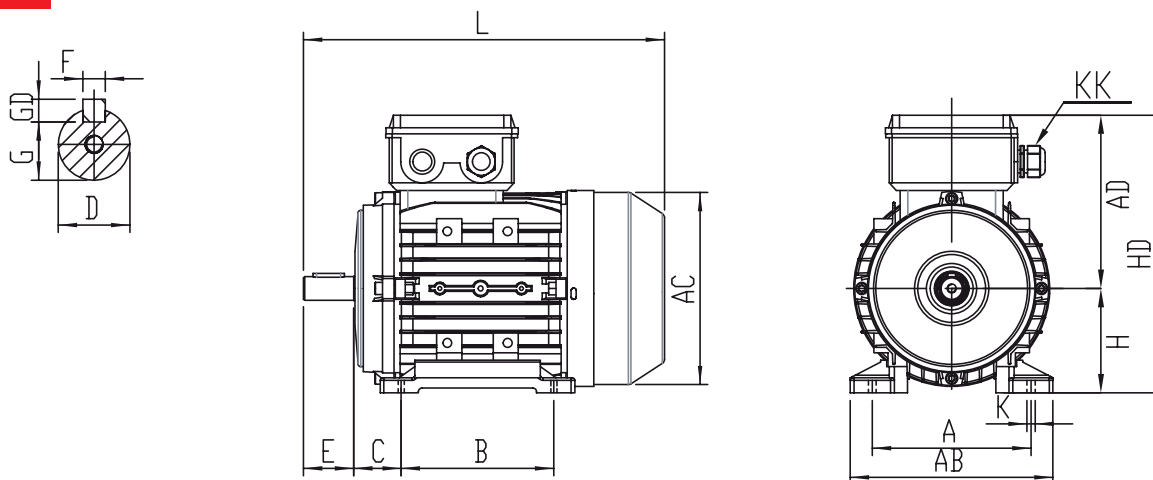
| P <sub>N</sub><br>[kW] | Motor      | Poles | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | η    |      |      | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|------------|-------|----------------------------------------|------------------------|-----------------------|-------|------|------|------|--------------------------------|----------------------------------|--------------------------------|----------------------------------------|-----------|
|                        |            |       |                                        |                        |                       |       | 100% | 75%  | 50%  |                                |                                  |                                |                                        |           |
| 18,5                   | CHT 180 M  | 4     | 1470                                   | 120                    | 34                    | 0,84  | 92,6 | 92,6 | 90,7 | 2,2                            | 2,3                              | 7,5                            | 0,14                                   | 175       |
| 22                     | CHT 180 L  | 4     | 1470                                   | 143                    | 40                    | 0,85  | 93,0 | 93,0 | 91,1 | 2,2                            | 2,3                              | 7,7                            | 0,16                                   | 209       |
| 30                     | CHT 200 L  | 4     | 1475                                   | 194                    | 54                    | 0,86  | 93,6 | 93,6 | 91,7 | 2,2                            | 2,3                              | 7,8                            | 0,26                                   | 275       |
| 37                     | CHT 225 S  | 4     | 1485                                   | 238                    | 66                    | 0,86  | 93,9 | 93,9 | 92,0 | 2,2                            | 2,3                              | 7,2                            | 0,41                                   | 324       |
| 45                     | CHT 225 M  | 4     | 1485                                   | 289                    | 79                    | 0,87  | 94,2 | 94,2 | 92,3 | 2,2                            | 2,3                              | 7,3                            | 0,47                                   | 359       |
| 55                     | CHT 250 M  | 4     | 1485                                   | 354                    | 97                    | 0,87  | 94,6 | 94,6 | 92,7 | 2,2                            | 2,3                              | 7,4                            | 0,67                                   | 433       |
| 75                     | CHT 280 S  | 4     | 1485                                   | 482                    | 129                   | 0,88  | 95,0 | 95,0 | 93,1 | 2,2                            | 2,3                              | 7,4                            | 1,13                                   | 568       |
| 90                     | CHT 280 M  | 4     | 1485                                   | 579                    | 157                   | 0,87  | 95,2 | 95,2 | 93,3 | 2,2                            | 2,3                              | 6,7                            | 1,47                                   | 649       |
| 110                    | CHT 315 S  | 4     | 1485                                   | 707                    | 189                   | 0,88  | 95,4 | 95,4 | 93,5 | 2,2                            | 2,2                              | 6,9                            | 3,15                                   | 935       |
| 132                    | CHT 315 M  | 4     | 1485                                   | 849                    | 226                   | 0,88  | 95,6 | 95,6 | 93,7 | 2,2                            | 2,2                              | 6,9                            | 3,65                                   | 1020      |
| 160                    | CHT 315 LA | 4     | 1485                                   | 1029                   | 274                   | 0,89  | 95,8 | 95,8 | 93,9 | 2,2                            | 2,2                              | 6,9                            | 4,15                                   | 1090      |
| 200                    | CHT 315 LB | 4     | 1490                                   | 1282                   | 342                   | 0,89  | 96,0 | 96,0 | 94,1 | 2,2                            | 2,2                              | 6,9                            | 4,75                                   | 1233      |

### 6 POLES 1000 min<sup>-1</sup>

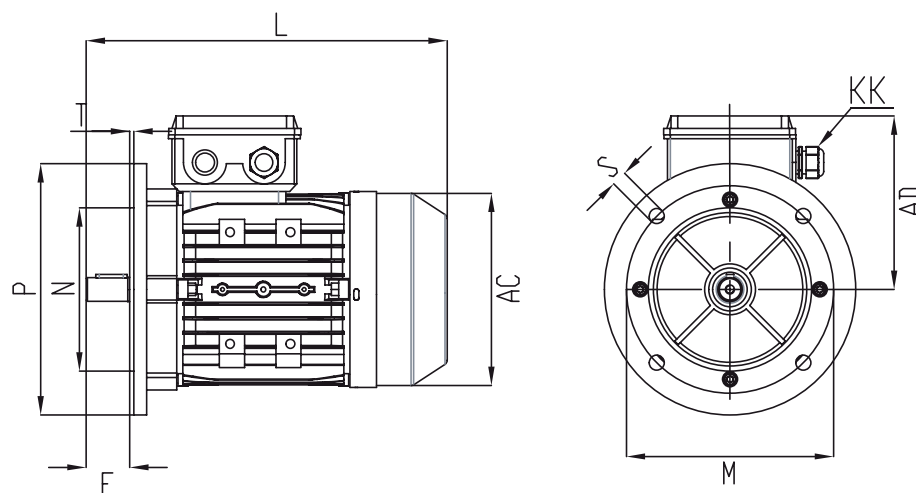
| P <sub>N</sub><br>[kW] | Motor      | Poles | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | η    |      |      | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|------------|-------|----------------------------------------|------------------------|-----------------------|-------|------|------|------|--------------------------------|----------------------------------|--------------------------------|----------------------------------------|-----------|
|                        |            |       |                                        |                        |                       |       | 100% | 75%  | 50%  |                                |                                  |                                |                                        |           |
| 15                     | CHT 180 L  | 6     | 980                                    | 146                    | 31                    | 0,81  | 91,2 | 91,2 | 89,4 | 2,0                            | 2,1                              | 7,2                            | 0,21                                   | 193       |
| 18,5                   | CHT 200 LA | 6     | 980                                    | 180                    | 36                    | 0,81  | 91,7 | 91,7 | 89,9 | 2,1                            | 2,1                              | 7,2                            | 0,32                                   | 230       |
| 22                     | CHT 200 LB | 6     | 980                                    | 214                    | 41                    | 0,83  | 92,2 | 92,2 | 90,4 | 2,1                            | 2,1                              | 7,3                            | 0,36                                   | 243       |
| 30                     | CHT 225 M  | 6     | 980                                    | 292                    | 56                    | 0,84  | 92,9 | 92,9 | 91,0 | 2,0                            | 2,1                              | 7,1                            | 0,55                                   | 302       |
| 37                     | CHT 250 M  | 6     | 985                                    | 359                    | 68                    | 0,84  | 93,3 | 93,3 | 91,4 | 2,1                            | 2,1                              | 7,1                            | 0,85                                   | 390       |
| 45                     | CHT 280 S  | 6     | 985                                    | 436                    | 82                    | 0,85  | 93,7 | 93,7 | 91,8 | 2,0                            | 2,1                              | 7,2                            | 1,40                                   | 505       |
| 55                     | CHT 280 M  | 6     | 985                                    | 533                    | 99                    | 0,85  | 94,1 | 94,1 | 92,2 | 2,0                            | 2,1                              | 7,2                            | 1,70                                   | 570       |
| 75                     | CHT 315 S  | 6     | 985                                    | 727                    | 135                   | 0,85  | 94,6 | 94,6 | 92,7 | 2,0                            | 2,0                              | 6,7                            | 4,15                                   | 815       |
| 90                     | CHT 315 M  | 6     | 985                                    | 873                    | 161                   | 0,85  | 94,9 | 94,9 | 93,0 | 2,0                            | 2,0                              | 6,7                            | 4,80                                   | 955       |
| 110                    | CHT 315 LA | 6     | 985                                    | 1066                   | 194                   | 0,86  | 95,1 | 95,1 | 93,2 | 2,0                            | 2,0                              | 6,7                            | 5,48                                   | 1015      |
| 132                    | CHT 315 LB | 6     | 985                                    | 1280                   | 232                   | 0,86  | 95,4 | 95,4 | 93,5 | 2,0                            | 2,0                              | 6,7                            | 6,15                                   | 1120      |



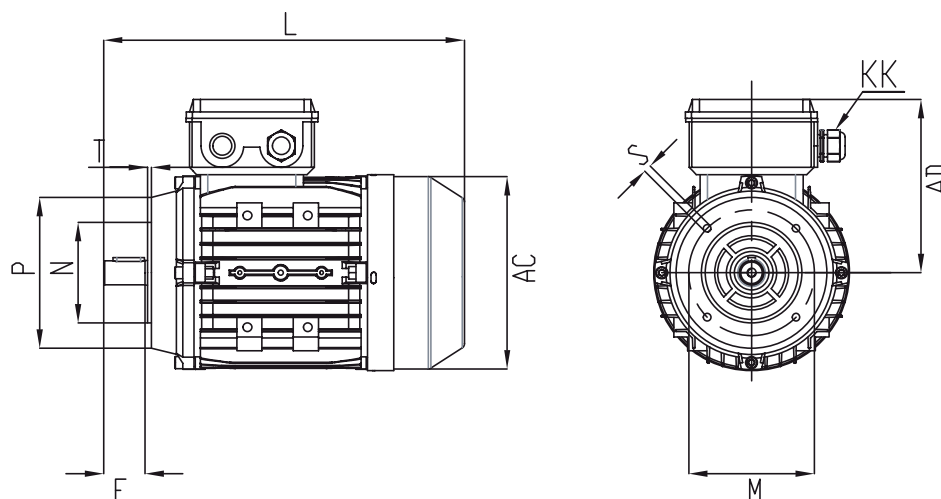
## B3



## B5



## B14





# ELECTRIC MOTORS - DIMENSIONS

| Size      | Bearings |          | CableGlands | Terminals | IM B5 |        |     |        |   | IM B14 |        |     |       |     |
|-----------|----------|----------|-------------|-----------|-------|--------|-----|--------|---|--------|--------|-----|-------|-----|
|           | DE       | NDE      | KK          | n. x...   | M     | N      | P   | n x S  | T | M      | N      | P   | n x S | T   |
| 132 M     | 6308 2RZ | 6308 2RZ | M25x1.5     | 6xM5      | 265   | 230 j6 | 300 | 4x14,5 | 4 | 165    | 130 j6 | 200 | 4xM10 | 3,5 |
| 160 M/L   | 6309 2RZ | 6308 2RZ | M32x1.5     | 6xM6      | 300   | 250 h6 | 352 | 4x18,5 | 5 | 215    | 180 j6 | 250 | 4xM12 | 4   |
| 180 M/L   | 6311 2RZ | 6311 2RZ | 2*M40x1.5   | 6xM6      | 300   | 250 h6 | 350 | 4x18,5 | 5 | -      | -      | -   | -     | -   |
| 200       | 6312 2RZ | 6312 2RZ | 2*M50x1.5   | 6xM8      | 350   | 300 h6 | 400 | 4x18,5 | 5 | -      | -      | -   | -     | -   |
| 225 S/M   | 6213 2RZ | 6213 2RZ | 2*M50x1.5   | 6xM8      | 400   | 350 h6 | 450 | 8x18,5 | 5 | -      | -      | -   | -     | -   |
| 250       | 6314 2RZ | 6314 2RZ | 2*M63x1.5   | 6xM10     | 500   | 450 h6 | 550 | 8x18,5 | 5 | -      | -      | -   | -     | -   |
| 280 S/M   | 6317 2RZ | 6317 2RZ | 2*M63x1.5   | 6xM10     | 500   | 450 h6 | 550 | 8x18,5 | 5 | -      | -      | -   | -     | -   |
| 315 S/M/L | 6319 2RZ | 6319 2RZ | 2*M63x1.5   | 6xM16     | 600   | 550 h6 | 660 | 8x24   | 6 | -      | -      | -   | -     | -   |

| Size         | IM B3 |     |      |     |     |     |     | Shaft     |     |    |      |    | General |     |      |
|--------------|-------|-----|------|-----|-----|-----|-----|-----------|-----|----|------|----|---------|-----|------|
|              | A     | AB  | K    | B   | C   | H   | HD  | D         | E   | F  | G    | GD | AC      | AD  | L    |
| 132 M        | 216   | 255 | 12   | 178 | 89  | 132 | 325 | 38 k6 M12 | 80  | 10 | 33   | 8  | 260     | 193 | 510  |
| 160 M        | 254   | 295 | 14,5 | 210 | 108 | 160 | 395 | 42 k6 M16 | 110 | 12 | 37   | 8  | 315     | 235 | 610  |
| 160 L        |       |     |      | 254 |     |     |     |           |     |    |      |    |         |     |      |
| 180 M        | 279   | 355 | 14,5 | 241 | 121 | 180 | 460 | 48 k6 M16 | 110 | 14 | 42,5 | 9  | 355     | 267 | 652  |
| 180 L        |       |     |      | 279 |     |     |     |           |     |    |      |    |         |     | 691  |
| 200          | 318   | 395 | 18,5 | 305 | 133 | 200 | 505 | 55 m6 M20 | 110 | 16 | 49   | 10 | 397     | 300 | 746  |
| 225 S        | 356   | 435 | 18,5 | 286 | 149 | 225 | 560 | 60 m6 M20 | 140 | 18 | 53   | 11 | 446     | 325 | 785  |
| 225 M   2p   |       |     |      | 311 |     |     |     | 55 m6 M20 | 110 | 16 | 49   | 10 |         |     | 780  |
| 225 M   4,6p |       |     |      | 311 |     |     |     | 60 m6 M20 | 140 | 18 | 53   | 11 |         |     | 810  |
| 250   2p     | 406   | 490 | 24   | 349 | 168 | 250 | 620 | 60 m6 M20 | 140 | 18 | 53   | 11 | 485     | 360 | 900  |
| 250   4,6p   |       |     |      |     |     |     |     | 65 m6 M20 |     |    | 58   |    |         |     |      |
| 280 S   2p   | 457   | 550 | 24   | 368 | 190 | 280 | 690 | 65 m6 M20 | 140 | 18 | 58   | 11 | 547     | 390 | 924  |
| 280 S   4,6p |       |     |      | 419 |     |     |     | 75 m6 M20 |     |    | 67,5 | 12 |         |     | 964  |
| 280 M   2p   |       |     |      |     |     |     |     | 65 m6 M20 |     |    | 58   | 11 |         |     | 975  |
| 280 M   4,6p |       |     |      |     |     |     |     | 75 m6 M20 |     |    | 67,5 | 12 |         |     | 1015 |
| 315 S   2p   | 508   | 635 | 28   | 406 | 216 | 315 | 845 | 65 m6 M20 | 140 | 18 | 58   | 11 | 620     | 530 | 1200 |
| 315 S   4,6p |       |     |      | 457 |     |     |     | 80 m6 M20 | 170 | 22 | 71   | 14 |         |     | 1230 |
| 315 L   2p   |       |     |      |     |     |     |     | 65 m6 M20 | 140 | 18 | 58   | 11 |         |     | 1310 |
| 315 L   4,6p |       |     |      |     |     |     |     | 80 m6 M20 | 170 | 22 | 71   | 14 |         |     | 1340 |
| 315 M   2p   |       |     |      | 508 |     |     |     | 65 m6 M20 | 140 | 18 | 58   | 11 |         |     | 1310 |
| 315 M   4,6p |       |     |      |     |     |     |     | 80 m6 M20 | 170 | 22 | 71   | 14 |         |     | 1340 |





230V-50Hz  
1. Cl.F - IP55 - IC411

**Duty S1**

**Aluminum casing**

**Running capacitor \***

\* High starting torque with double capacitors, main and auxiliary.

## 2 POLES 3000 min<sup>-1</sup>

| P <sub>N</sub><br>[kW] | Motor             | Poles    | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | n<br>100% | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | Cap<br>[μF] | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|-------------------|----------|----------------------------------------|------------------------|-----------------------|-------|-----------|--------------------------------|----------------------------------|--------------------------------|-------------|----------------------------------------|-----------|
| 0,18                   | <b>CHT 63 A</b>   | <b>2</b> | 2600                                   | 0,7                    | 1,40                  | 0,98  | 56,9      | 0,8                            | 1,7                              | 2,4                            | 10          | 0,0002                                 | 4,5       |
| 0,25                   | <b>CHT 63 B</b>   | <b>2</b> | 2600                                   | 0,9                    | 1,85                  | 0,98  | 60,0      | 0,8                            | 1,6                              | 2,5                            | 12          | 0,0003                                 | 5,0       |
| 0,37                   | <b>CHT 71 A</b>   | <b>2</b> | 2650                                   | 1,3                    | 2,6                   | 0,98  | 62,7      | 0,8                            | 1,7                              | 2,6                            | 16          | 0,0004                                 | 6,8       |
| 0,55                   | <b>CHT 71 B</b>   | <b>2</b> | 2700                                   | 1,9                    | 3,5                   | 0,98  | 65,9      | 0,8                            | 1,7                              | 2,7                            | 20          | 0,0005                                 | 7,5       |
| 0,75                   | <b>CHT 80 A</b>   | <b>2</b> | 2700                                   | 2,7                    | 4,9                   | 0,98  | 67,8      | 0,8                            | 1,8                              | 2,6                            | 30          | 0,0010                                 | 10        |
| 1,1                    | <b>CHT 80 B</b>   | <b>2</b> | 2700                                   | 3,9                    | 6,8                   | 0,98  | 71,6      | 0,7                            | 1,7                              | 2,8                            | 40          | 0,0012                                 | 11        |
| 1,5                    | <b>CHT 90 S</b>   | <b>2</b> | 2800                                   | 5,1                    | 8,7                   | 0,99  | 75,4      | 0,7                            | 1,9                              | 3,6                            | 60          | 0,0019                                 | 15        |
| 2,2                    | <b>CHT 90 L</b>   | <b>2</b> | 2800                                   | 7,5                    | 13,1                  | 0,99  | 77,1      | 0,7                            | 2,0                              | 3,7                            | 80          | 0,0026                                 | 18        |
| 3                      | <b>CHT 100 LA</b> | <b>2</b> | 2850                                   | 10,1                   | 17,6                  | 0,99  | 77,9      | 0,5                            | 2,1                              | 4,8                            | 80          | 0,0055                                 | 25        |

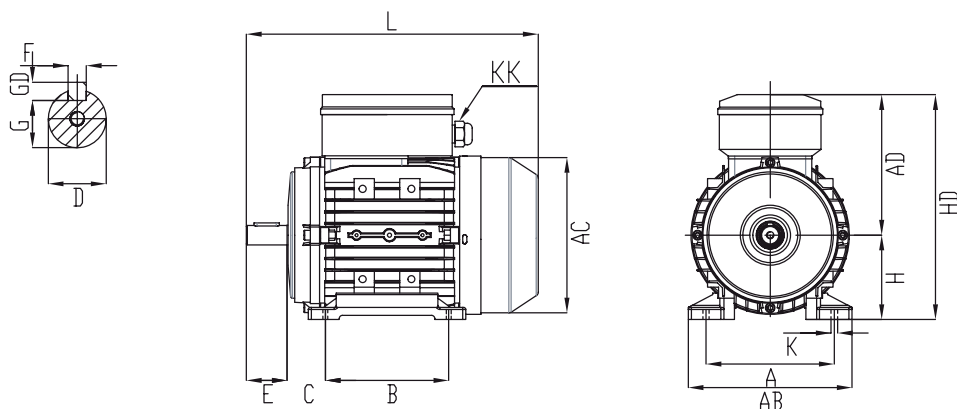
## 4 POLES 1500 min<sup>-1</sup>

| P <sub>N</sub><br>[kW] | Motor             | Poles    | n <sub>N</sub><br>[min <sup>-1</sup> ] | M <sub>N</sub><br>[Nm] | I <sub>N</sub><br>[A] | COS φ | n<br>100% | M <sub>s</sub> /M <sub>N</sub> | M <sub>max</sub> /M <sub>N</sub> | I <sub>s</sub> /I <sub>N</sub> | Cap<br>[μF] | J <sub>0</sub><br>[kg m <sup>2</sup> ] | W<br>[kg] |
|------------------------|-------------------|----------|----------------------------------------|------------------------|-----------------------|-------|-----------|--------------------------------|----------------------------------|--------------------------------|-------------|----------------------------------------|-----------|
| 0,12                   | <b>CHT 63 A</b>   | <b>4</b> | 1300                                   | 0,9                    | 1,1                   | 0,98  | 51,8      | 0,8                            | 2,4                              | 1,8                            | 8           | 0,0003                                 | 4,4       |
| 0,18                   | <b>CHT 63 B</b>   | <b>4</b> | 1300                                   | 1,3                    | 1,6                   | 0,98  | 55,0      | 0,8                            | 2,4                              | 1,8                            | 10          | 0,0004                                 | 4,8       |
| 0,25                   | <b>CHT 71 A</b>   | <b>4</b> | 1320                                   | 1,8                    | 2,0                   | 0,98  | 56,6      | 0,8                            | 2,0                              | 2,1                            | 16          | 0,0008                                 | 6,2       |
| 0,37                   | <b>CHT 71 B</b>   | <b>4</b> | 1320                                   | 2,7                    | 3,0                   | 0,98  | 58,9      | 0,8                            | 2,0                              | 2,1                            | 20          | 0,0010                                 | 6,7       |
| 0,55                   | <b>CHT 80 A</b>   | <b>4</b> | 1350                                   | 3,9                    | 3,7                   | 0,98  | 64,2      | 0,7                            | 1,8                              | 2,7                            | 25          | 0,0017                                 | 11        |
| 0,75                   | <b>CHT 80 B</b>   | <b>4</b> | 1350                                   | 5,3                    | 5,1                   | 0,99  | 65,1      | 0,7                            | 1,7                              | 2,7                            | 35          | 0,0022                                 | 12        |
| 1,1                    | <b>CHT 90 S</b>   | <b>4</b> | 1350                                   | 7,8                    | 7,0                   | 0,99  | 68,5      | 0,6                            | 1,7                              | 2,7                            | 50          | 0,0031                                 | 15        |
| 1,5                    | <b>CHT 90 L</b>   | <b>4</b> | 1350                                   | 10,6                   | 9,2                   | 0,99  | 71,3      | 0,6                            | 1,7                              | 2,9                            | 65          | 0,0045                                 | 18        |
| 2,2                    | <b>CHT 100 LA</b> | <b>4</b> | 1400                                   | 15,0                   | 13,0                  | 0,99  | 75,1      | 0,5                            | 2,0                              | 4,1                            | 80          | 0,010                                  | 26        |

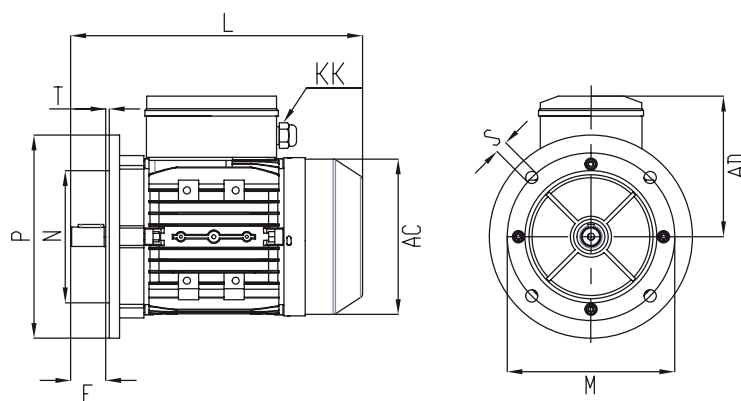


## GENERAL TECHNICAL - DIMENSIONS

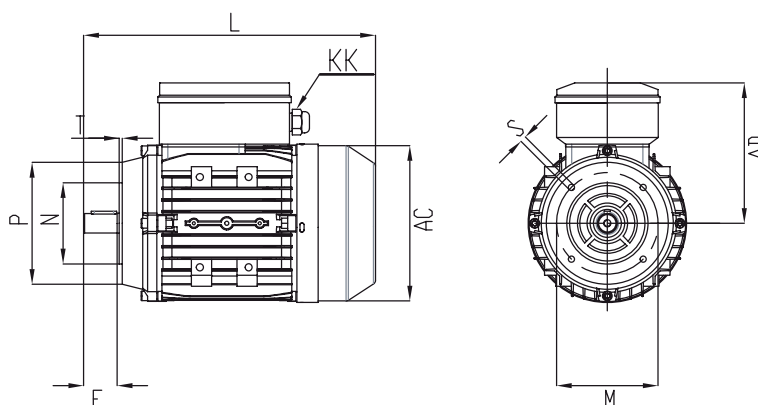
### B3



### B5



### B14



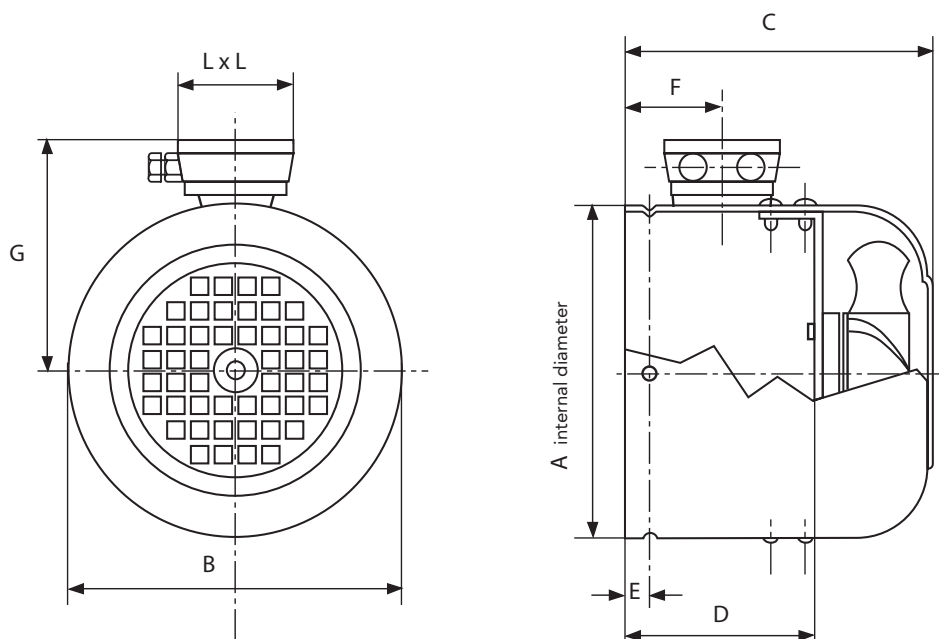
| Size   | Bearings |          | CableGlands | Terminals | IM B5 |        |     |        |     | IM B14 |        |     |       |     |
|--------|----------|----------|-------------|-----------|-------|--------|-----|--------|-----|--------|--------|-----|-------|-----|
|        | DE       | NDE      |             |           | M     | N      | P   | n x S  | T   | M      | N      | P   | n x S | T   |
| 63     | 6201 2RZ | 6201 2RZ | M16x1.5     | 6xM4      | 115   | 95 j6  | 140 | 4x10   | 3   | 75     | 60 j6  | 90  | 4xM5  | 2,5 |
| 71     | 6202 2RZ | 6202 2RZ | M20x1.5     | 6xM4      | 130   | 110 j6 | 160 | 4x10   | 3,5 | 85     | 70 j6  | 105 | 4xM6  | 2,5 |
| 80     | 6204 2RZ | 6204 2RZ | M20x1.5     | 6xM4      | 165   | 130 j6 | 200 | 4x12   | 3,5 | 100    | 80 j6  | 120 | 4xM6  | 3   |
| 90 S/L | 6205 2RZ | 6205 2RZ | M20x1.5     | 6xM4      | 165   | 130 j6 | 200 | 4x12   | 3,5 | 115    | 95 j6  | 140 | 4xM8  | 3   |
| 100    | 6206 2RZ | 6206 2RZ | M20x1.5     | 6xM5      | 215   | 180 j6 | 250 | 4x14,5 | 4   | 130    | 110 j6 | 160 | 4xM8  | 3,5 |

| Size | IM B3 |     |    |     |    |     |     | Shaft     |    |   |      |    | General |     |     |
|------|-------|-----|----|-----|----|-----|-----|-----------|----|---|------|----|---------|-----|-----|
|      | A     | AB  | K  | B   | C  | H   | HD  | D         | E  | F | G    | GD | AC      | AD  | L   |
| 63   | 100   | 120 | 7  | 80  | 40 | 63  | 182 | 11 j6 M4  | 23 | 4 | 8,5  | 4  | 119     | 119 | 219 |
| 71   | 112   | 132 | 7  | 90  | 45 | 71  | 197 | 14 j6 M5  | 30 | 5 | 11   | 5  | 137     | 126 | 250 |
| 80   | 125   | 162 | 10 | 100 | 50 | 80  | 229 | 19 j6 M6  | 40 | 6 | 15,5 | 6  | 157     | 149 | 279 |
| 90 S | 140   | 176 | 10 | 100 | 56 | 90  | 244 | 24 j6 M8  | 50 | 8 | 20   | 7  | 175     | 154 | 353 |
| 90 L | 140   | 176 | 10 | 125 | 56 | 90  | 244 | 24 j6 M8  | 50 | 8 | 20   | 7  | 175     | 154 | 353 |
| 100  | 160   | 205 | 12 | 140 | 63 | 100 | 262 | 28 j6 M10 | 60 | 8 | 24   | 7  | 200     | 162 | 389 |





## SERVO-VENTILATED KITS MONO-PHASE SERIE



Single-phase dimensions with IP55 terminal box

| SIZE | VOLTAGE | HZ      | NOM. SPEED MIN/1 | ASSORB. WATT | CURRENT M.A. | AIR FLOW M 3/H |
|------|---------|---------|------------------|--------------|--------------|----------------|
| 63   | 230     | 50 / 60 | 2750             | 15 / 14      | 120 / 100    | 180            |
| 71   | 230     | 50 / 60 | 2750             | 15 / 14      | 120 / 100    | 180            |
| 80   | 230     | 50 / 60 | 2750             | 15 / 14      | 120 / 100    | 180            |
| 90   | 230     | 50 / 60 | 2900             | 42 / 36      | 190 / 180    | 340            |
| 100  | 230     | 50 / 60 | 2900             | 42 / 36      | 190 / 180    | 340            |
| 112  | 230     | 50 / 60 | 2900             | 42 / 36      | 190 / 180    | 340            |
| 132  | 230     | 50 / 60 | 2900             | 42 / 36      | 190 / 180    | 340            |

| SIZE | COD. IP55 | A   | B   | C   | D   | E  | F  | G   | L x L |
|------|-----------|-----|-----|-----|-----|----|----|-----|-------|
| 63   | AS063230  | 121 | 123 | 102 | 58  | 6  | 50 | 104 | 75    |
| 71   | AS071230  | 136 | 138 | 120 | 70  | 6  | 50 | 111 | 75    |
| 80   | AS080230  | 153 | 155 | 130 | 80  | 6  | 55 | 125 | 100   |
| 90   | AS090230  | 172 | 176 | 145 | 75  | 6  | 60 | 135 | 100   |
| 100  | AS100230  | 195 | 197 | 158 | 85  | 8  | 60 | 150 | 100   |
| 112  | AS112230  | 218 | 220 | 160 | 100 | 10 | 60 | 160 | 100   |
| 132  | AS132230  | 255 | 257 | 180 | 120 | 8  | 65 | 175 | 100   |

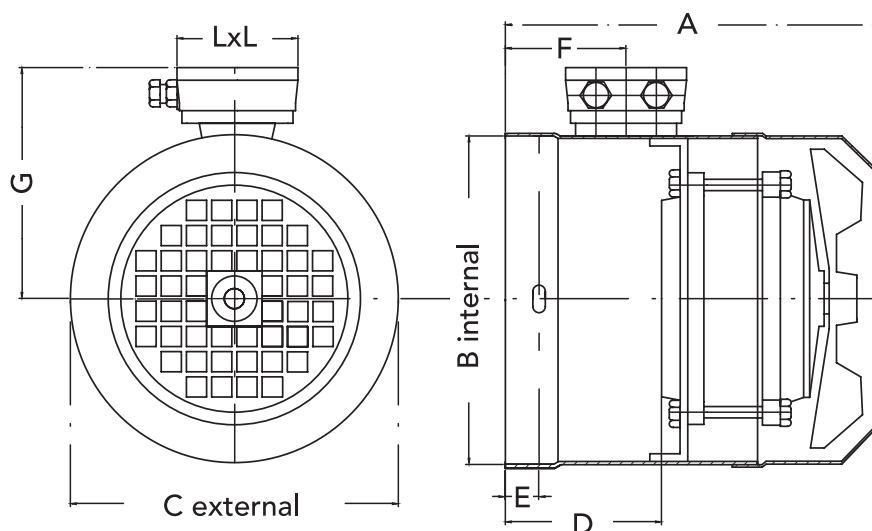


## SERVO-VENTILATED KITS THREE-PHASE SERIE

Three-phase 400V and 230/400V IP65

With/without (C/S) terminal box

From g 63 to g 132



170

| SIZE | VOLT | VOLT    | Hz    | RPM  | POWER<br>WATT | ASSORB.<br>(400 V) A | ASSORB.<br>(230/400 V) A | AIR<br>m³/h |
|------|------|---------|-------|------|---------------|----------------------|--------------------------|-------------|
| 63   | 400  | 230/400 | 50/60 | 2900 | 104           | 0.26                 | 0.45/0.26                | 250         |
| 71   | 400  | 230/400 | 50/60 | 2900 | 104           | 0.26                 | 0.45/0.26                | 250         |
| 80   | 400  | 230/400 | 50/60 | 2900 | 104           | 0.26                 | 0.45/0.26                | 300         |
| 90   | 400  | 230/400 | 50/60 | 2900 | 104           | 0.26                 | 0.45/0.26                | 350         |
| 100  | 400  | 230/400 | 50/60 | 2900 | 104           | 0.26                 | 0.45/0.26                | 400         |
| 112  | 400  | 230/400 | 50/60 | 2900 | 104           | 0.26                 | 0.45/0.26                | 450         |
| 132  | 400  | 230/400 | 50/60 | 2900 | 104           | 0.26                 | 0.45/0.26                | 550         |

| SIZE | A   | B   | C   | D   | E | F   | G   | L*L |
|------|-----|-----|-----|-----|---|-----|-----|-----|
| 63   | 178 | 120 | 122 | 72  | 6 | 85  | 105 | 75  |
| 71   | 185 | 136 | 138 | 73  | 6 | 85  | 112 | 75  |
| 80   | 212 | 154 | 156 | 96  | 6 | 85  | 120 | 75  |
| 90   | 203 | 174 | 176 | 90  | 6 | 75  | 130 | 75  |
| 100  | 205 | 191 | 193 | 81  | 6 | 70  | 140 | 75  |
| 112  | 228 | 219 | 221 | 105 | 8 | 93  | 150 | 75  |
| 132  | 252 | 256 | 258 | 120 | 8 | 111 | 170 | 75  |

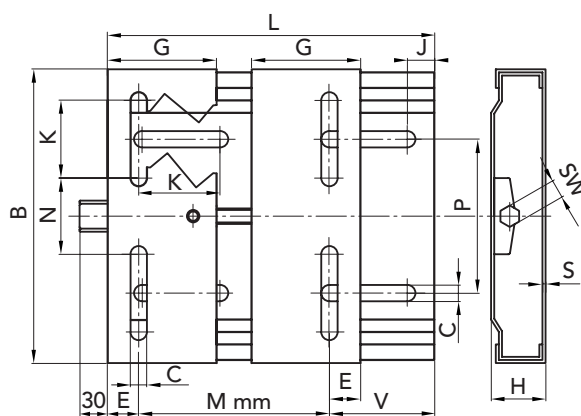




## BELT TENSIONER SLIDES FOR ELECTRIC MOTORS

### MATERIAL

Galvanized metal sheet **FE 430**



### DIMENSIONS

| MOTOR SIZE | TYPE | CODE     | L   | B   | H  | Mmin | G  | E  | J  | K    | C    | N   | P       | SW | S |
|------------|------|----------|-----|-----|----|------|----|----|----|------|------|-----|---------|----|---|
| 63/80      | 210  | 90100210 | 210 | 195 | 33 | 100  | 70 | 20 | 25 | 50   | 10,5 | 43  | 98      | 19 | 3 |
| 63/112     | 270  | 90100270 | 270 | 195 | 33 | 100  | 70 | 20 | 25 | 50   | 10,5 | 43  | 98      | 19 | 3 |
| 90/132     | 340  | 90100340 | 340 | 290 | 40 | 135  | 95 | 27 | 29 | 62,5 | 12,5 | 90  | 165     | 22 | 4 |
| 100/160    | 430  | 90100430 | 460 | 290 | 40 | 140  | 95 | 27 | 29 | 62,5 | 12,5 | 90  | 165     | 22 | 4 |
| 160/180    | 490  | 90100490 | 490 | 410 | 40 | 254  | 95 | 40 | 30 | 60   | 15   | 193 | 142/284 | 22 | 4 |

### ADJUSTMENT WIDENESS

| TYPE | 63  | 71  | 80  | 90  | 100 | 112 | 132 | 160 | 180 | WEIGHT kg |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| 210  | 70  | 58  | 45  |     |     |     |     |     |     | 2,2       |
| 270  | 130 | 118 | 105 | 90  | 70  | 40  |     |     |     | 2,8       |
| 340  |     |     |     | 140 | 130 | 100 | 75  |     |     | 6,7       |
| 430  |     |     |     |     | 216 | 186 | 10  | 122 |     | 7,5       |
| 490  |     |     |     |     |     |     |     | 156 | 131 | 10,8      |

Quantities, prices and availability by B2B Chiaravalli



# PLANETARY GEARBOX

*High reliability, compact volumes and easy construction are among the main characteristics of new CHIARAVALLI planetary gearboxes.*

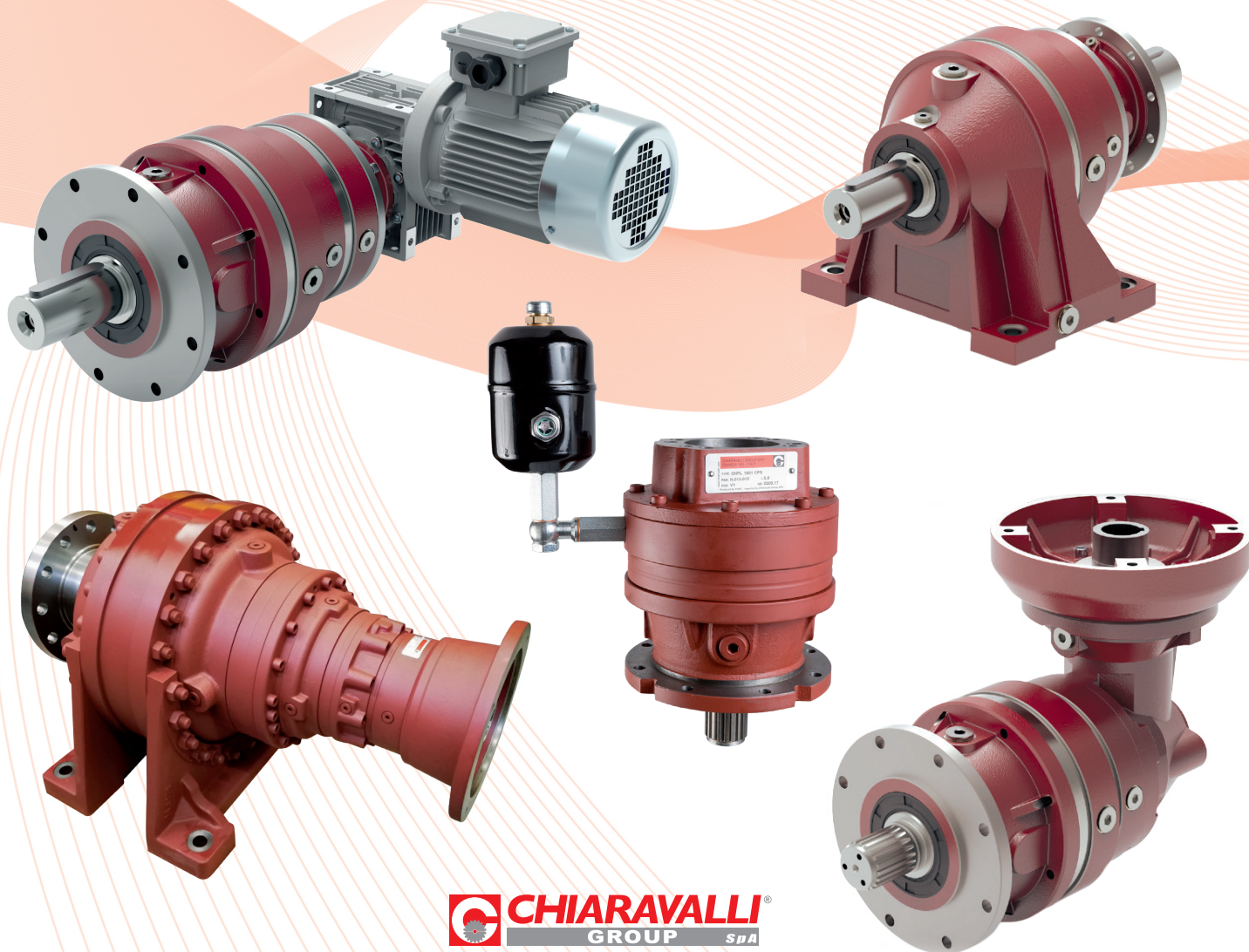
*As one of the main advantages, our planetary gearboxes can be easily assembled with electric and hydraulic motors, worm gearboxes (CHM series) and input shafts.*

*Furthermore, they can be assembled with different output flanges or shafts, all these characteristics*

*make them suitable for several industrial applications. CHIARAVALLI planetary gear boxes are available in linear version (CHPL) and angular one (CHPLB).*

*Our range covers 11 transmission sizes, from 100 daNm up to 3500 daNm, rate reductions from 3.55:1 to 3422:1 and more with four reduction stages (these available upon request).*

*CHIARAVALLI planetary gearboxes are available at anti rusted treated blank surface ready to be painted.*





# GENERAL SALES CONDITIONS

**1) ORDERS** - Orders for special and standard material must always refer to offers made by CHIARAVALLI GROUP S.p.A. The orders are binding for the client. Once work has commenced no cancellations or order reductions will be accepted unless the client reimburses the costs of the material and the work carried out up to the moment in which the order was suspended.

The quantity despatched can vary by  $\pm 5\%$  compared to the quantity ordered.

**2) PRICES** - The prices are those in force at the date of order.

All prices are for goods delivered ex-works Premezzo, packing excluded. If there should be any increase in production and material costs over the duration of the supply, CHIARAVALLI GROUP S.p.A. reserves the right to adapt the prices accordingly, even for orders in course.

**3) TERMS OF DELIVERY** - Only the terms of delivery indicated by CHIARAVALLI GROUP SpA are to be considered valid. However, they must only be considered as indicative.

In the event of difficulty in the procurement of materials, strikes or in any event in all cases of force majeure, the terms of delivery will be automatically extended without CHIARAVALLI GROUP S.p.A. having to pay any reimbursement for damages.

The client is obligated to collect special material ordered when ready.

**4) DELIVERIES** - Deliveries are the responsibility of the purchaser and are carried out at his own risk and peril.

Any claims for shortages must be presented within 8 days of receipt of the goods.

If it is agreed that the cost of transport is to be paid, even if only in part, by CHIARAVALLI GROUP S.p.A., the latter reserves the right to choose the most economical means of transport.

**5) PACKING** - Packing will be invoiced at cost.

**6) RETURNS** - No returns for any reason will be accepted unless previously authorised and with packing, any customs clearance and the return paid for by the purchaser.

To cover warehouse and administrative expenses a debit note will be issued for approx. 15% of the value of the goods returned.

**7) WARRANTY** - CHIARAVALLI GROUP S.p.A. promises to repair or substitute free of charge any parts that they recognise as being defective. The questioned goods must be returned to the factory of CHIARAVALLI GROUP S.p.A., free of all expenses.

The warranty will be considered cancelled in the event that the parts returned as defective have been repaired or tampered with. The repair of defective parts carried out by the purchaser will only be accepted after authorisation from CHIARAVALLI GROUP S.p.A. and after their approval of the cost estimate. CHIARAVALLI GROUP S.p.A. does not accept responsibility or pay any reimbursement for damages that occur during the use of their products, even if defective.

Warranty is excluded for leakage of lubricant caused by wear of the oil seals.

**8) RESPONSIBILITY** - CHIARAVALLI GROUP S.p.A. does not accept responsibility or pay any reimbursement for damages that occur during the use of their products, even if defective.

CHIARAVALLI GROUP S.p.A. declines all responsibility in the execution of parts to a client's design under any patents.

**9) PAYMENTS** - Only payments carried out in the manner and terms agreed will be considered valid. Once the due date of payment has passed, CHIARAVALLI GROUP S.p.A. will calculate the interest on delayed payment at a rate that is 3% higher than the legal one, retaining the right to demand payment. In the event of delayed or missing payment by the purchaser, the company CHIARAVALLI GROUP S.p.A. reserves the right to suspend deliveries of the orders in course or to demand advance payment without having to pay any reimbursement or compensation to the purchaser. Any dispute regarding materials in manufacture or already possessed by the purchaser does not free the latter from the commitment of making the payment by the agreed date and for the whole amount of the invoice without making any deductions.

**10) OWNERSHIP** - All of the goods despatched remain the property of CHIARAVALLI GROUP S.p.A. until the invoice is fully paid.

**11) COMPETENT COURT** - Any controversy concerning business relations with CHIARAVALLI GROUP SpA will be dealt with under the jurisdiction of the Court of Busto Arsizio.

CHIARAVALLI GROUP SpA, do not accepts responsibility for any errors in the production of this catalogue and reserves the right to add to the drawings designs of the listed products any modification request by manufacturing requirements or due to evolution of the products.





**CHIARAVALLI Cz a.s.**  
Průmyslová 2083  
59401 Velké Meziříčí  
Česká republika  
Tel. +420 566 502 030  
www.chiaravalli.cz



**CHIARAVALLI POLSKA Sp. z o.o.**  
ul. Polna 133  
87 - 100 Toruń  
Polska  
Tel. + 48 56 623 30 00  
www.chiaravalli.pl



Via per Cedrate, 476  
21044 Cavarina con Premezzo (VA) - Italy  
Tel. +39 0331 214 511

[www.chiaravalli.com](http://www.chiaravalli.com)  
[chiaravalli@chiaravalli.com](mailto:chiaravalli@chiaravalli.com)

