CHIARAVALLI® GROUP SpA

GEAR BOXES AND MOTORS

V. 01.21

CHIARAVALLI® GROUP SpA

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.

chiaravalli.com

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

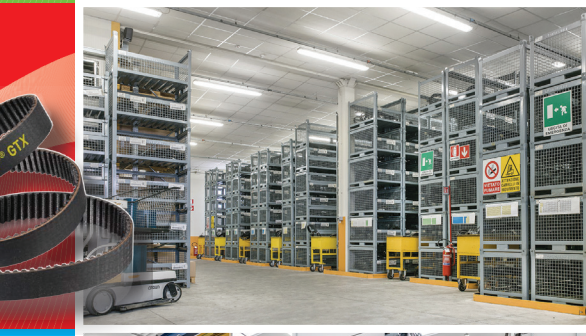
STANDARD TRANSMISSION

Standard products as per our catalogue

WE DISTRIBUTE

URB BEARINGS

BELTS



GEAR BOXES & ELECTRIC MOTORS

CHIARAVALLI® GROUP SpA

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

CHIARAVALLI GROUP SpA

INDEX

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

$P_1 * \eta = P_2$
P_1 = Input power
P_2 = Output power
η = Transmission efficiency

VELOCITA' DI ROTAZIONE n

n_1 = Input speed
n_2 = Output speed

An output speed ≤ 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

$$T_2 = \frac{9550 \cdot P_1 \cdot \eta}{n_2} \left[Nm\right] \qquad T_{2n} \geq T_2 \cdot f_s \left[Nm\right]$$

T_2 = Output torque
T_{2n} = Rated output torque
P_1 = Input power
η = Transmission efficiency
f_s = Service factor

2D and 3D drawings available on the web site ***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 spocket
= 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 itis better to install, where possible, breather plug.

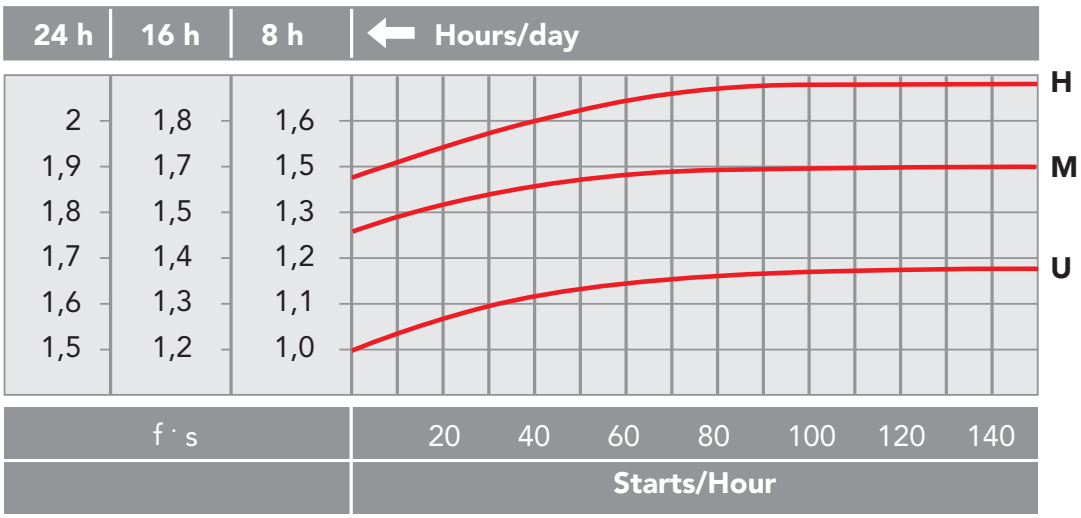
PAINTING

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 Fs

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

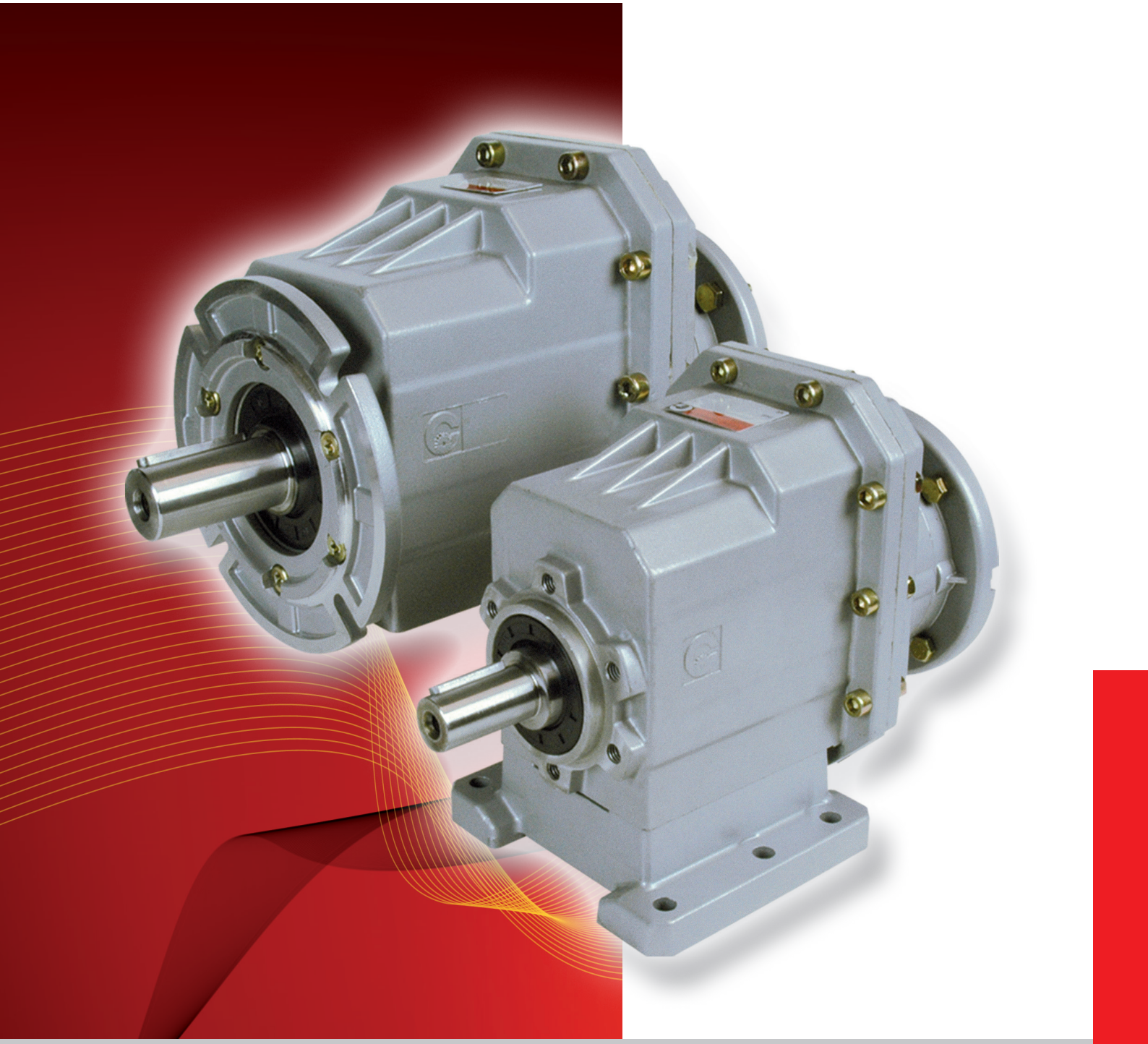
H Mixers - bucket elevators - tooling machines - machinery for bricks - vibrators

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***
Quantity, availability and prices with Chiaravalli B2B

CHIARAVALLI® GROUP SpA



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.

2D and 3D drawings available on the web site ***www.chiaravalli.com***
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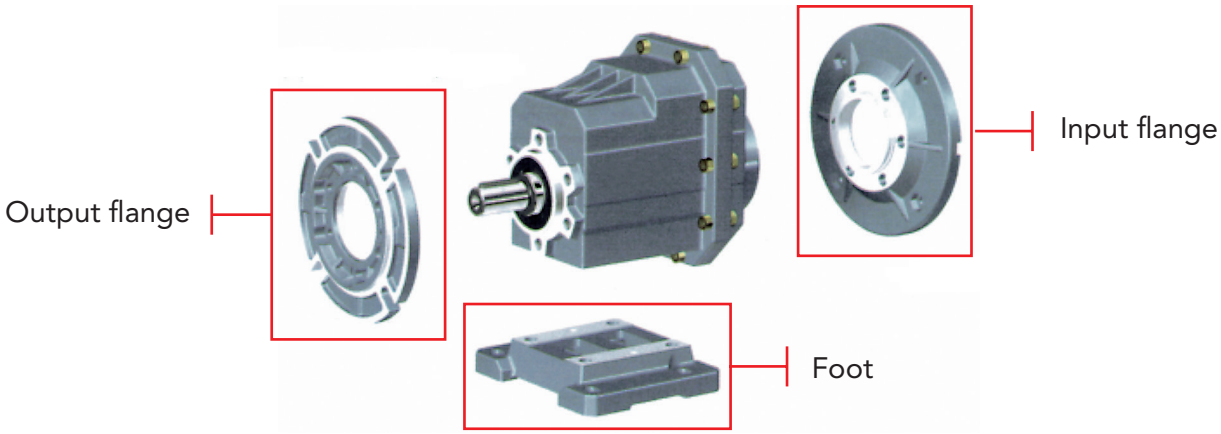
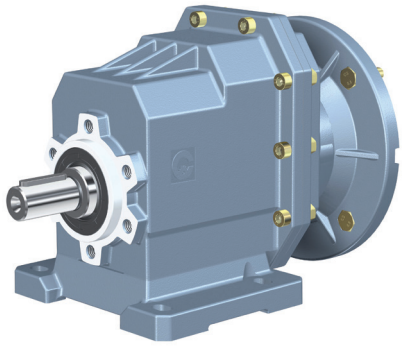
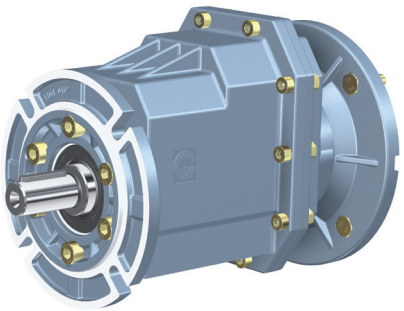
ASSEMBLING POSSIBILITY



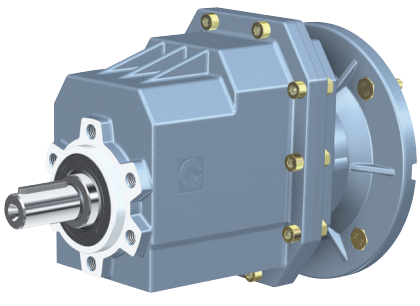
DESIGNATION



CHC...P



CHC...F



CHC...

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
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

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

POWER P

$P_1 * \eta = P_2$
P_1 = Input power
P_2 = Output power
η = Transmission efficiency

ROTATION SPEED n

n_1 = Input speed
n_2 = Output speed

An output speed ≤ 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

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

$$M_2 \geq M_2 \cdot f_s \left[Nm\right]$$

M_2 = Output torque
M_{2n} = Rated output torque
P_1 = Input power
η = Transmission efficiency
f_s = Service factor

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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 spocket
= 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.

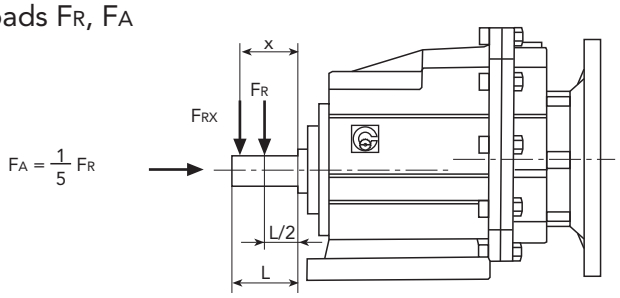
$$F_{Rx} \leq \frac{F_R \cdot a}{(b+x)} \left[N \right]$$

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

CONSTANTS' VALUES

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

Output shaft radial loads & axial loads F_R, F_A



n2 [min^{-1}]	10	40	60	80	100	120	150	180	250	400
CHC 16-20	2300	2300	2180	1980	1840	1630	1400	1320	1080	920
CHC 25	4800	4800	4370	3970	3680	3470	2710	2550	2150	1840
CHC 30	6300	6300	5550	5040	4510	3800	3530	3320	2800	2390
CHC 35-40	7500	7500	6590	5990	5230	4570	4240	3900	3350	2860

F_R [N]

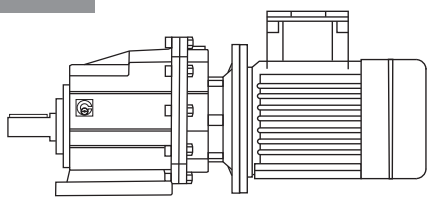
LUBRICATION

TYPES OF LUBRICATION

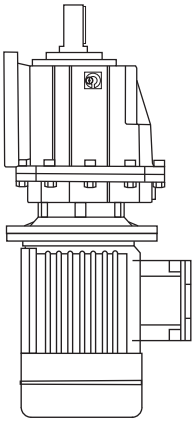
	°C -50 0 +50 +100	ISO	SHELL	MOBIL	BP	Lubrication type
CHC	-10 +40	VG 220	Shell Omala 220	Mobilgear 630	BP Energol GR-XP 220	Mineral Oil
	-20 +25	VG 150 VG 100	Shell Omala 100	Mobilgear 627	BP Energol GR-XP 100	
	-30 +10	VG 68-46 VG 32	Shell Tellus T 32	Mobil D.T.E. 13M		
	-40 -20	VG 22 VG 15	Shell Tellus T 15	Mobil D.T.E. 11M	BP Energol HLP-HM 15	
	-40 +40	VG 150	Shell Omala HD 150	Mobil SHC 629		Syntetic oil
	-40 +80	VG 220	Shell Omala HD 220	Mobil SHC 630		
	-25 +50	VG 320	Shell Tivela S 320			

MOUNTING POSITION AND TERMINAL BOX ORIENTATION

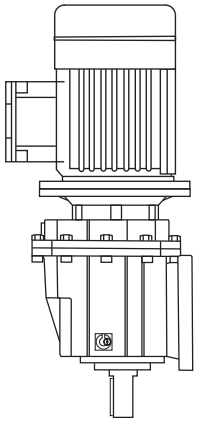
B3



V6



V5



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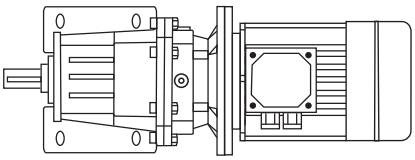

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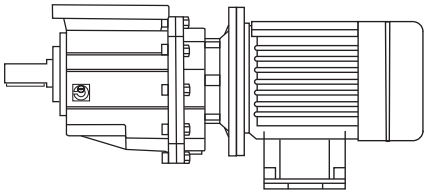

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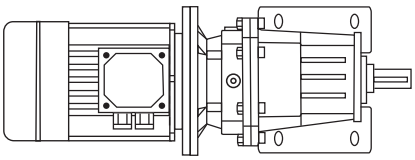

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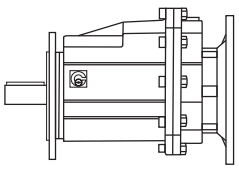
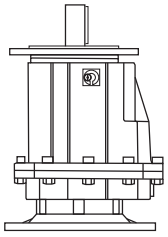
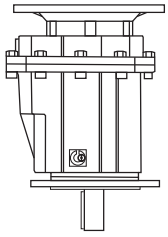
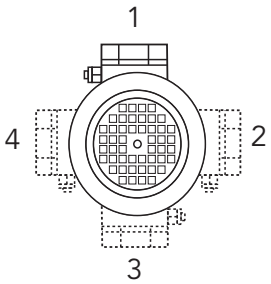


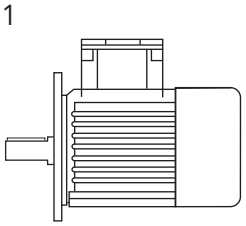
V3



V1







Normal position

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.

CHC 20	(CHC16)*	IEC	
i	63B5	71B5 71B14	80B5 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	

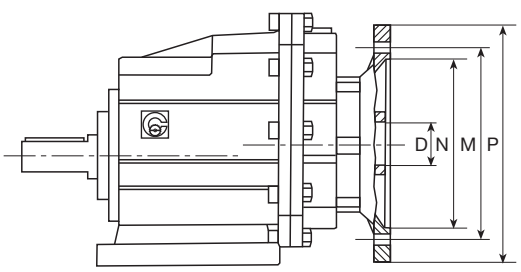
CHC 25	IEC		
i	71B5 71B14	80B5 80B14	90B5 90B14
46,5	B		
40,6	B		
35,9	B		
28,9	B		
23,9	B		
20,1		B	
17,1		B	
14,8		B	
12,1		B	
9,9		B	
7,4		B	
5,5		B	

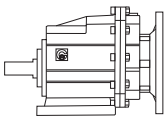
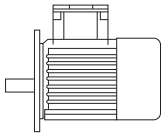
CHC 30	IEC		
i	80B5 80B14	90B5 90B14	100/112B5 100/112B14
58,1	B		
50,0	B		
43,7	B		
38,7	B		
34,6	B		
30,6	B		
25,0	B		
21,7	B	B	
17,3	B	B	
15,0	B	B	
12,3		B	
10,2		B	
7,9		B	
5,5		B	

CHC 35	CHC 40	IEC	
i	80B5 80B14	90B5 90B14	100/112B5 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	

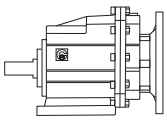
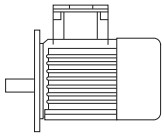
* CHC 16 Only on request
Ratios are rounded
B= Metal reduction bushing

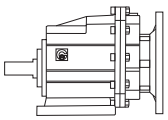
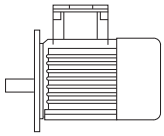
IEC	63B5	71B5	71B14	80B5	80B14	90B5	90B14	100B5	100B14	112B5	112B14
DE8	11	14		19		24		28		28	
P	140	160	105	200	120	200	140	250	160	250	160
M	115	130	85	165	100	165	115	215	130	215	130
N	95	110	70	130	80	130	95	180	110	180	110



P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i	fs			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				

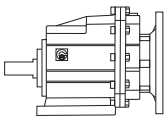
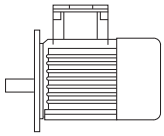
*2D and 3D drawings available on the web site **www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i	fs			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				

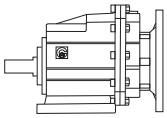
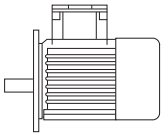
P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i	fs			page
0.55	19.4	260	46.5	0.8	**CHC25**	**80B5/B14**	**80B6**	**17**
	22.2	227	40.6	0.9				
	25.1	201	35.9	1.0				
	31.2	162	28.9	1.2				
	37.7	134	23.9	1.5				
	30.1	167	46.5	1.2	**CHC25**	**80B5/B14**	**80A4**	**17**
	34.5	146	40.6	1.4				
	39	129	35.9	1.5				
	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	**CHC30**	**80B5/B14**	**80B6**	**18**
	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	**CHC30**	**80B5/B14**	**80A4**	**18**
	28.0	180	50.0	1.7				
	32.0	158	43.7	1.9				
	36.0	139	38.7	2.2				
0.75	101	68	13.8	1.5	**CHC20**	**80B5/B14**	**80B4**	**16**
	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	**CHC25**	**80B5/B14**	**80B4**	**17**
	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	**CHC30**	**90B5/B14**	**90S6**	**18**
	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	**CHC30**	**80B5/B14**	**80B4**	**18**

*2D and 3D drawings available on the web site **www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i	fs				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				

P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i	fs			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***
Quantity, availability and prices with Chiaravalli B2B

P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i	fs				page
	177	114	7.9	2.3	**CHC40**			
	255	79	5.5	2.9				
3	93.0	296	15.0	0.9	**CHC30**	**100B5/B14**	**100LB4**	**18**
	113.8	243	12.3	1.1				
	136.0	202	10.2	1.2				
	177	156	7.9	1.2				
3	255	108	5.5	1.4	**CHC30**	**100B5/B14**	**100LB4**	**18**
	49.5	556	28.3	0.9	**CHC35**	**100B5/B14**	**100LB4**	**19**
	64.5	428	21.7	1.1	**CHC40**			
	81.0	340	17.3	1.4				
	92.7	296	15.1	1.6				
	113.8	243	12.3	1.9				
	136	202	10.2	2.2				
	177	156	7.9	1.7				
	255	108	5.5	2.1				
4	177	208	7.9	0.9	**CHC30**	**112B5/B14**	**112M4**	**18**
	255	144	5.5	1.0				
	113.8	324	12.3	1.4	**CHC35**	**112B5/B14**	**112M4**	**19**
	136.0	269	10.2	1.6	**CHC40**			
	177	208	7.9	1.3				
	255	144	5.5	1.6				

M_{2max} [Nm]	n_1 [r/min]	i	P_{1n} [Kw]	n_2 [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	

CHC 20 (CHC16) P (IEC)

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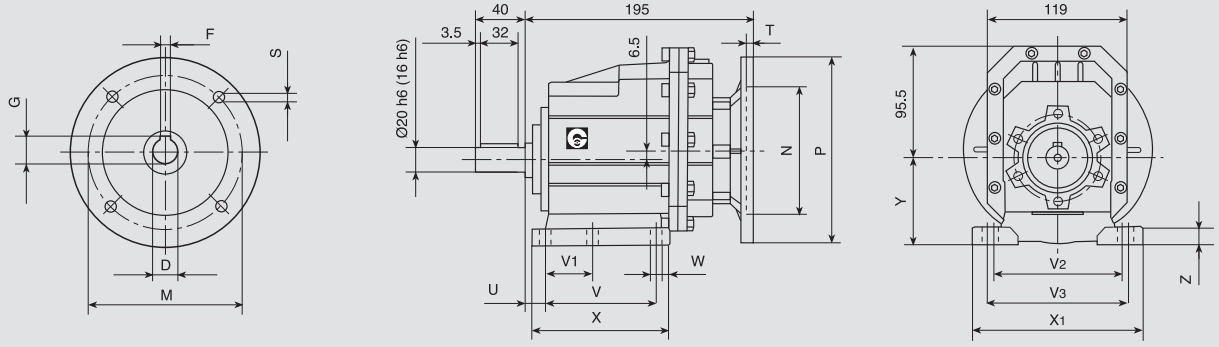

CHC 20 (CHC16) F (IEC)

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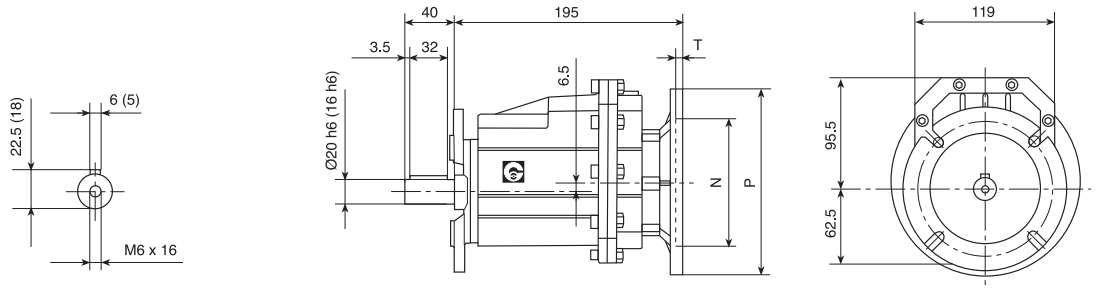
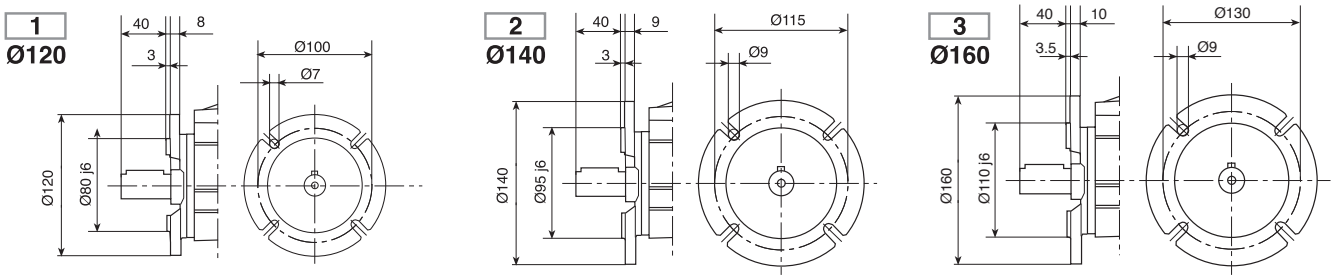
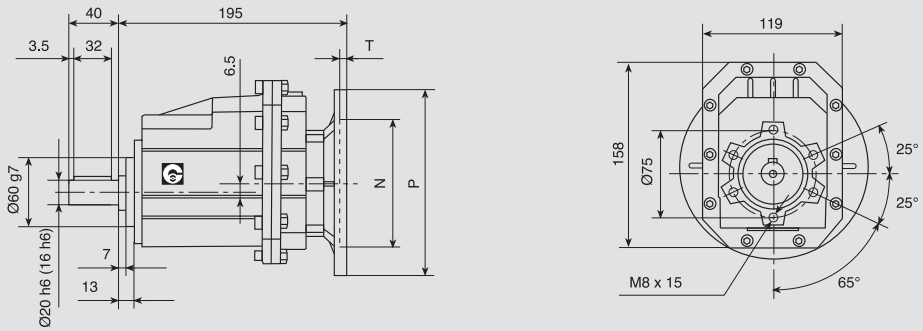




CHC 20 (CHC16) (IEC)



(CHC16) On request

kg. 4,7

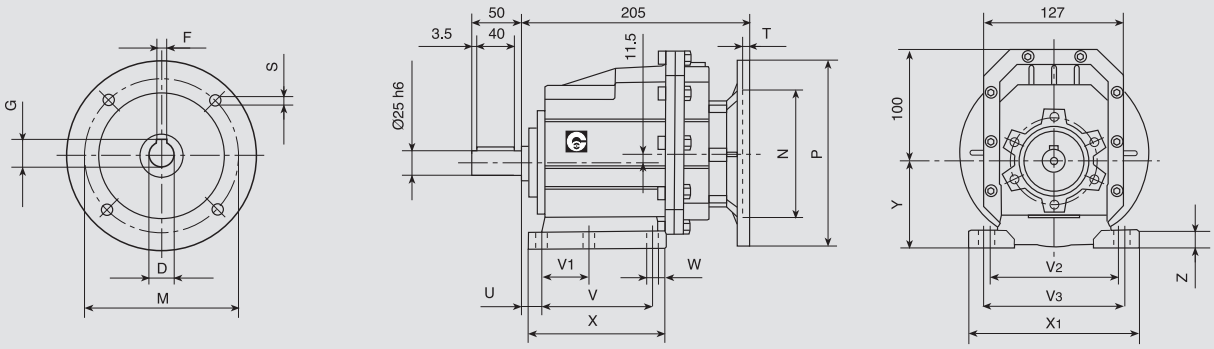
IEC	D	F	G	P	M	N	S	T
63B5	11	4	12.8	140	115	95	9	5
71B5	14	5	16.3	160	130	110	9	5
71B14	14	5	16.3	105	85	70	7	5
80B5	19	6	21.8	200	165	130	11	5
80B14	19	6	21.8	120	100	80	7	5

Foot cod.	U	V	V_1	V_2	V_3	W	X	X_1	Y	Z
B	18	87	50	110	-	9	118	130	85	15
M	18	80	-	110	120	9	118	145	75	15

2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

CHC 25 P (IEC)

INPUT



CHC 25 F (IEC)

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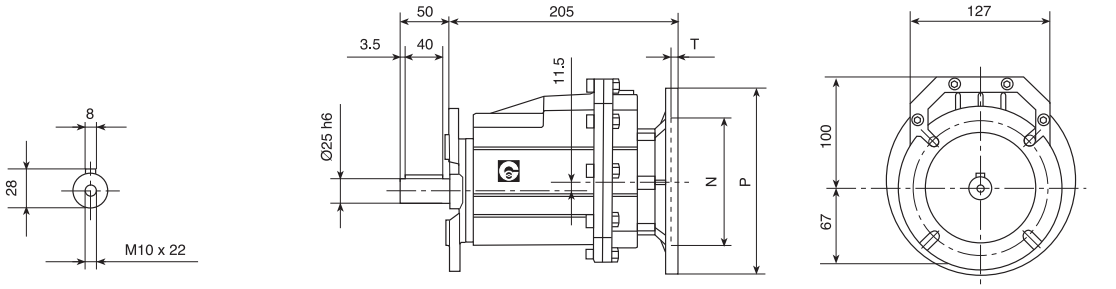

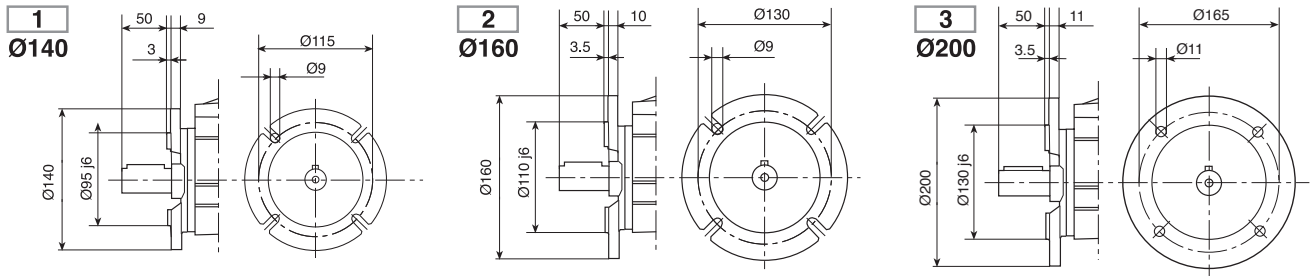

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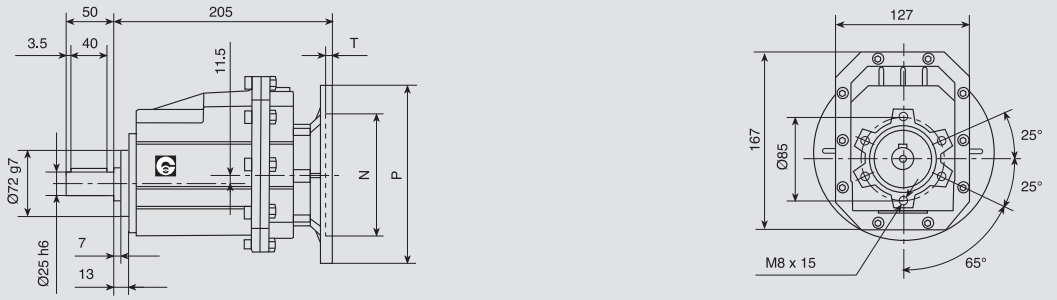


kg. 5,8

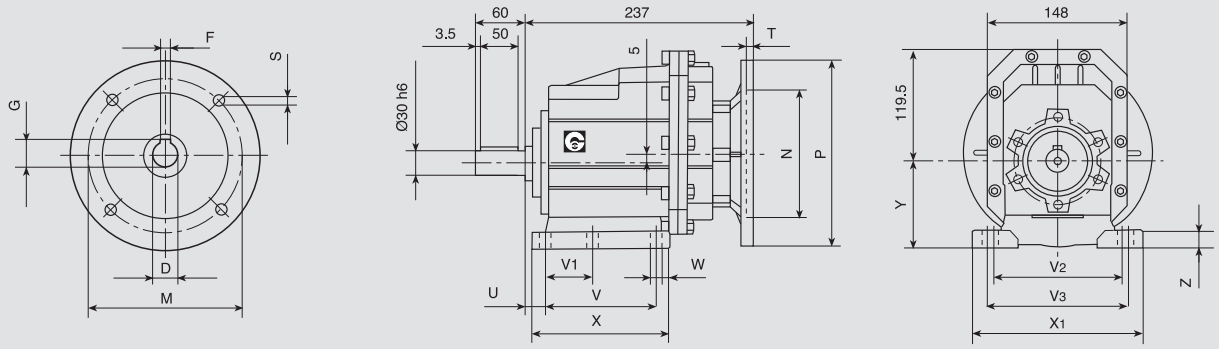
Foot cod.	U	V	V_1	V_2	V_3	W	X	X_1	Y	Z
B	18	107.5	60	-	130	11	136	155	100	17
M	25	85	-	110	120	9	112	145	80	15

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

*2D and 3D drawings available on the web site **www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

CHC 30 P (IEC)

INPUT



CHC 30 F (IEC)

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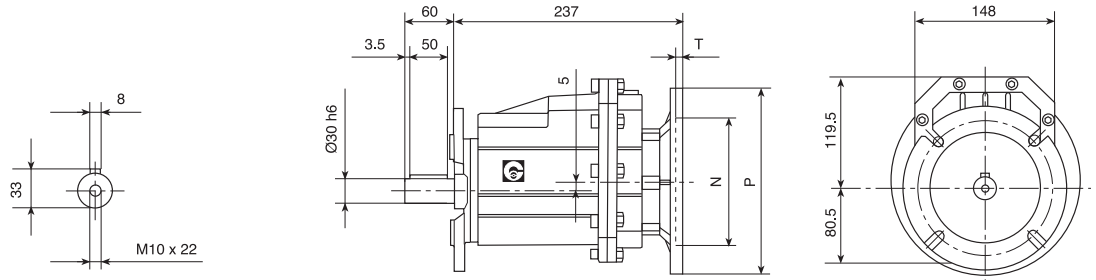
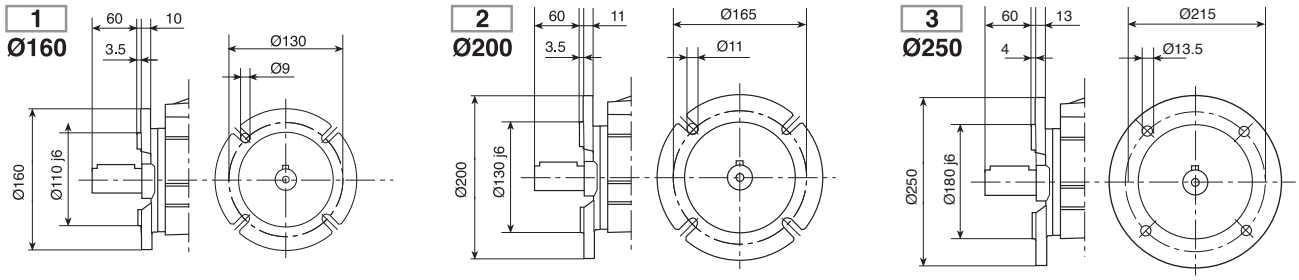
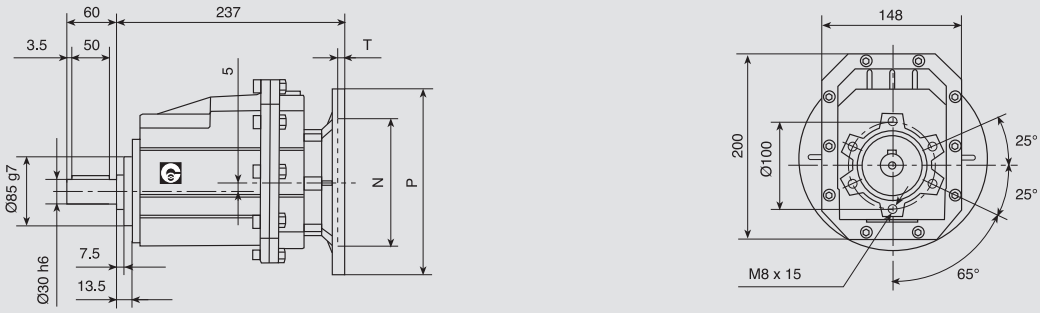




CHC 30 (IEC)



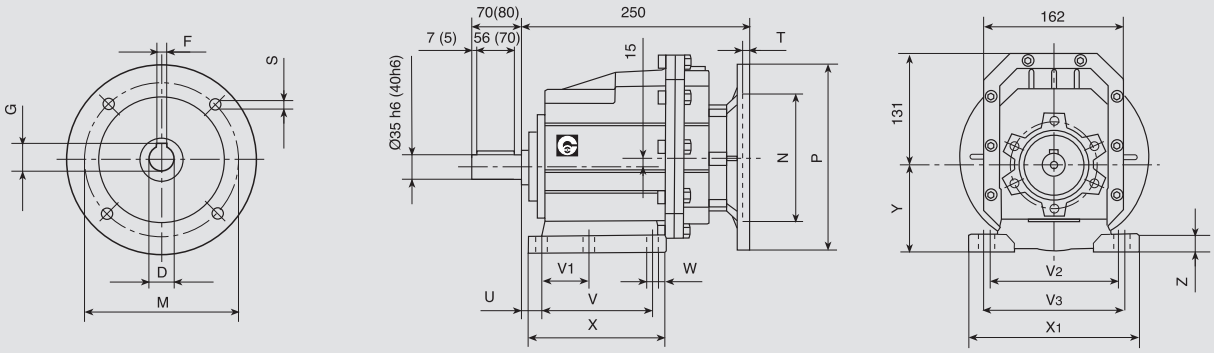
kg. 9,2

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

Foot cod.	U	V	V_1	V_2	V_3	W	X	X_1	Y	Z
B	18	130	70	-	160	11	156	190	110	20
M	30	100	-	135	150	11	150	190	110	18

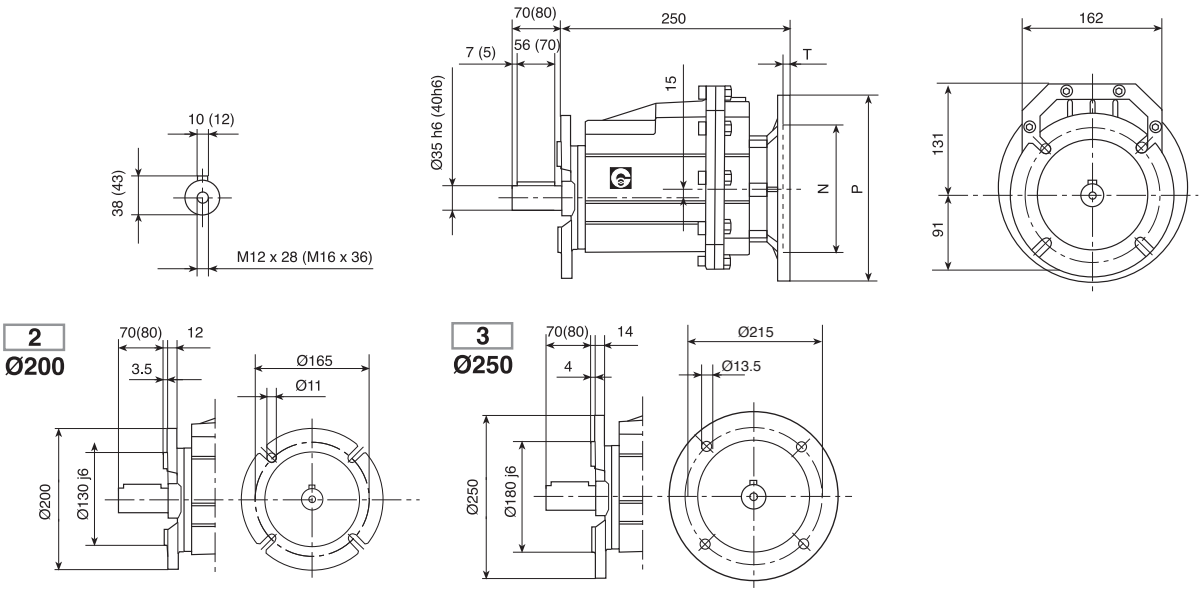
CHC 35 - CHC 40 P (IEC)

INPUT

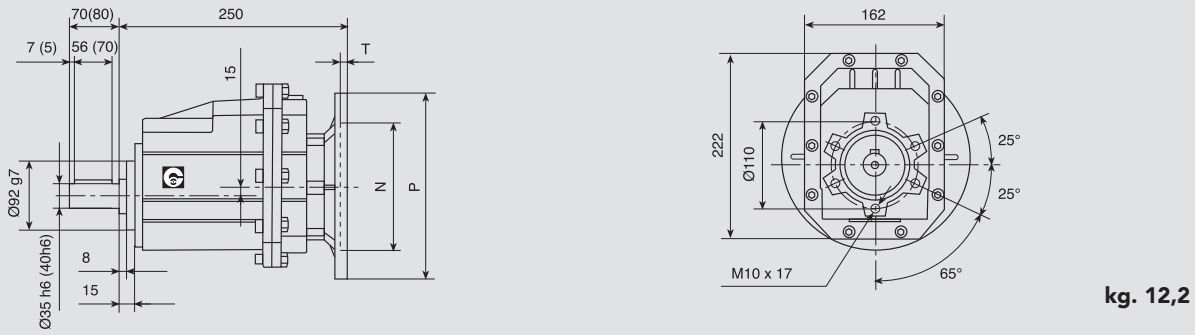


CHC 35 - CHC 40 F (IEC)

OUTPUT



CHC 35 - CHC 40 (IEC)



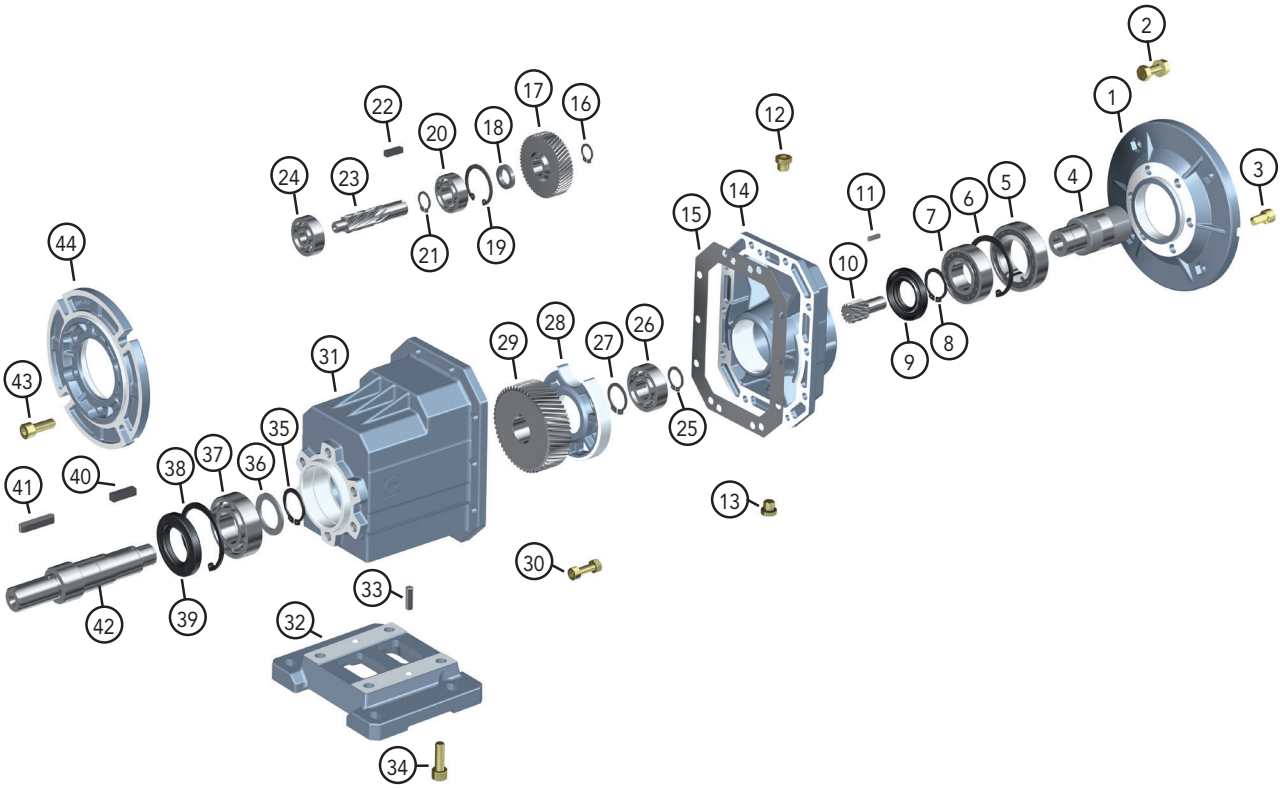
kg. 12,2

Foot cod.	U	V	V1	V2	V3	W	X	X1	Y	Z
B	23.5	130	-	170	-	14	168	205	115	20
C	19.5	149.5	-	180	-	14	185	215	130	20
M	35	110	-	170	185	14	150	230	120	20

(...) Between brackets CHC 40 dimension

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

*2D and 3D drawings available on the web site **www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B



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.

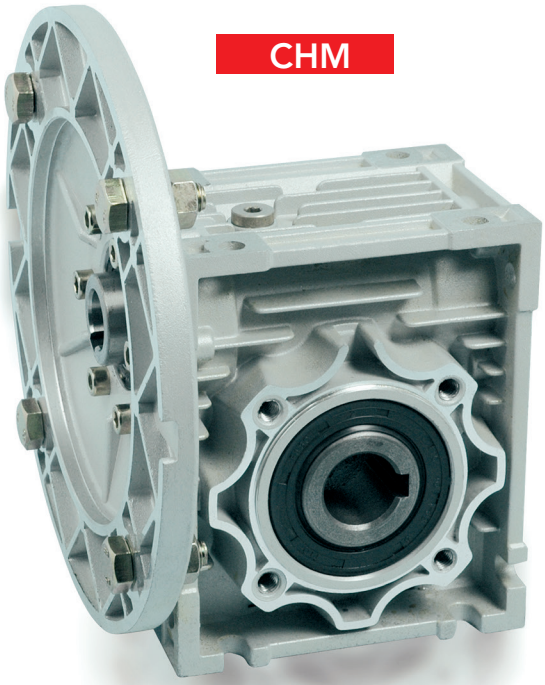
2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

CHIARAVALLI GROUP SpA

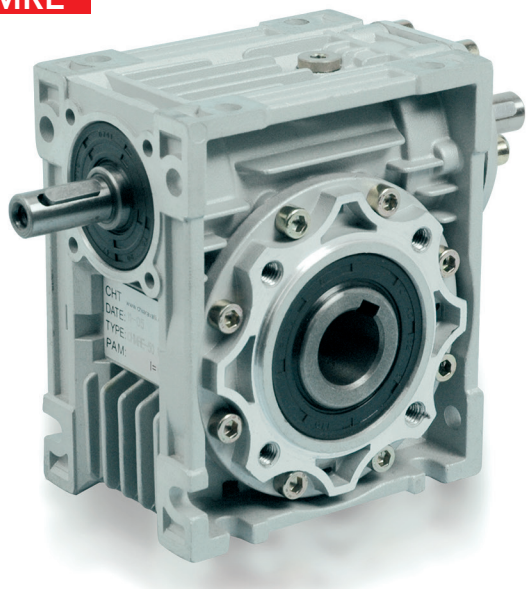
CHM WORM GEARED MOTORS AND WORM GEAR UNITS

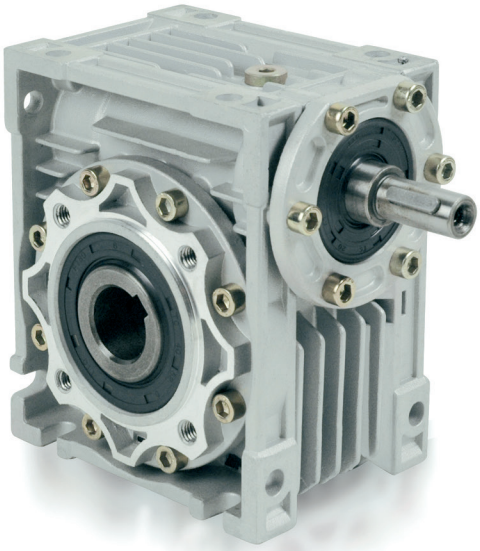
CHME

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***
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
B3	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
B8	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
B6/B7	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
V5	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
V6	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
B5	9/120	11/140	14/160	19/200	24/200	28/250	28/250	38/300
B14	9/80	11/90	14/105	19/120	24/140	28/160	28/160	38/200

2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

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		U UNIVERSALE
	030	FB	2	10		B3
CHMR	040	FC		15		B8
	050	FD		20		B6
CHME	063	FE		25	**SEE FROM**	B7
	075			30	**PAGE 31 TO 40**	V5
CHMRE	090			40		V6
	110			50		
	130			60		
	150			80		
				100		

ORDER EXAMPLE

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

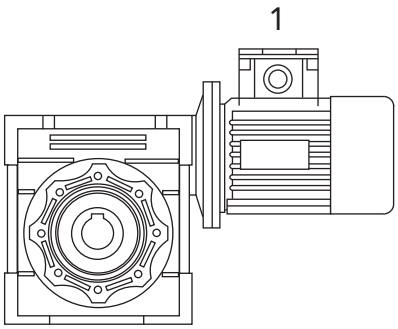
If the motor is also required, please specify:

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

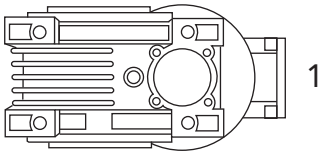
N.B. From size 25 to 63 the gears are always supplied in the Universal position and can therefore be mounted in any position, from size 75 to size 130 if the position required differs from B3 it must be specified.
In particular, in the event that a gear in position B3 is to be mounted in positions V5 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.

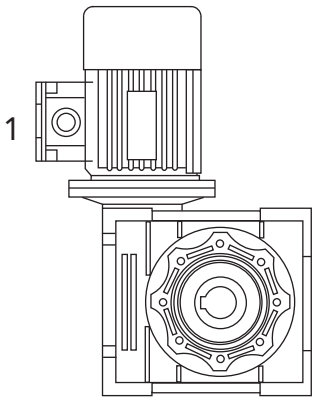
B3



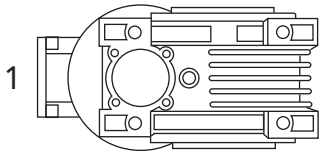
B6



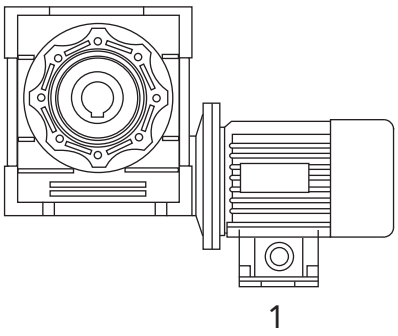
V5



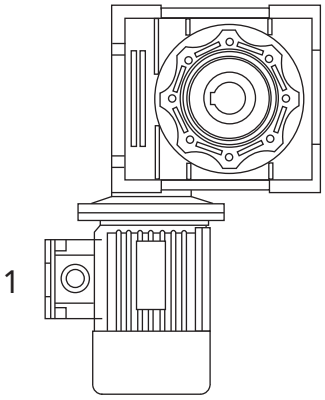
B7



B8



V6



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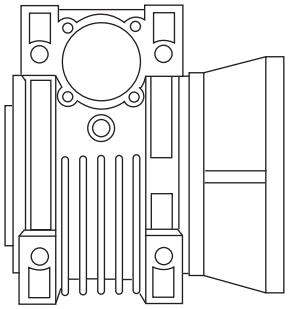
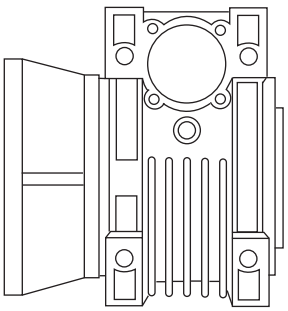
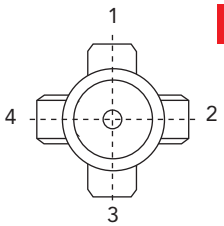
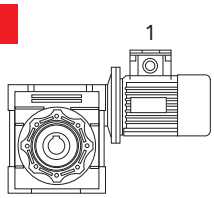


F...2



B3





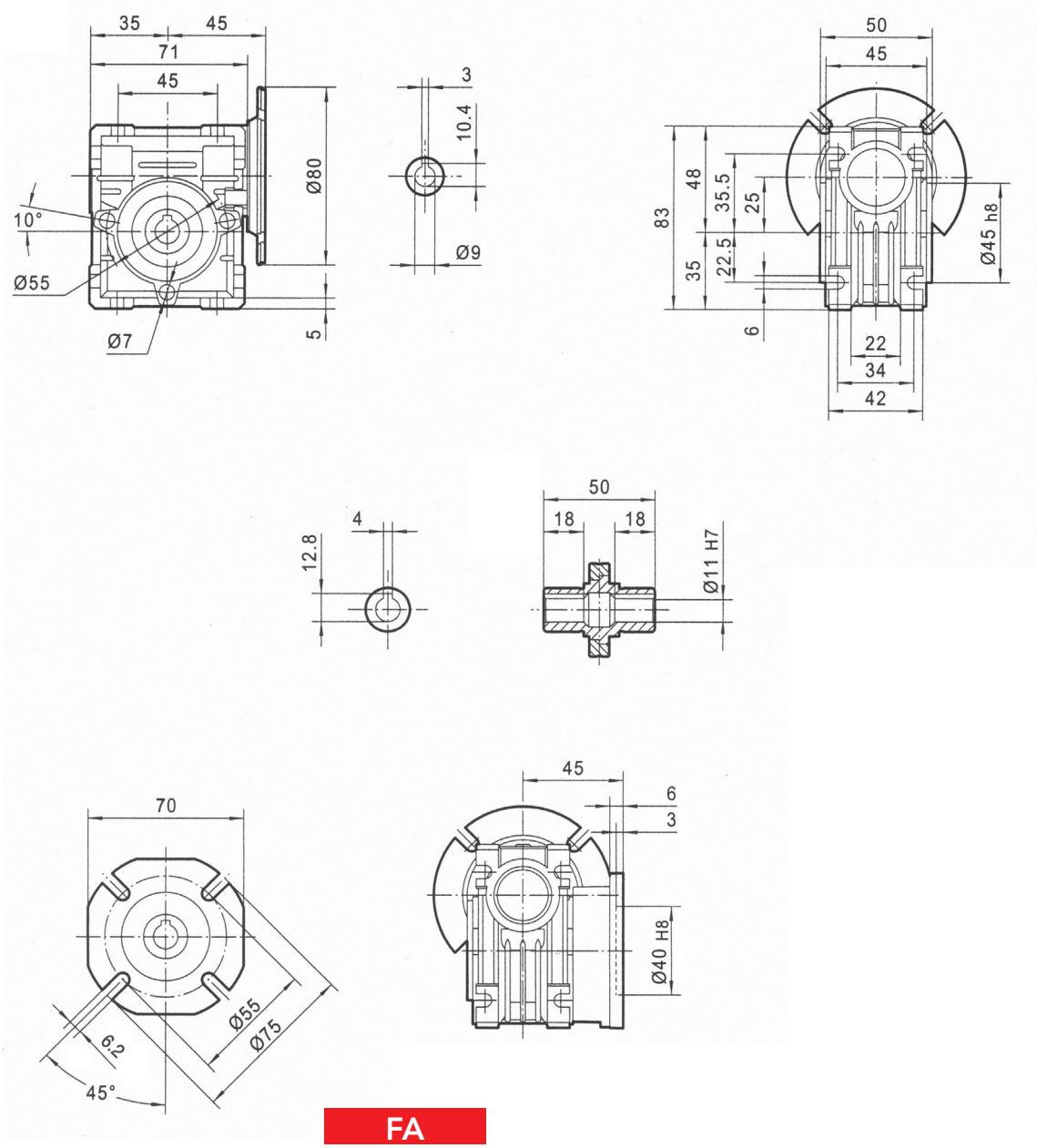
TERMINAL BOX POSITION

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



Weight 0.7 Kg excluding motor

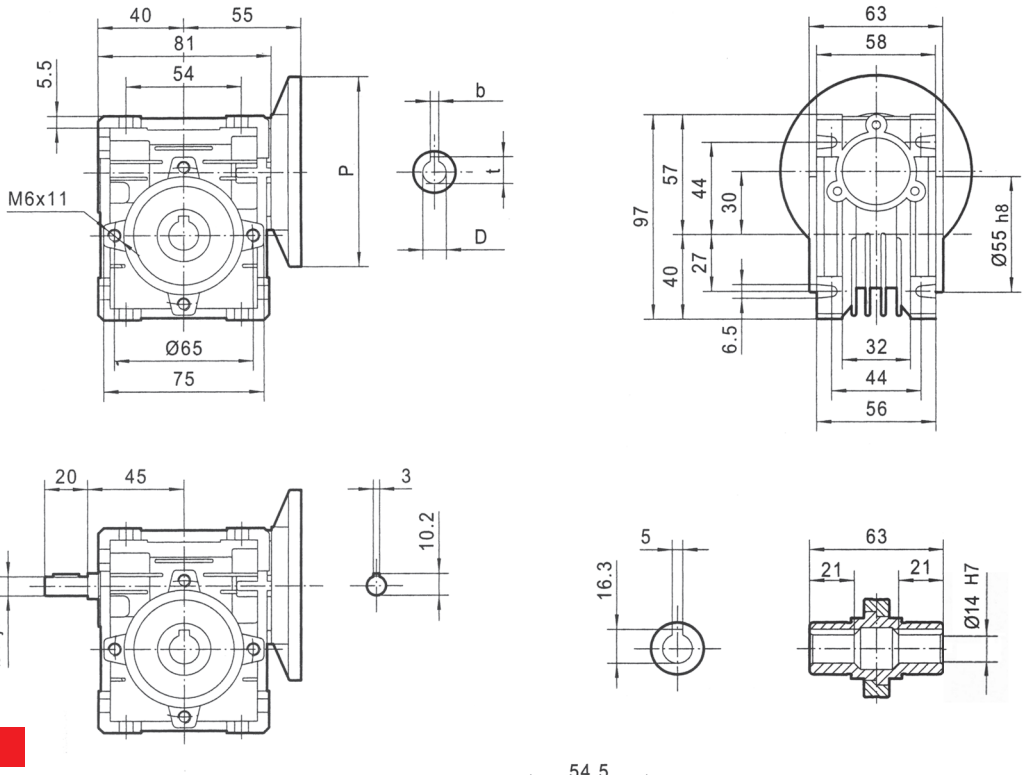
2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

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

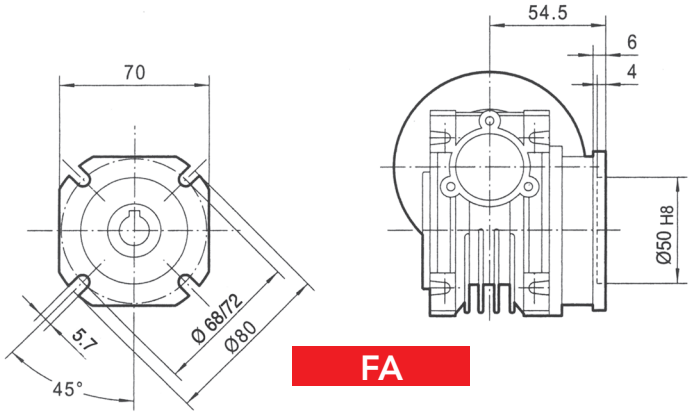
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CHM 030	7.5	186.7	0.22	9	2.1	63/56	B5/B14
	10	140.0	0.22	11	1.6	63/56	B5/B14
	15	93.3	0.22	16	1.0	63/56	B5/B14
	20	70.0	0.22	20	0.9	63/56	B5/B14
	25	56.0	0.18	20	1.0	63/56	B5/B14
	30	46.7	0.18	22	0.9	63/56	B5/B14
	40	35.0	0.18	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



E



FA

PAM IEC	P	De8	b	t	PAM IEC	P	De8	b	t
63B5	140	11	4	12.8	63B14	90	11	4	12.8
56B5	120	9	3	10.4	56B14	80	9	3	10.4

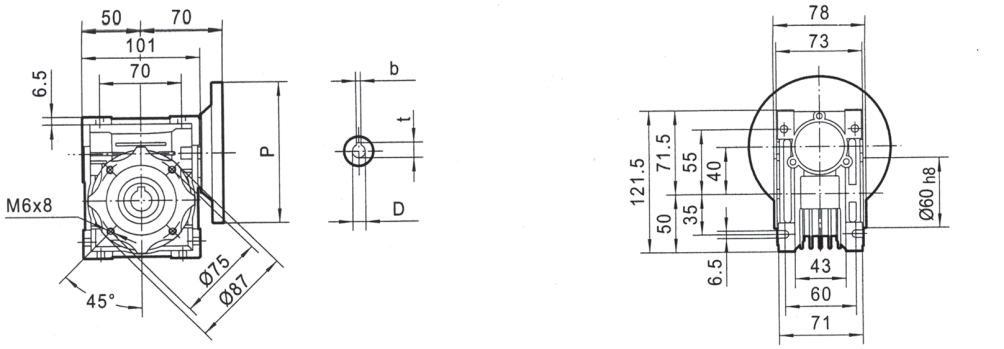
Weight 1.2 Kg excluding motor

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



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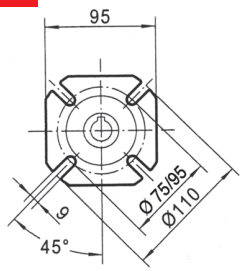

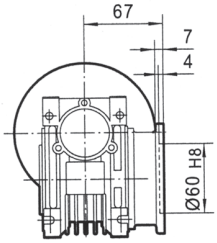

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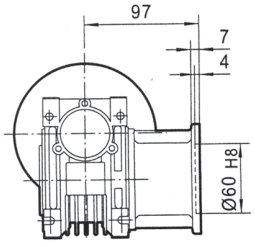

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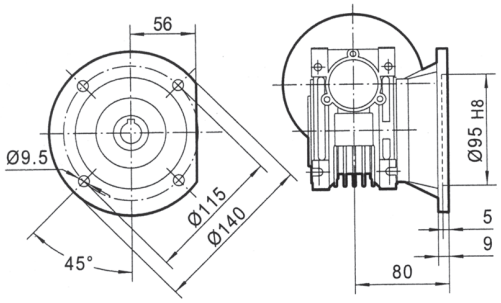
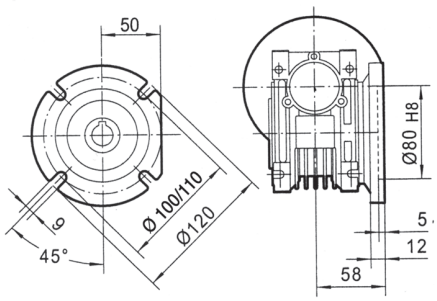


FC



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

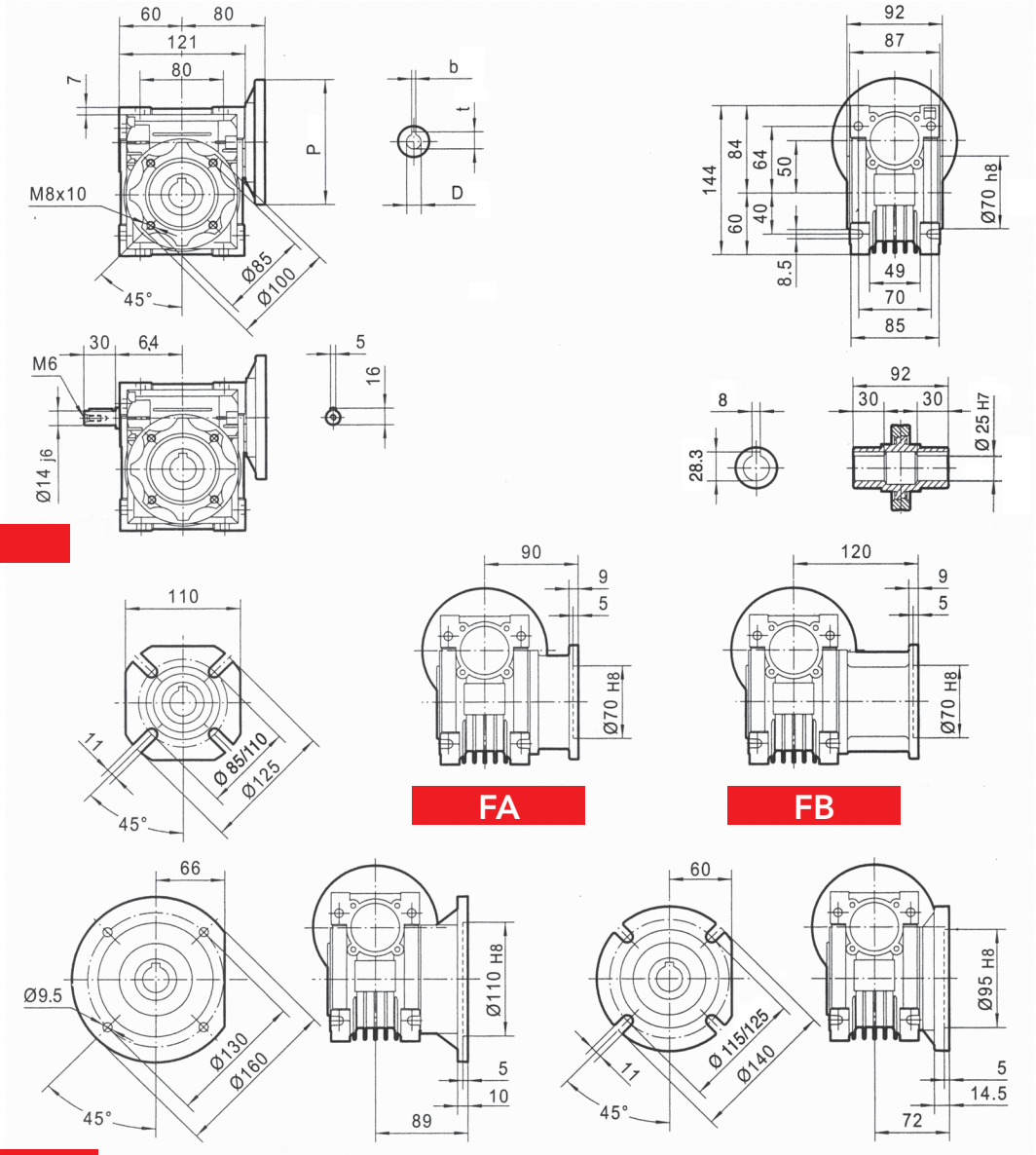
Weight 2.3 Kg excluding motor

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



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

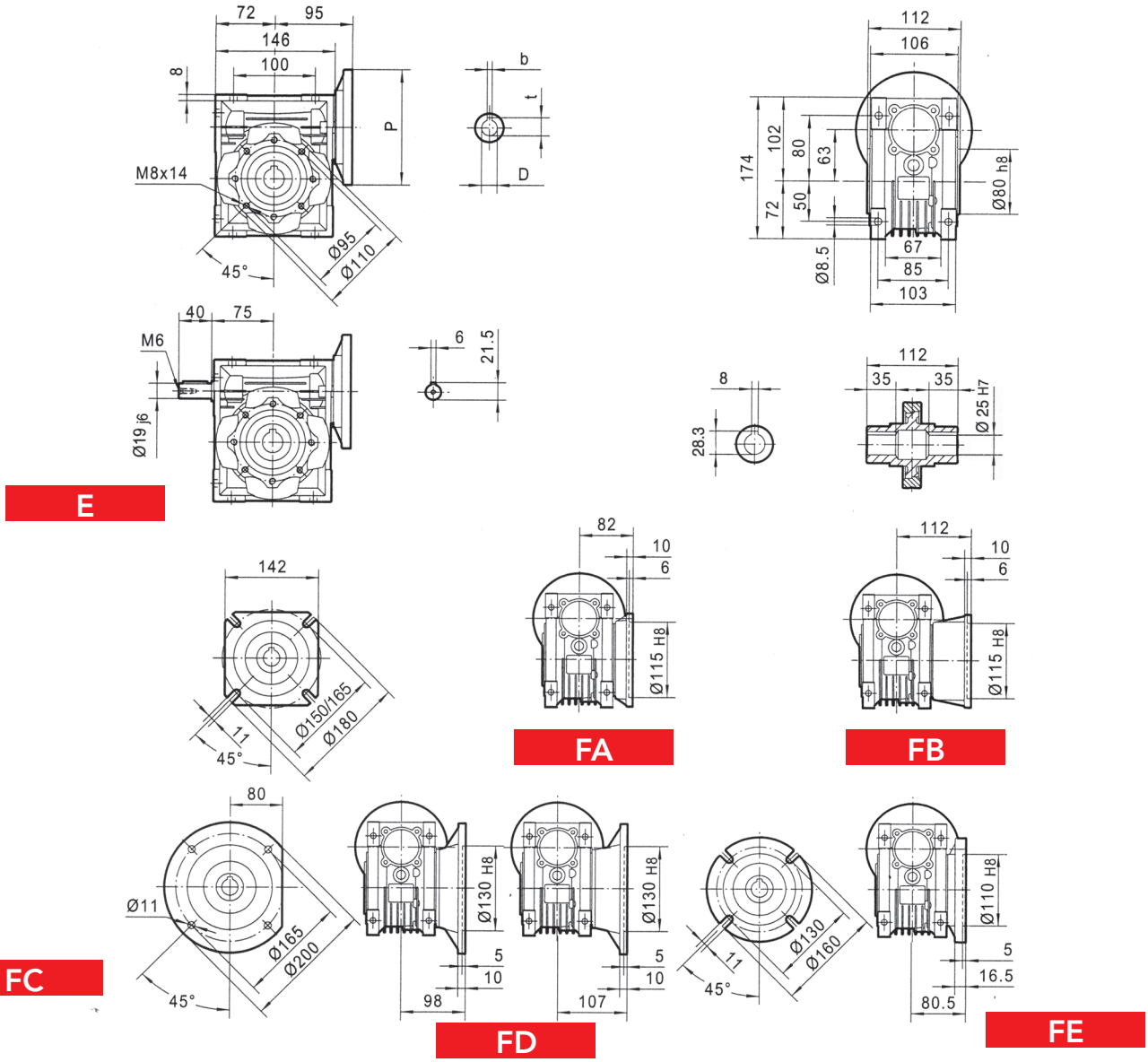
PAM IEC	P	DE8	b	t
80B14	120	19	6	21.8
71B14	105	14	5	16.3

Weight 3.5 Kg excluding motor

CHM 063 - 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 063	7.5	186.7	1.50	67.4	1.8	90/80	B5/B14
	10	140.0	1.50	88.6	1.4	90/80	B5/B14
	15	93.3	1.50	126	1.19	90/80	B5/B14
	20	70.0	1.50	164	0.8	90/80	B5/B14
	25	56.0	1.10	145	0.9	90/80	B5/B14
	30	46.7	1.10	165	1.0	90/80	B5/B14
	40	35.0	0.75	143	1.0	80/71	B5/B14
	50	28.0	0.55	122	1.1	80/71	B5/B14
	60	23.3	0.55	138	0.9	80/71	B5/B14
	80	17.5	0.37	114	1.1	80/71	B5/B14
	100	14.0	0.37	127	0.9	71	B5/B14

DIMENSIONS



PAM IEC	P	DE8	b	t
90B5	200	24	8	27.3
80B5	200	19	6	21.8
71B5	160	14	5	16.3

PAM IEC	P	DE8	b	t
90B14	140	24	8	27.3
80B14	120	19	6	21.8
71B14	105	14	5	16.3

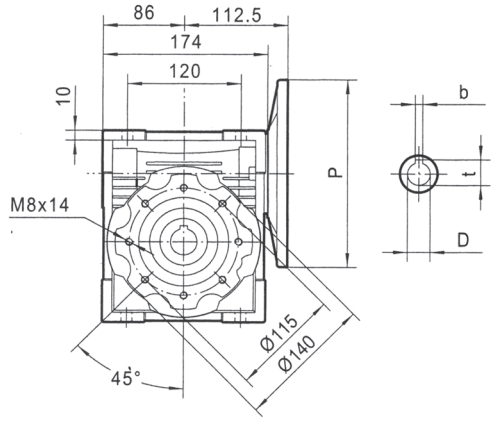
Weight 6.2 Kg excluding motor

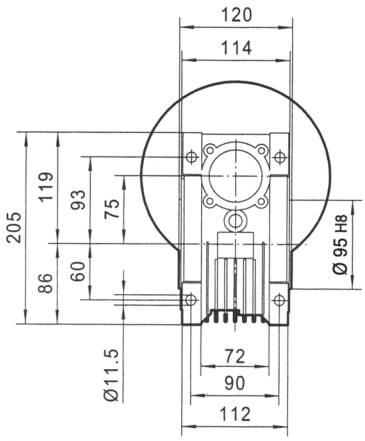
CHM 075 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

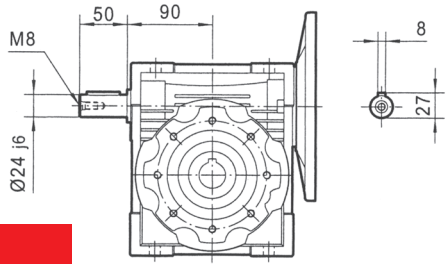
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CHM 075	7.5	186.7	4.00	180	1.0	100/90	B5/B14
	10	140.0	4.00	237	0.8	100/90	B5/B14
	15	93.3	3.00	260	0.8	100/90	B5/B14
	20	70.0	1.50	167	1.2	90/80	B5/B14
	25	56.0	1.50	204	1.0	90/80	B5/B14
	30	46.7	1.50	232	1.0	90/80	B5/B14
	40	35.0	1.10	214	1.0	90/80	B5/B14
	50	28.0	0.75	176	1.2	90/80/71	B5/B14*
	60	23.3	0.75	199	1.0	80/71	B5/B14*
	80	17.5	0.55	178	1.1	80/71	B5/B14*
	100	14.0	0.55	203	0.9	80/71	B5/B14*

* 71 only B5

DIMENSIONS







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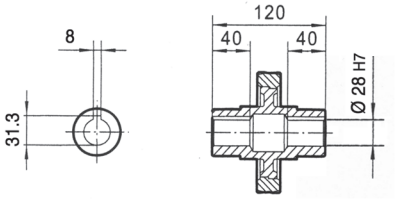
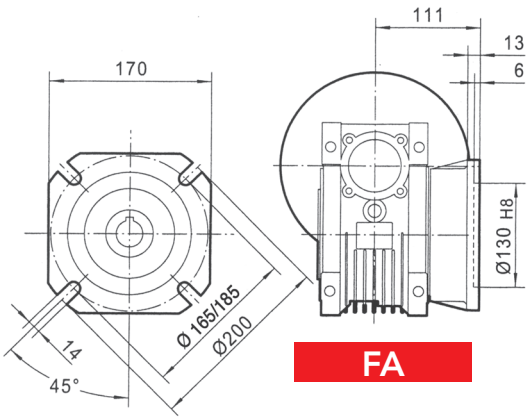
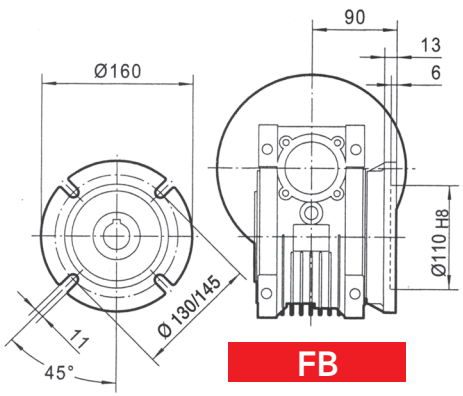




FA



FB

PAM IEC	P	DE8	b	t
100/112B5	250	28	8	31.3
90B5	200	24	8	27.3
80B5	200	19	6	21.8
71B5	160	14	5	16.3

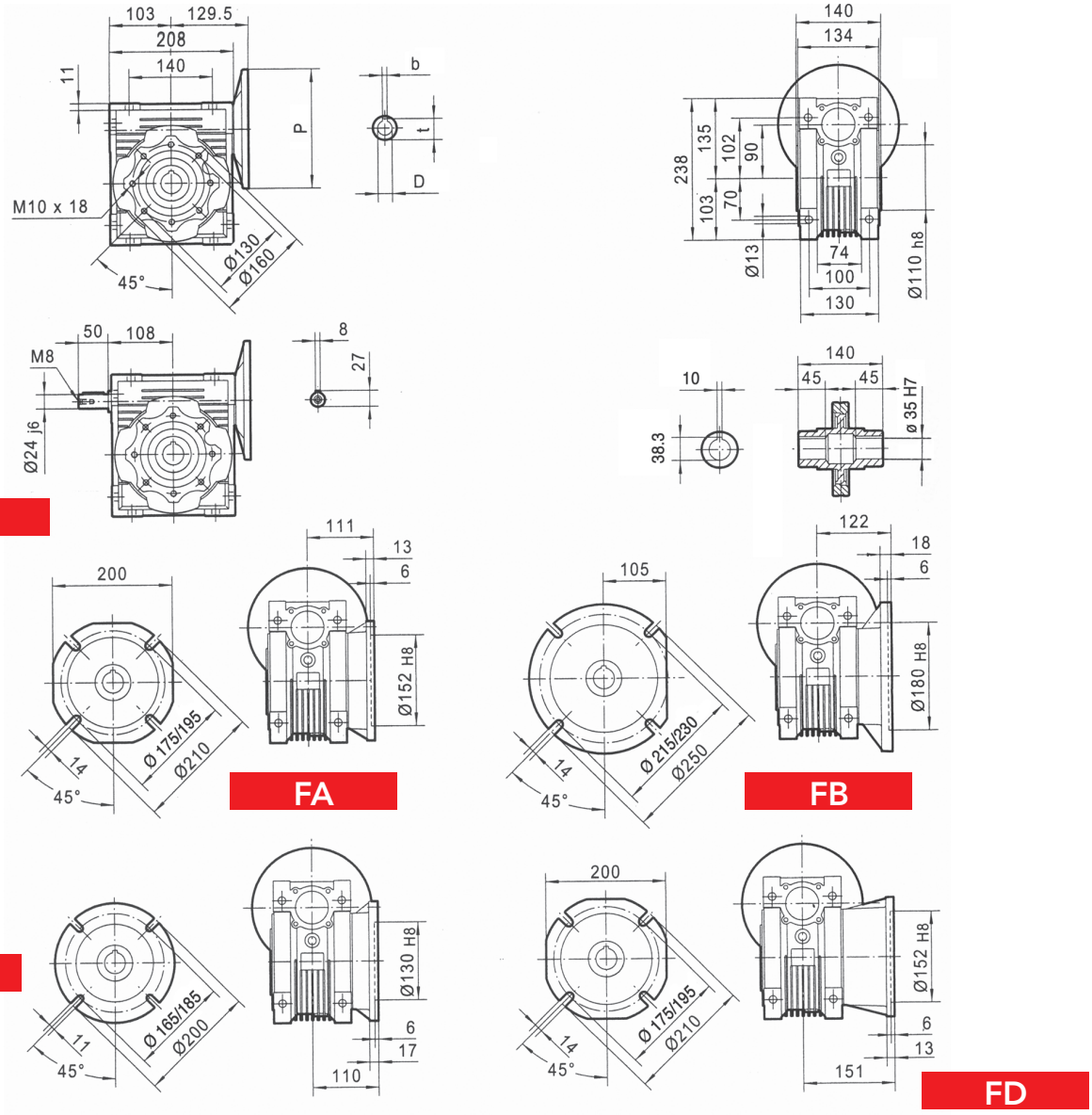
PAM IEC	P	DE8	b	t
100/112B14	160	28	8	31.3
90B14	140	24	8	27.3
80B14	120	19	6	21.8

Weight 9 Kg excluding motor

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



PAM IEC	P	DE8	b	t
100/112B5	250	28	8	31.3
90B5	200	24	8	27.3
80B5	200	19	6	21.8

PAM IEC	P	DE8	b	t
100/112B14	160	28	8	31.3
90B14	140	24	8	27.3
80B14	120	19	6	21.8

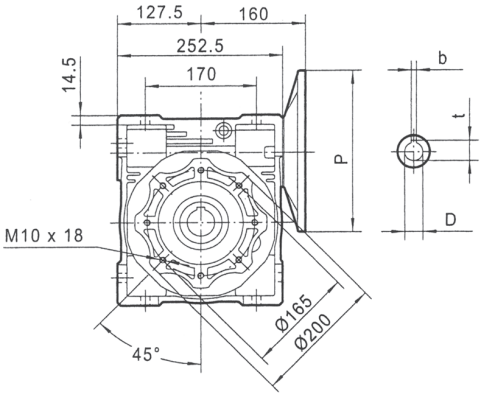
Weight 13 Kg excluding motor

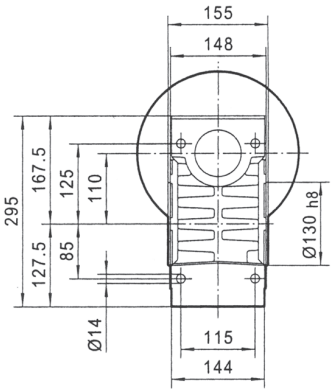
CHM 110 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

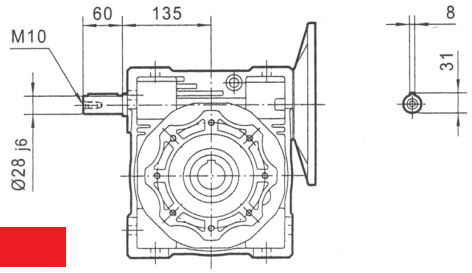
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CHM 110	7.5	186.7	7.50	344	1.6	132/112/100	B5/B14
	10	140.0	7.50	453	1.3	132/112/100	B5/B14
	15	93.3	7.50	659	1.0	132/112/100	B5/B14
	20	70.0	5.50	635	1.0	132/112/100	B5/B14
	25	56.0	4.00	573	1.2	112/100	B5/B14
	30	46.7	4.00	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*

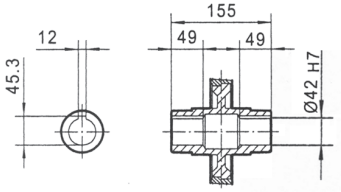
* 90 only B5

DIMENSIONS

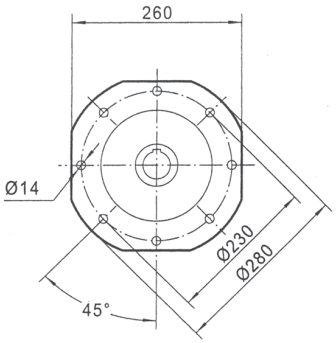


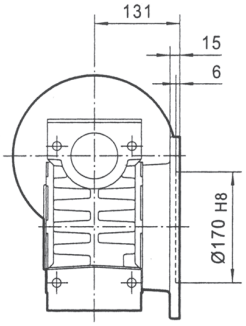






E





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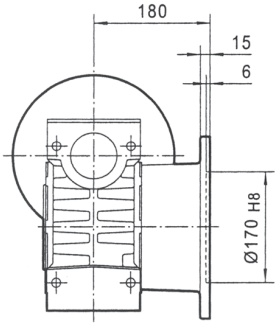


FB

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

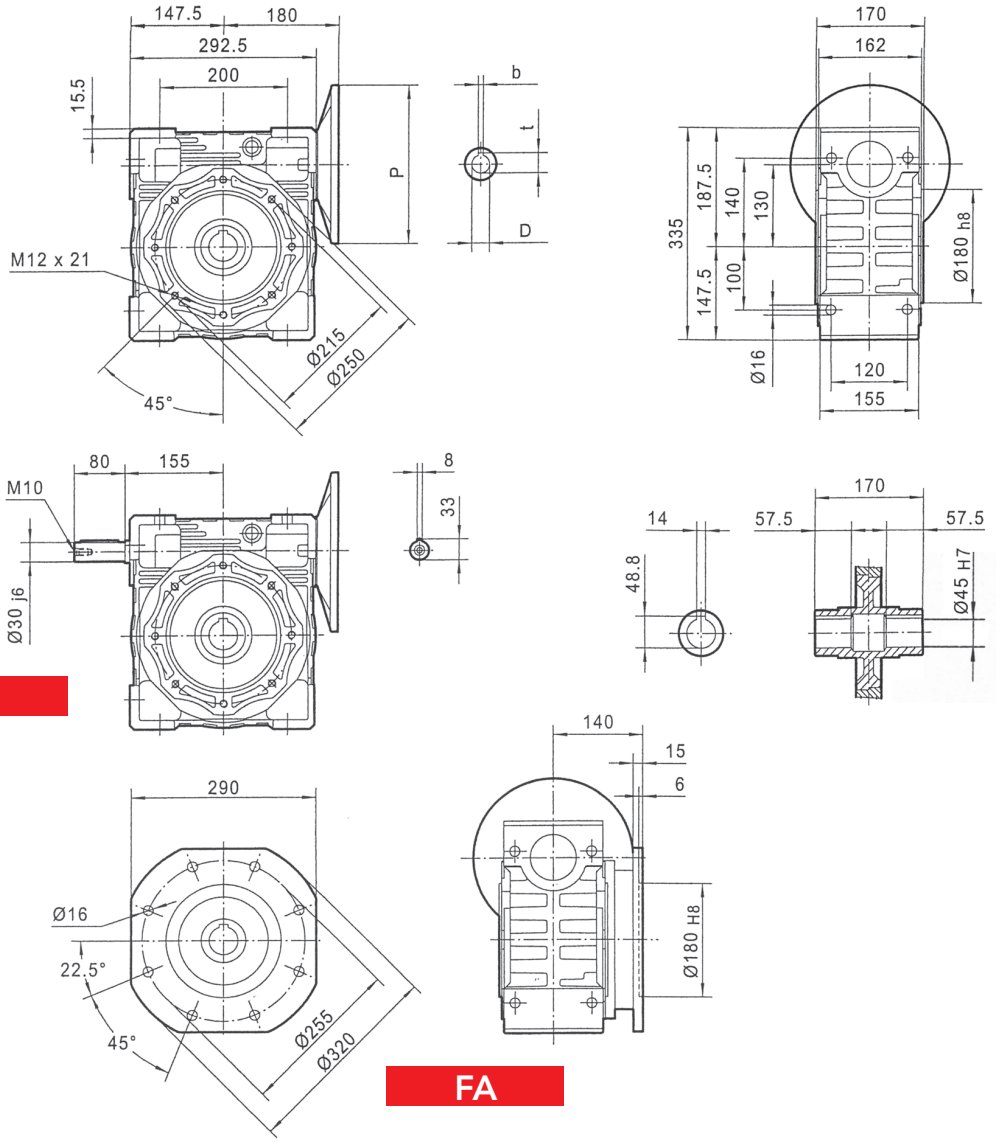
Weight 35 Kg excluding motor

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
132B5	300	38	10	41.3
112B5	250	28	8	31.3
100B5	250	28	8	31.3
90B5	200	24	8	27.3

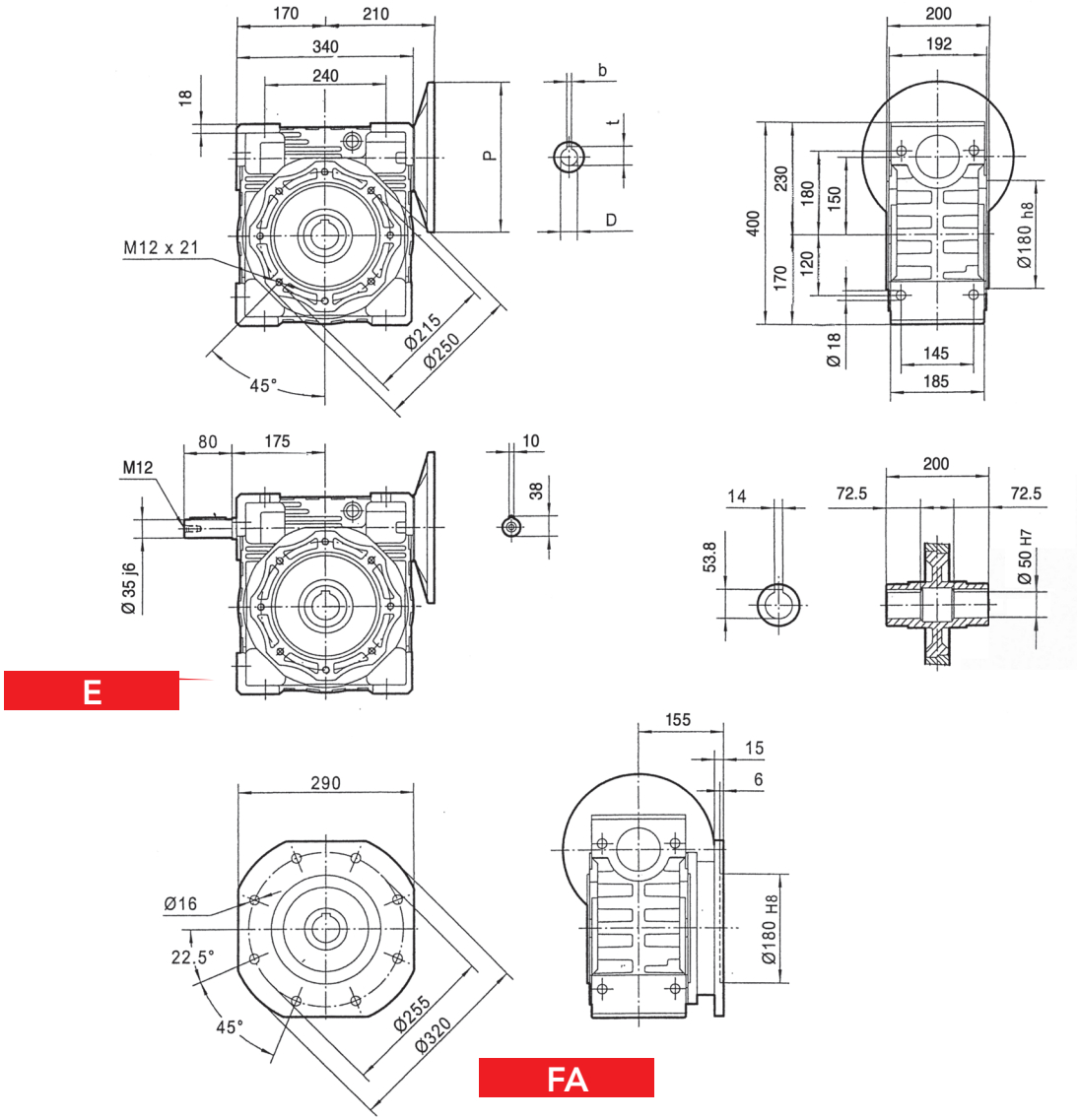
PAM IEC	P	DE8	b	t
132B14	200	38	10	41.3
112B14	160	28	8	31.3
100B14	160	28	8	31.3

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

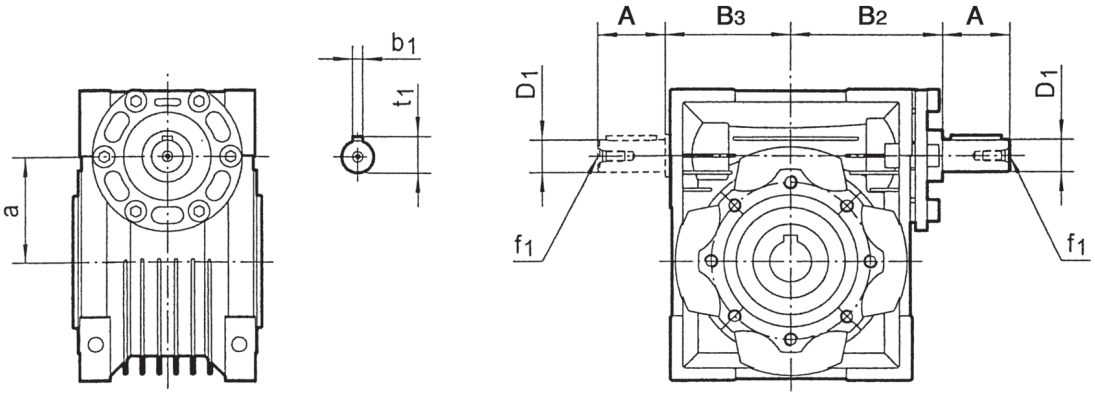
DIMENSIONS



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

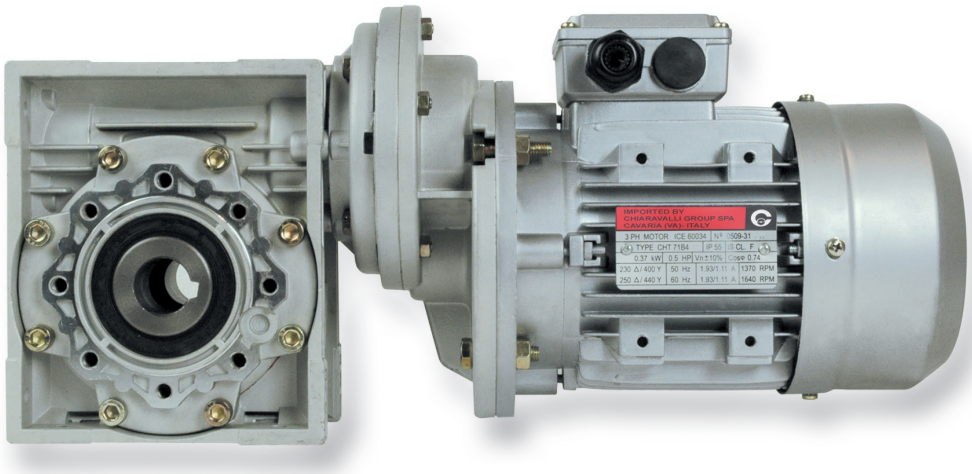
Weight 84 Kg excluding motor

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



For the missing dimensions, please refer to the CHM correspondent

2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B



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
	71	3	71B5	the position of these, when the pre-stage module
	80	3	80B5	is supplied by itself it is prepared for
	90	2.45	90B5	universal assembly.

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**

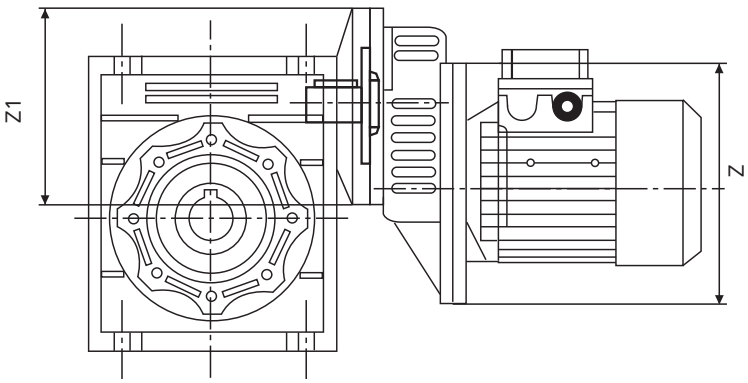
If the motor is also required, please specify:

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
CHPC63 CHM040	90	15.6	0.18	61
	120	11.7	0.18	52
	150	9.3	0.18	46
	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
CHPC71 CHM075	90	15.6	0.37	153
	120	11.7	0.37	190
	150	9.3	0.37	220
	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
CHPC63 CHM050	90	15.6	0.18	69
	120	11.7	0.18	85
	150	9.3	0.18	89
	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
CHPC80 CHM075	90	15.6	0.75	307
	120	11.7	0.55	278
	150	9.3	0.55	260

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

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

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

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

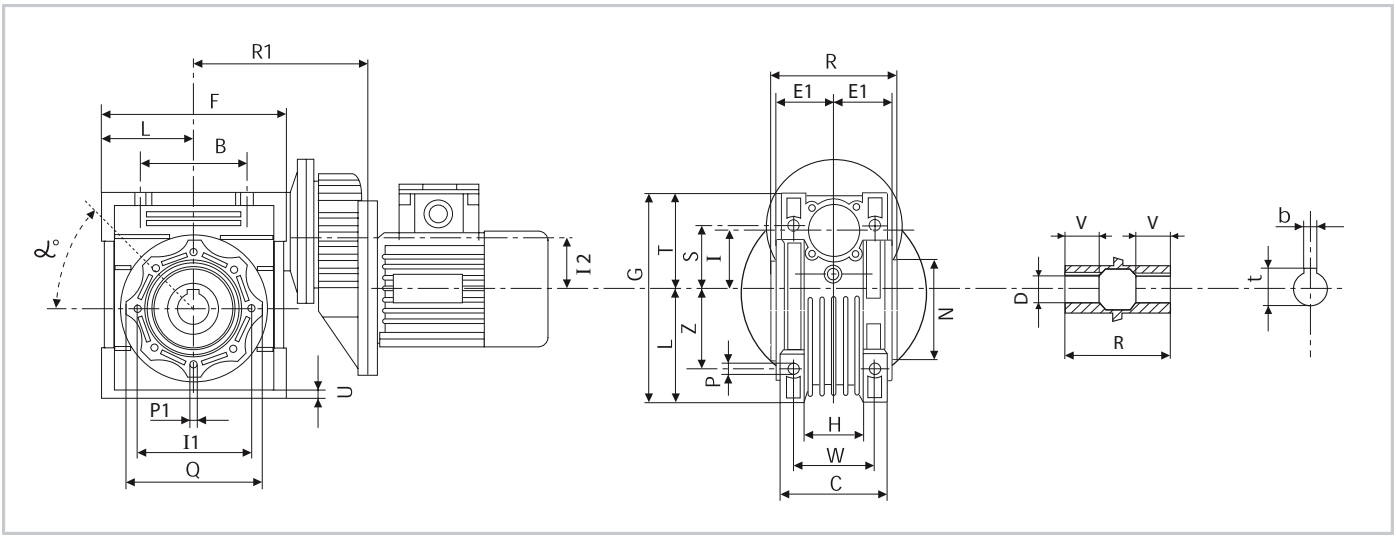
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHPC71 CHM063	90	15.6	0.37	145
	90	15.6	0.25	98
	120	11.7	0.37	184
	120	11.7	0.25	124
	150	9.3	0.37	192
	150	9.3	0.25	129
	180	7.8	0.25	164
	240	5.8	0.25	139
	300	4.7	0.25	128

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHPC80 CHM110	120	11.7	0.75	421
	150	9.3	0.75	496
	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
CHPC90 CHM110	98	14.3	1.50	679
	122.5	11.4	1.50	801
	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
CHPC90 CHM130	98	14.3	1.50	679
	122.5	11.4	1.50	813
	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.

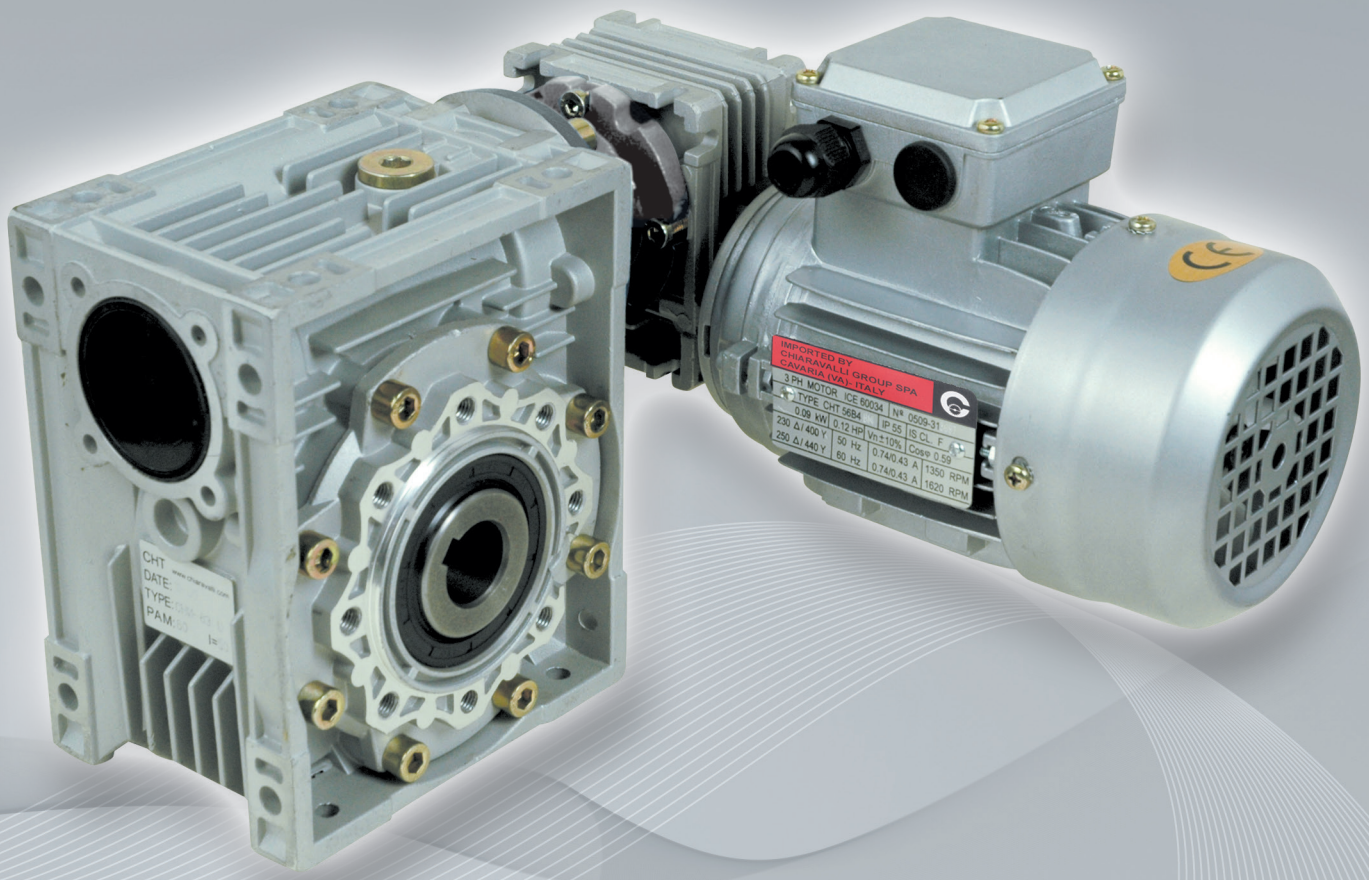


CHPC CHM	B	F	D(H7)	G	H	R1	R	L	I	I2	C	I1	N(h8)	E1	P	Q	S	T
63+040	70	100	18	121.5	43	117	78	50	40	40	71	75	60	36.5	6.5	87	55	71.5
63+050	80	120	25	144	49	127	92	60	50	40	85	85	70	43.5	8.5	100	64	84
71+050	80	120	25	144	49	135	92	60	50	50	85	85	70	43.5	8.5	100	64	84
63+063	100	144	25	174	67	142	112	72	63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

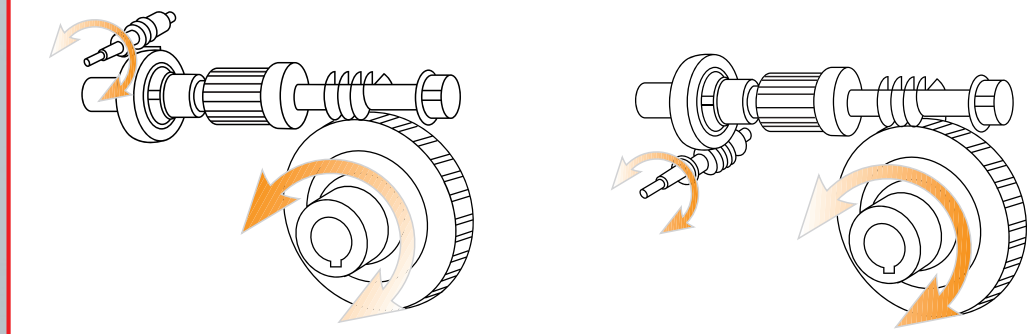
CHPC CHM	U	V	Z	W	P1	α	b	t	Weight in kg. excluding motor
63+040	6.5	26	35	60	M6x8n.4	45°	6	20.8	3.9
63+050	7	30	40	70	M8x10n.4	45°	8	28.3	5.2
71+050	7	30	40	70	M8x10n.4	45°	8	28.3	5.8
63+063	8	36	50	85	M8x14n.8	45°	8	28.3	7.9
71+063	8	36	50	85	M8x14n.8	45°	8	28.3	8.5
71+075	10	40	60	90	M8x14n.8	45°	8	31.3	11
80+075	10	40	60	90	M8x14n.8	45°	8	31.3	12.6
71+090	11	45	70	100	M10x18n.8	45°	10	38.3	14.3
80+090	11	45	70	100	M10x18n.8	45°	10	38.3	16.2
80(90)+110	14	50	85	115	M10x18n.8	45°	12	45.3	39
80(90)+130	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***
Quantity, availability and prices with Chiaravalli B2B



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 PAGE 31 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:

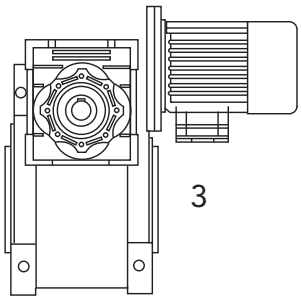
Size	es. 63 B4
Power	es. Kw 0.18
Poles	es. 4
Voltage	es. V230/400
Frequency	es. 50 Hz
Flange	es. B14

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.

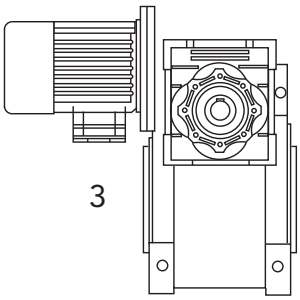
1) see page 48
2) see from page 31 to page 40
3) see page 30
4) see page 47
5) lack of instructions indicates that the gear is not equipped with an output flange.

2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

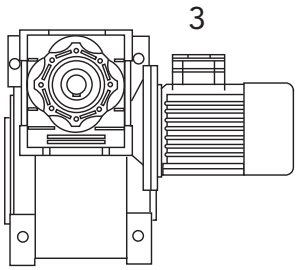
OAD



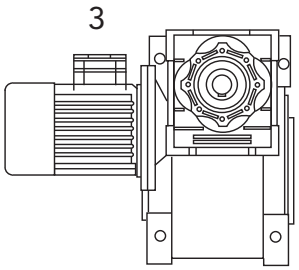
OAS



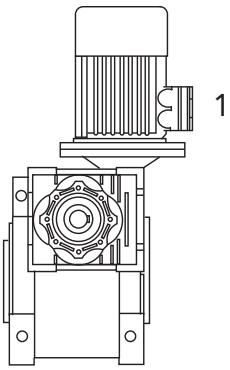
OBD



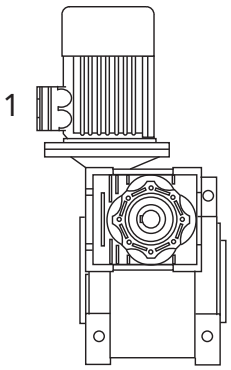
OBS



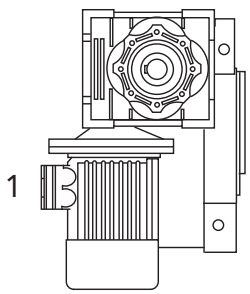
VAD



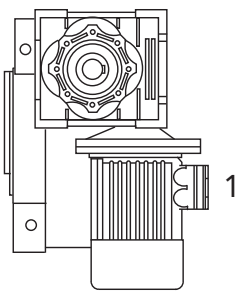
VAS



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.

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

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHM 025/030	300	4.7	0.09*	31
	400	3.5	0.09*	28
	500	2.8	0.09*	34
	600	2.3	0.09*	31
	750	1.9	0.09*	34
	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
CHM 040/075	300	4.7	0.37	405
	400	3.5	0.25	336
	500	2.8	0.25	307
	600	2.3	0.18	362
	750	1.9	0.18	391
	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
CHM 030/040	300	4.7	0.09*	70
	400	3.5	0.09*	63
	500	2.8	0.09*	57
	600	2.3	0.09*	72
	750	1.9	0.09*	72
	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
CHM 040/090	300	4.7	0.37	405
	400	3.5	0.37	523
	500	2.8	0.37	550
	600	2.3	0.37	605
	750	1.9	0.25	538
	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

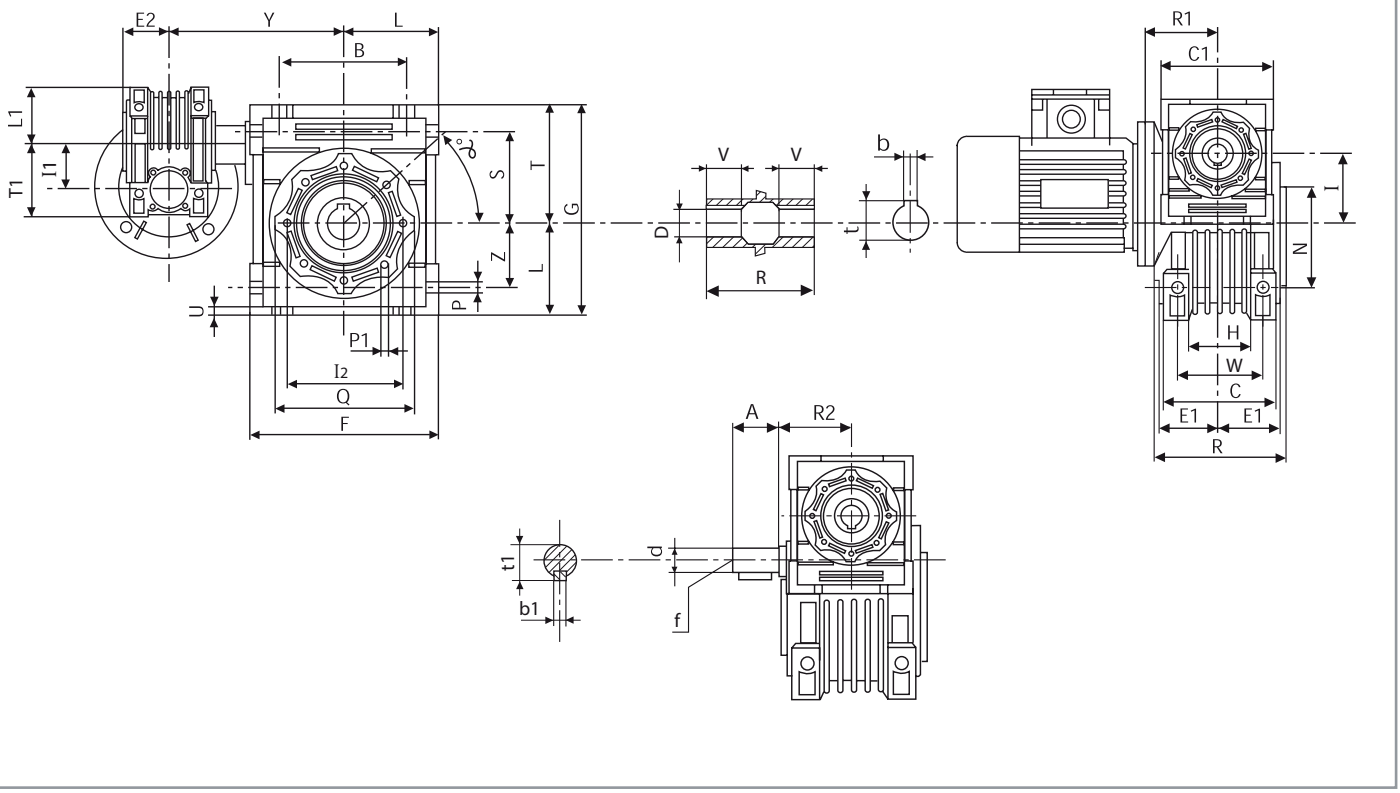
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHM 030/050	300	4.7	0.18	142
	400	3.5	0.18	127
	500	2.8	0.09	123
	600	2.3	0.09	143
	750	1.9	0.09	148
	900	1.6	0.09*	141
	1200	1.2	0.09*	118
	1500	0.9	0.09*	139
	1800	0.8	0.09*	155
	2400	0.6	0.09*	124

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHM 050/110	300	4.7	0.75	871
	400	3.5	0.75	1013
	500	2.8	0.55	984
	600	2.3	0.55	1062
	750	1.9	0.55	1128
	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
CHM 030/063	300	4.7	0.22	210
	400	3.5	0.18	222
	500	2.8	0.18	205
	600	2.3	0.18*	208
	750	1.9	0.18*	216
	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
CHM 063/130	300	4.7	1.50	1789
	400	3.5	1.10	1519
	500	2.8	1.10	1629
	600	2.3	0.75	1631
	750	1.9	0.75	1804
	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	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	∂	b	b1	f	t	t1	Weight in Kg. 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

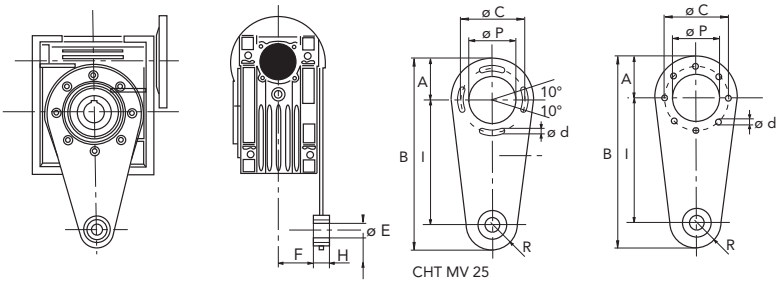
N.B. For the side flange and double extended input worm dimensions see the corresponding size of the CHM models.

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

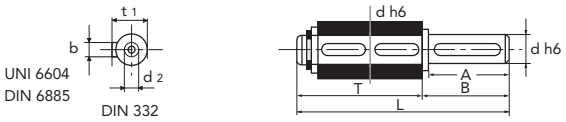
* Without vibration resistant bushing

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



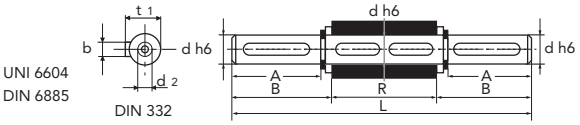
SINGLE OUTPUT SHAFT KIT

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

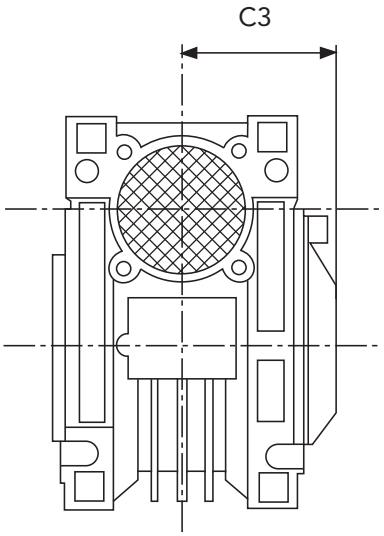


DOUBLE OUTPUT SHAFT KIT

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

SINGLE

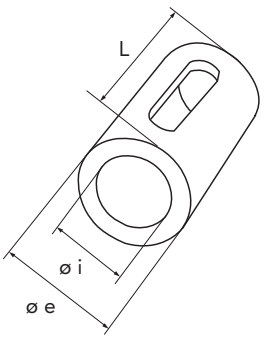
TYPE	ø i/ø e	L	Key	Weight for kit kg
CHT BRM-S	9/11	20	4/3x4x11 RB*	0.006
CHT BRM-S	11/14	30	5/4x6x10 RB*	0.015
CHT BRM-S	14/19	40	6x5x30 *	0.045
CHT BRM-S	19/24	50	6x5.5x20 * 8x5.5x40 *	0.07
CHT BRM-S	24/28	60	8x9x40 *	0.08
CHT BRM-S	28/38	80	10x7x60 *	0.33
CHT BRM-S	38/42	110	12/10x10x48 RB*	0.22

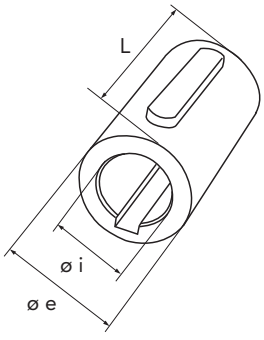
DOUBLE

TYPE	ø i/ø 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



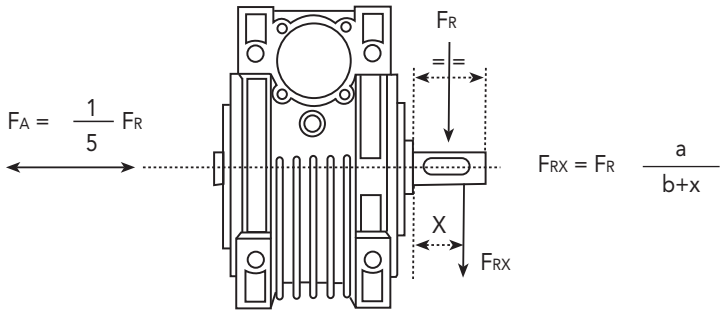


2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

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.

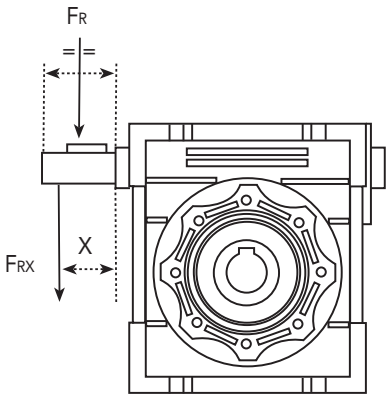
a	GEAR CONSTANT
b	GEAR CONSTANT
x	LOAD DISTANCE FROM SHAFT SHOULDER IN MM.
F_{RX}	RADIAL LOAD IN POSITION X (IN N)
F_R	RADIAL LOAD (N)
F_A	AXIAL LOAD (N)



	SIZES									
Output speed (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

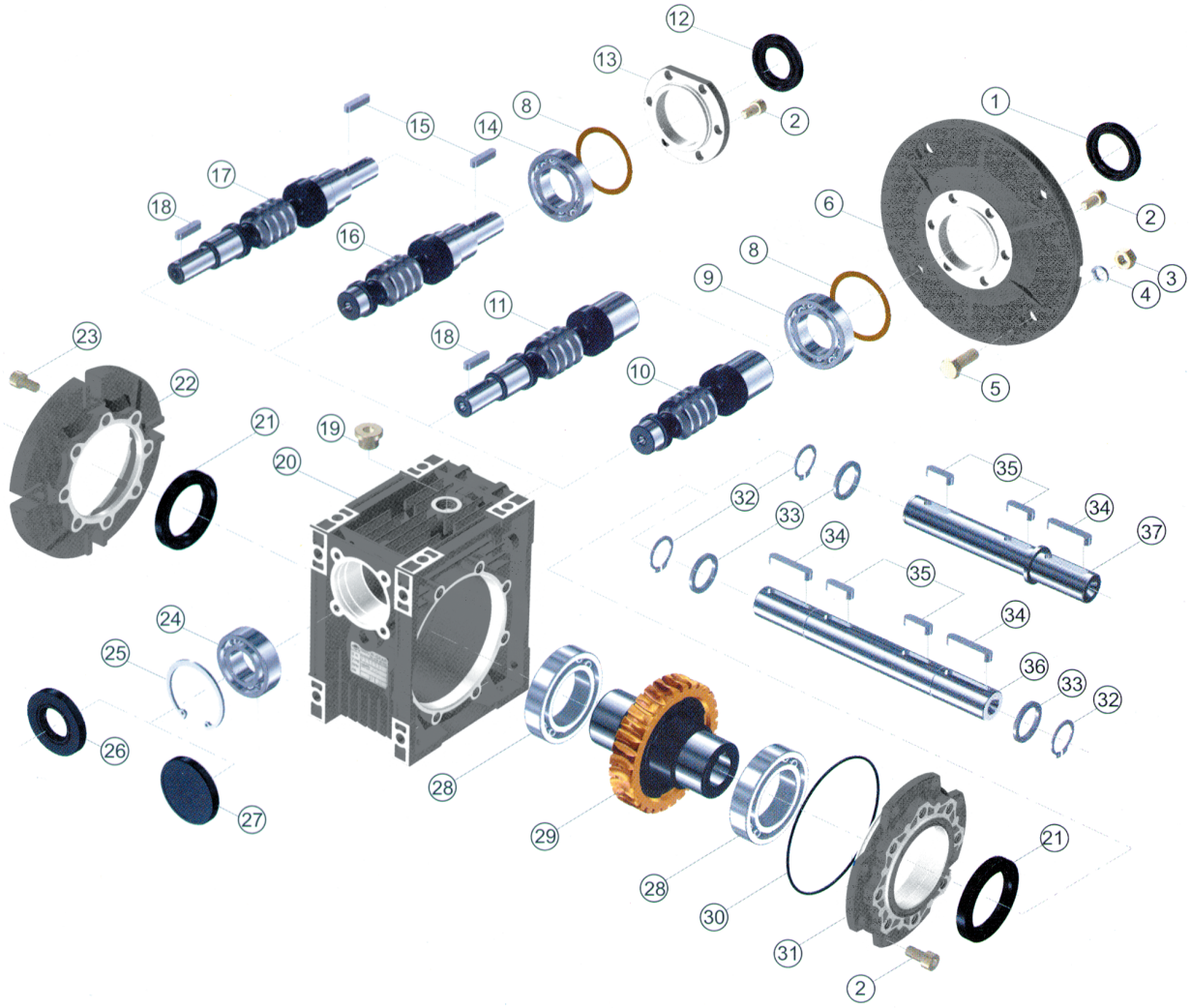
RADIAL LOADS ON THE CENTRE LINE OF THE INPUT SHAFT

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



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

*2D and 3D drawings available on the web site **www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B



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***
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 runin 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

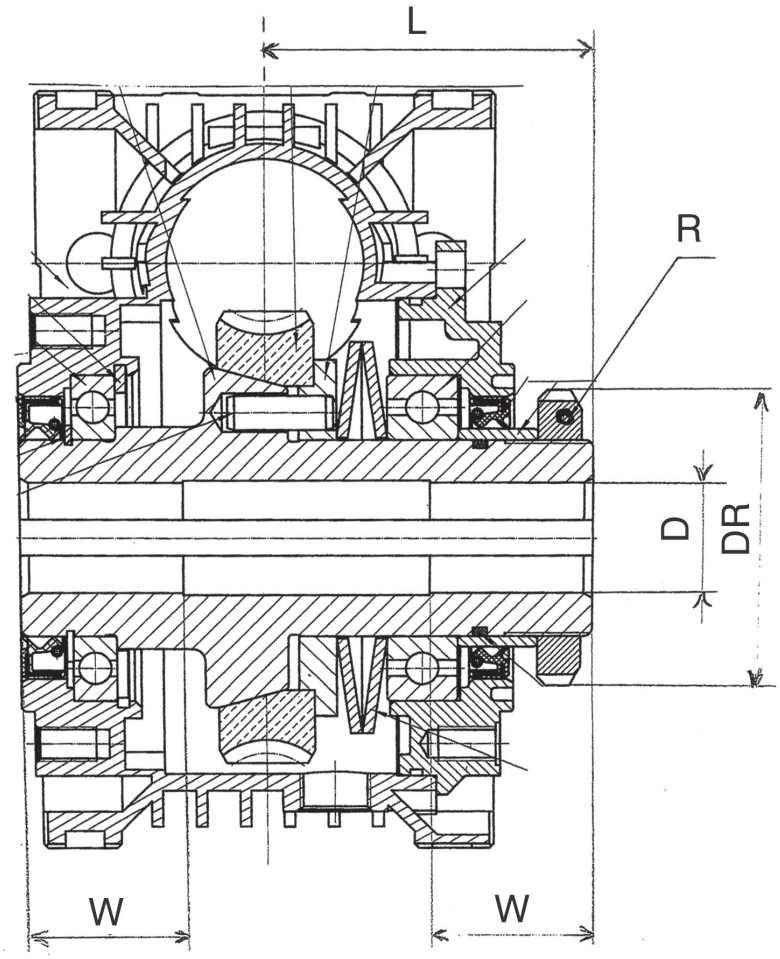
· The packaging in which our gears are delivered should be sent to specialised companies for recycling if possible.

CHIARAVALLI® GROUP SpA

CHML WORM GEARBOXES WITH TORQUE LIMITER

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.

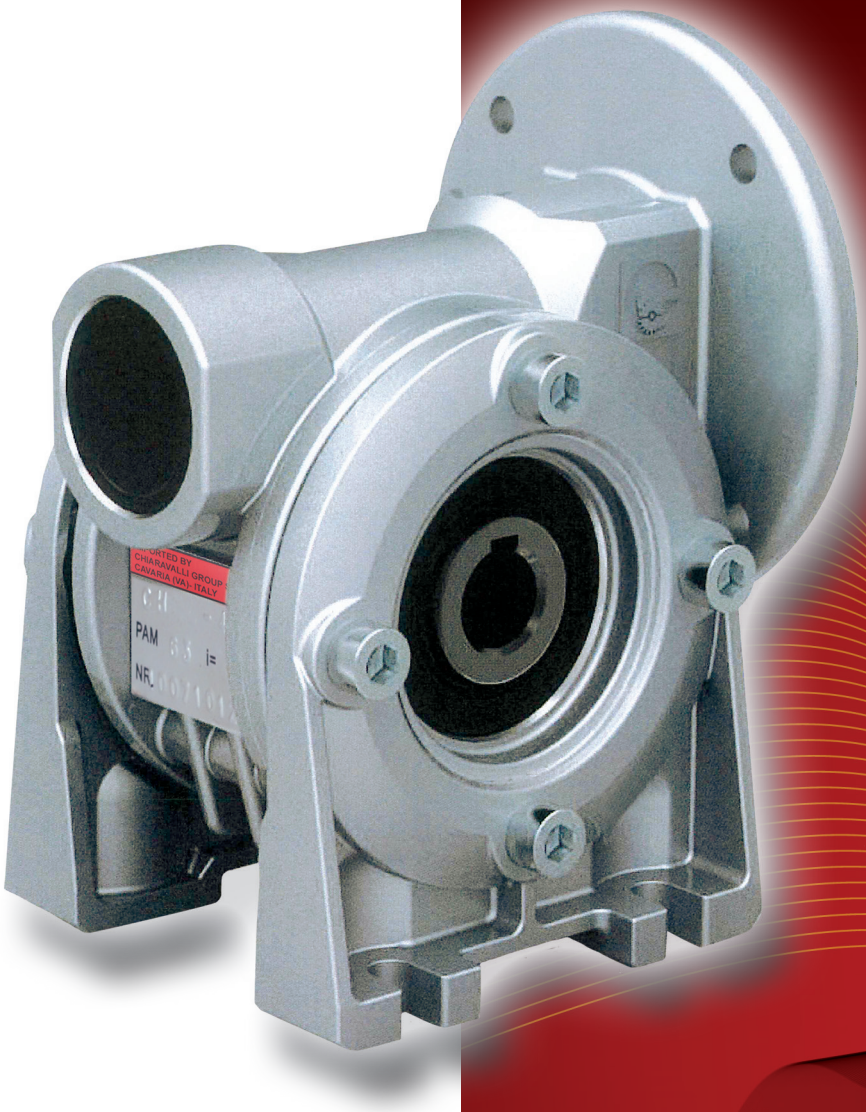
DIMENSIONS



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

*2D and 3D drawings available on the web site **www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

CHIARAVALLI® GROUP SpA



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

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***
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

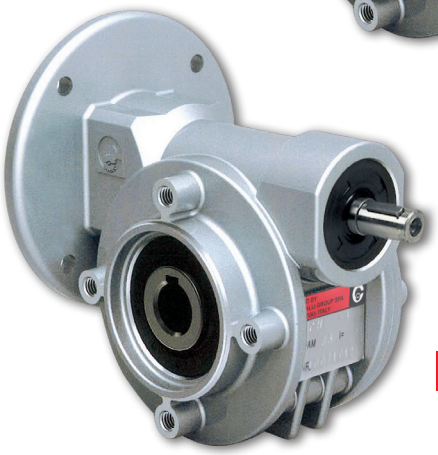
Gears supplied with mounting flanges must be assembled with motors whose shaft and flange tolerances correspond to a "normal" class of quality in order to avoid vibration and forcing of the input bearing. Motors supplied by Chiaravalli Group S.p.A. guarantee this requirement fulfilled.
For ease of consultation,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

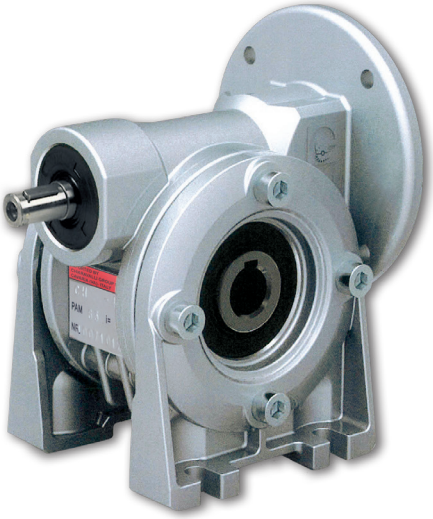
NEW MODEL

CH...

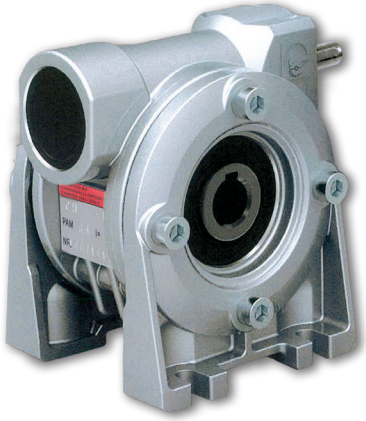
CH...P



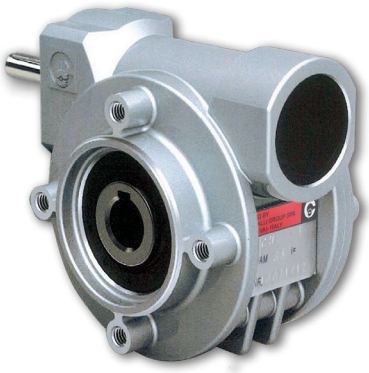
CHE...P



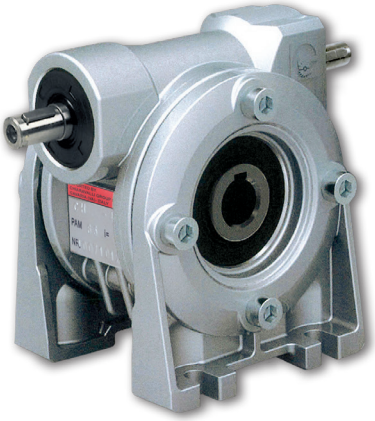
CHE...



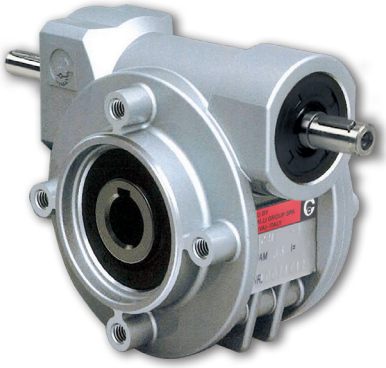
CHR...



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 **CH..P** **CHR** **CHR..P** **CHE** **CHE..P** **CHRE** **CHRE..P**	03	A P PF N V	1 2	**RATIO SEE PAGE 64**	63B5 63B14 56B5 56B14	UNIVERSALE

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

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

ORDER EXAMPLE

CH	**04P**	**FA**	**2**	**35**	**63 B14**
CH	**04**			**10**	**71 B5**

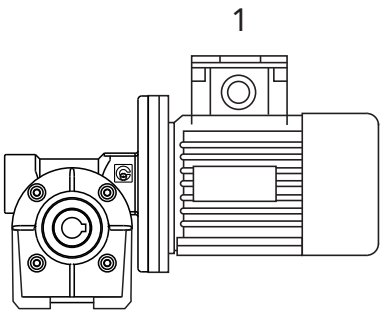
If the motor is also required, please specify:

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

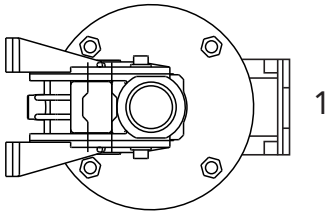
N.B. Gear box required with output flanges F or FA must be ordered PF or PFA version.

1) see page 61
2) see page 63

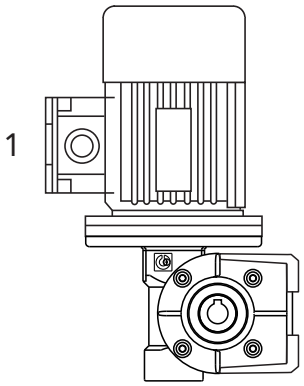
B3



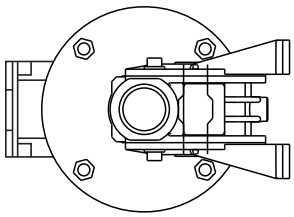
B6



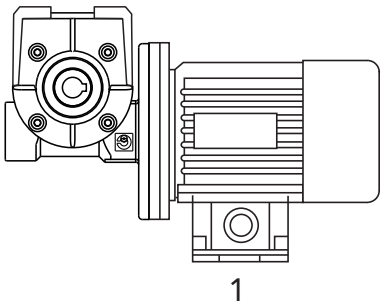
V5



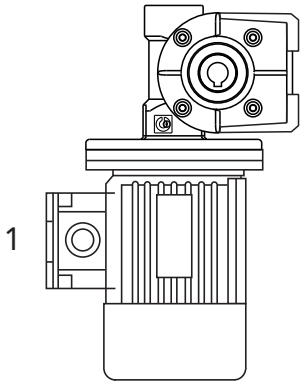
B7



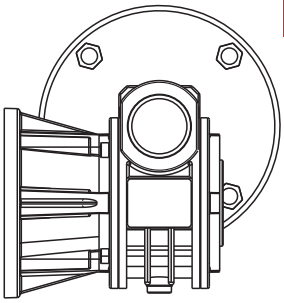
B8



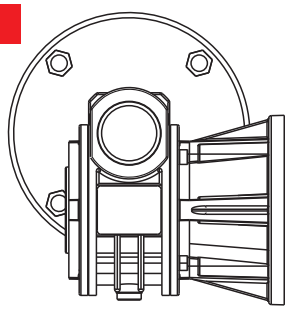
V6

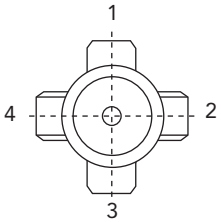


PF1

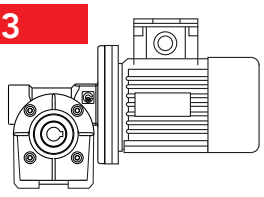


PF2





B3



TERMINAL BOX POSITION

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

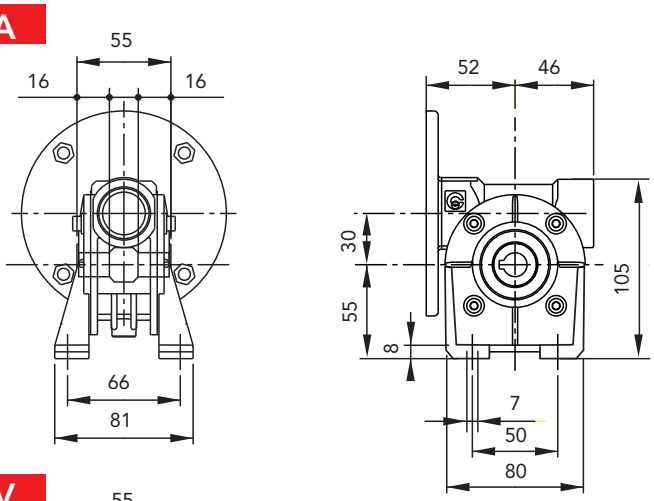
CH 03 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

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

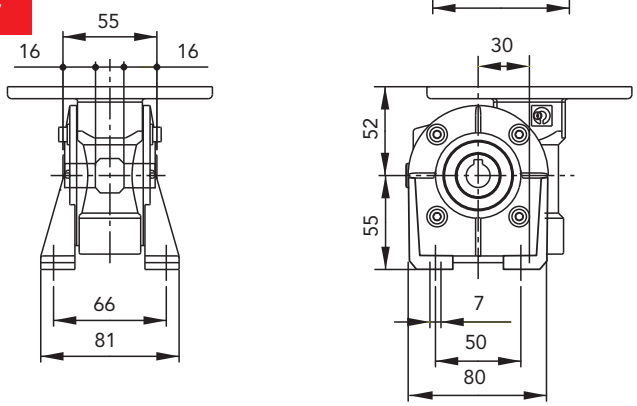
Weight Kg 1

DIMENSIONS

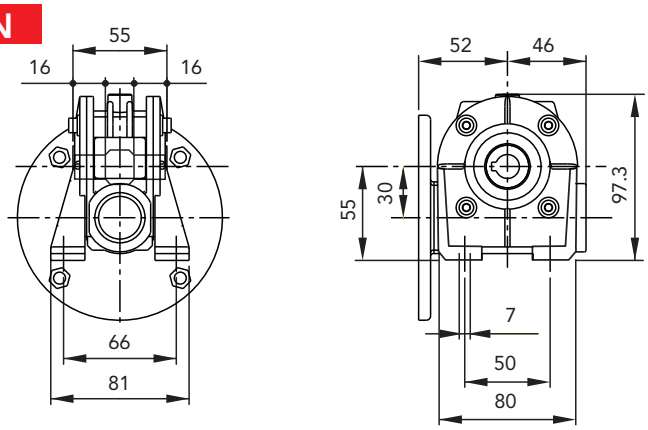
A



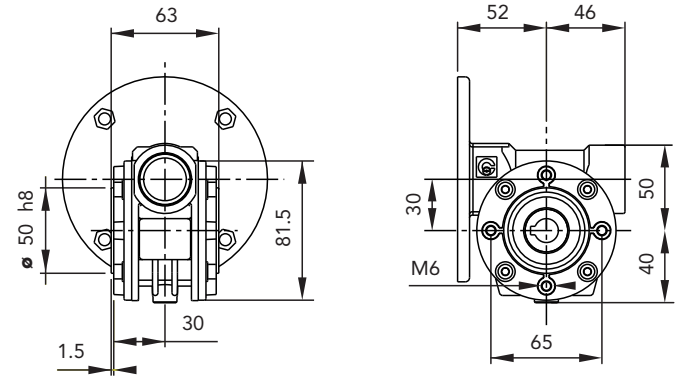
V



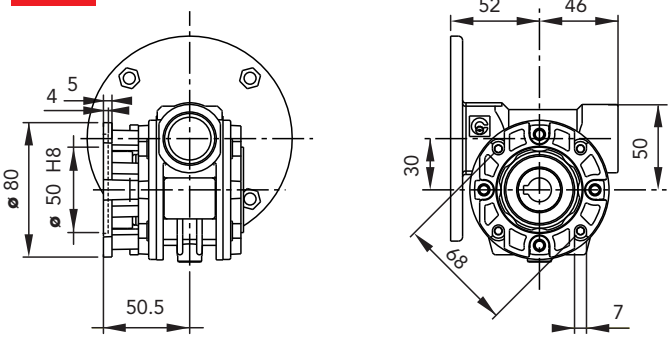
N



P



PF1



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

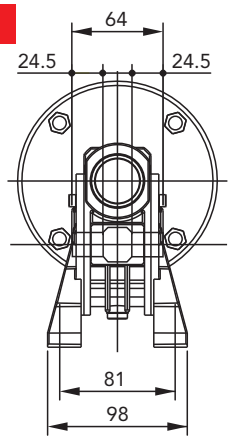
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CH 04	7	200	0.55*	22	1.4	71/63	B5/B14
	10	140	0.55*	30	1.0	71/63	B5/B14
	14	100	0.37	29	1.0	71/63	B5/B14
	20	70	0.37	38	1.0	71/63	B5/B14
	28	50	0.37	40	0.9	71/63	B5/B14
	35	40	0.25	41	0.9	71/63	B5/B14
	46	30	0.18	37	1.0	63	B5/B14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

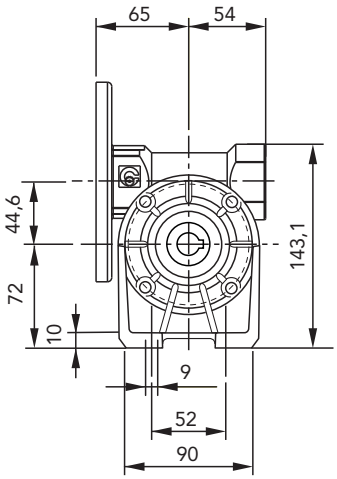
* Motors 71 gr.

Weight Kg 2,1

DIMENSIONS

A





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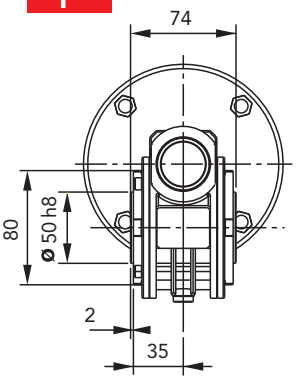

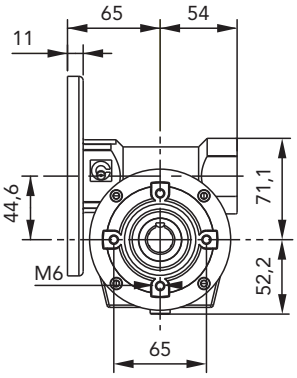

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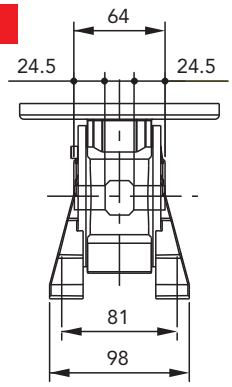

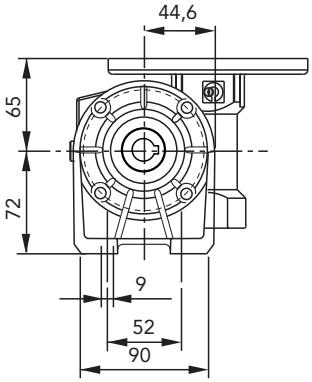

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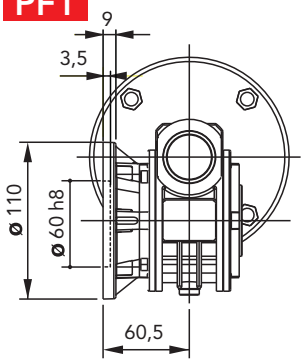

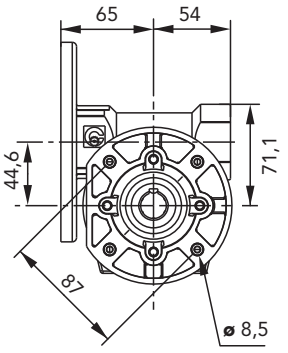

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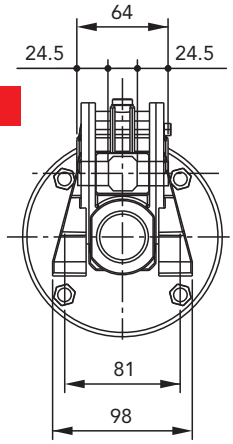

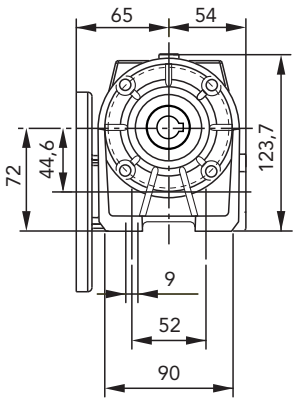

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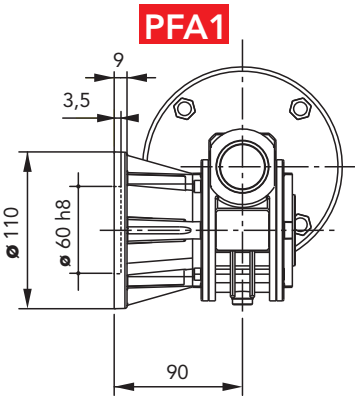
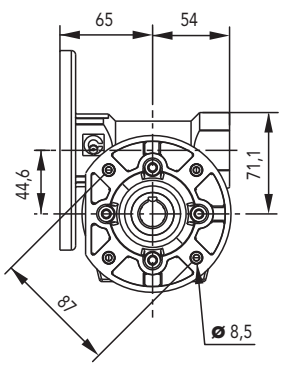




CH 05 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

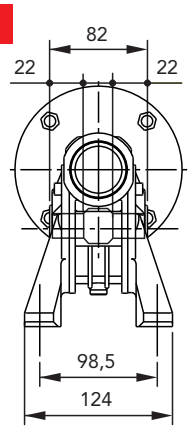
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CH 05	7	200	1.1*	40	1.4	80/71	B5/B14
	10	140	1.1*	49	1.2	80/71	B5/B14
	14	100	0.75	57	1.1	80/71	B5/B14
	18	78	0.55	52	1.1	80/71	B5/B14
	24	58	0.55	67	0.9	80/71	B5/B14
	28	50	0.55	73	1.0	80/71	B5/B14
	36	39	0.37	61	1.1	71	B5/B14
	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

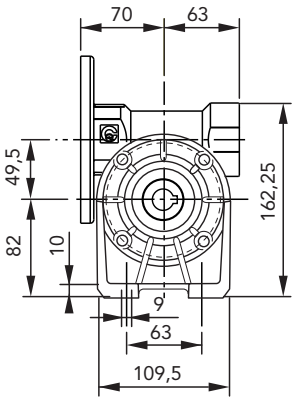
* Motors 80 gr.

Weight Kg 3

DIMENSIONS

A





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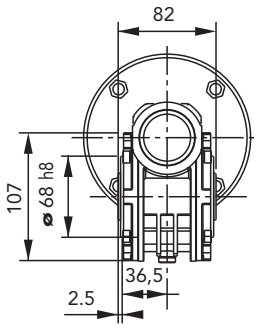

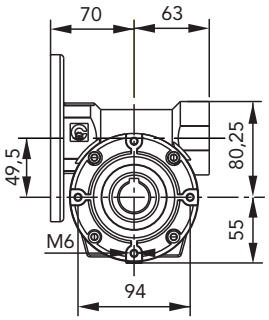

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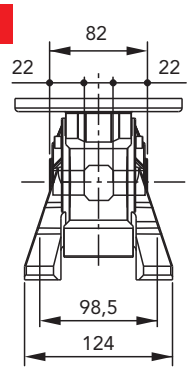

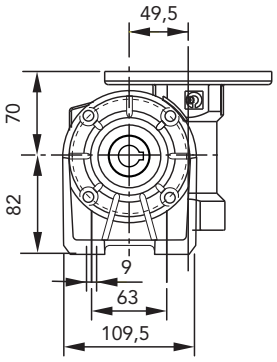

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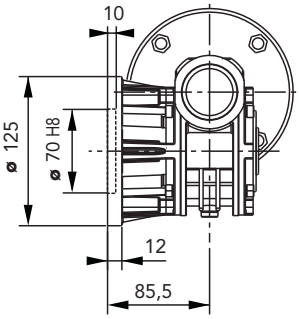

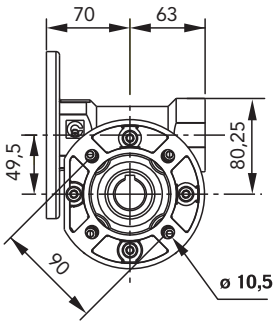

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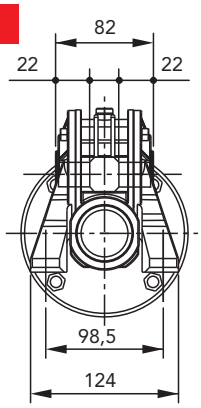

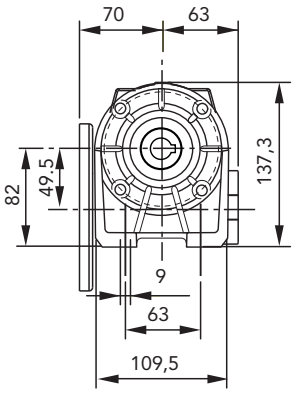

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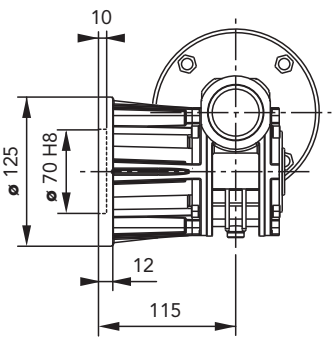

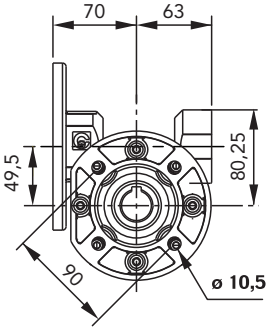

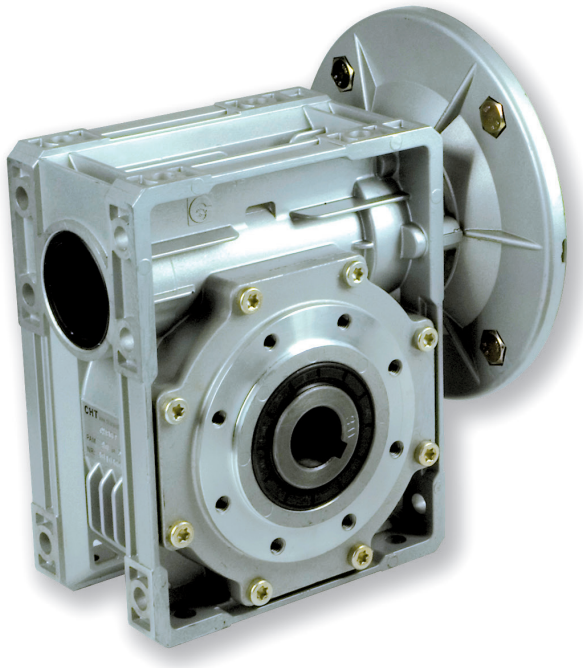

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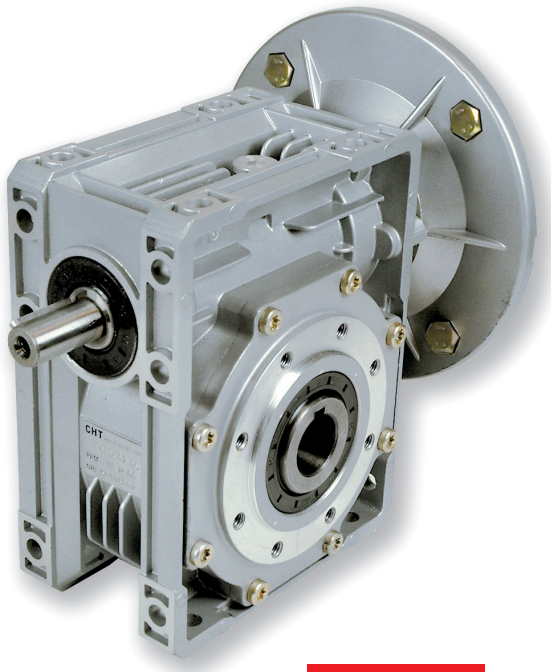

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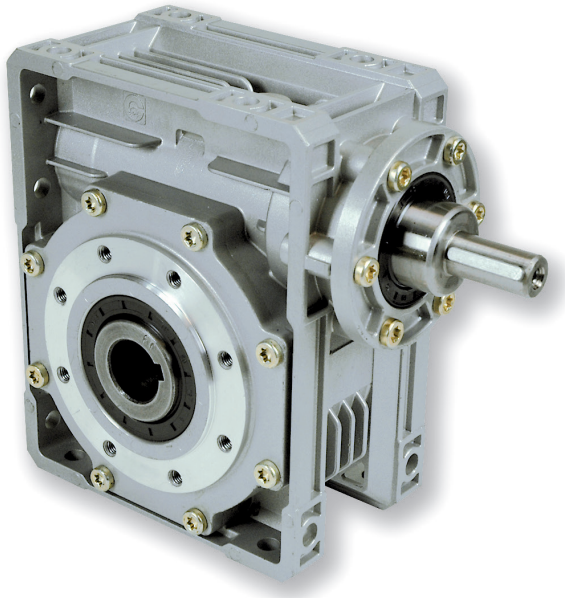

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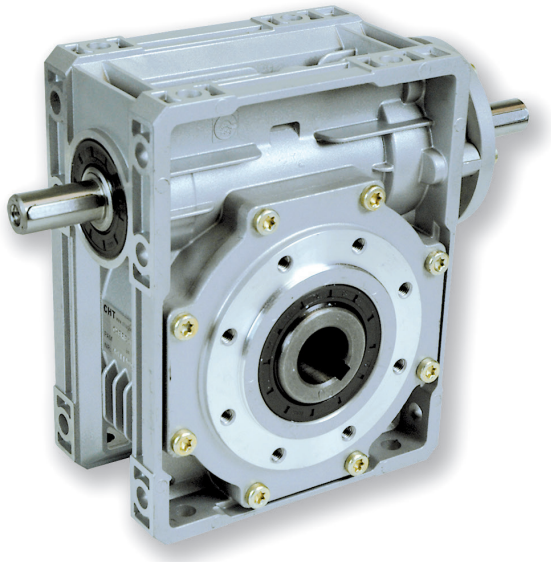


CHRE..

CH 06/07/08 DESIGNATION

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

ORDER EXAMPLE

CH	06	FC	1	19	90 B5

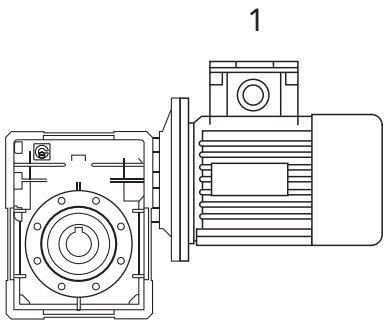
If the motor is also required, please specify:

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

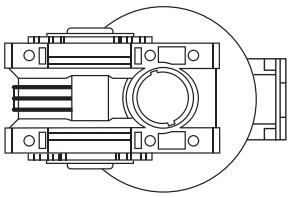
1) see page 67
2) see page 69
3) lack of instructions indicates that the gear is not equipped with an output flange

*2D and 3D drawings available on the web site **www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

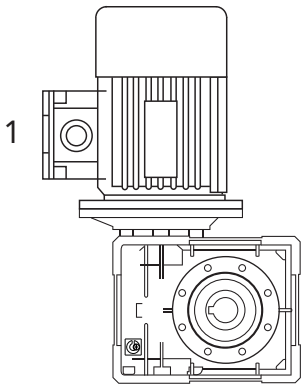
B3



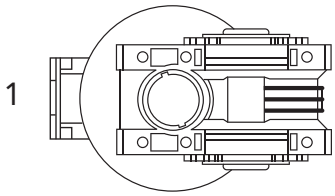
B6



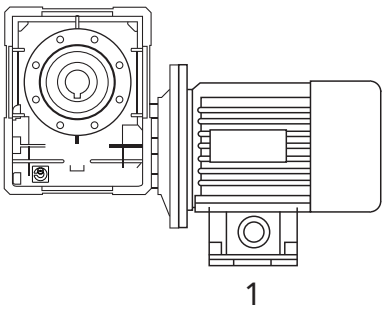
V5



B7



B8



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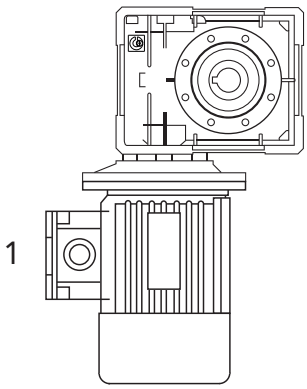
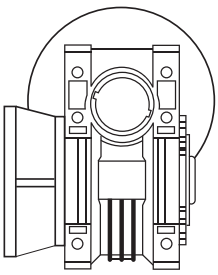


F1



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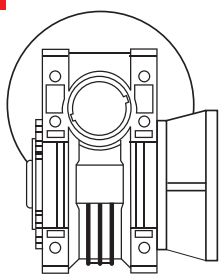
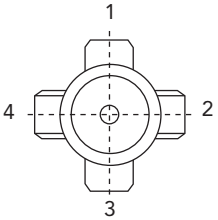
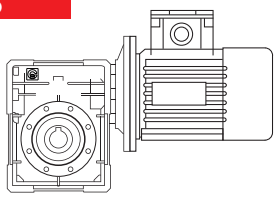




B3



TERMINAL BOX POSITION

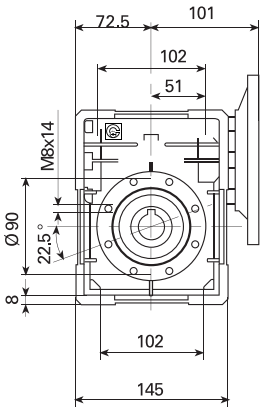
N.B. The position of the terminal box always refers to the B3 position.

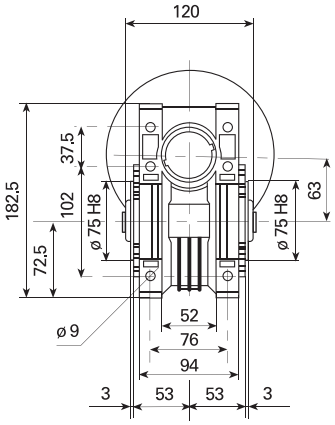
CH 06 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

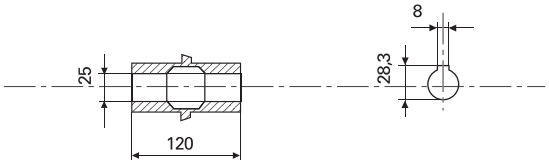
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CH 06	7	200	1.85	75	1.5	90/80	B5/B14
	10	140	1.85	105	1.3	90/80	B5/B14
	12	117	1.85	129	1.1	90/80	B5/B14
	15	93	1.85	146	1.0	90/80	B5/B14
	19	74	1.50	150	1.0	90/80	B5/B14
	24	58	1.10	138	1.1	90/80	B5/B14
	30	47	1.10	155	1.0	90/80	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

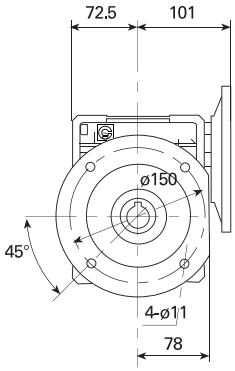
Weight Kg 5,2

DIMENSIONS

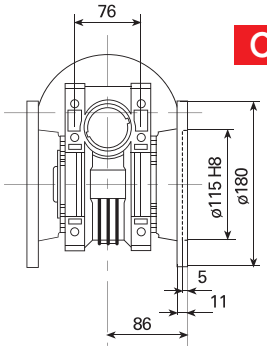




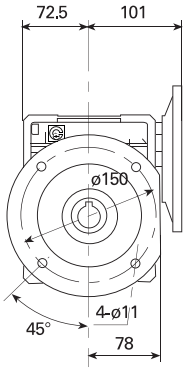




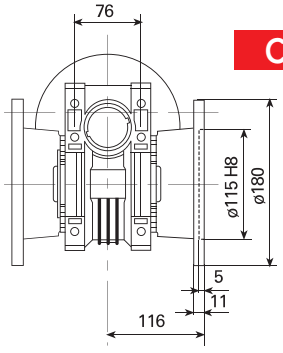
CH06FC 1



CH06FC 2



CH06F1



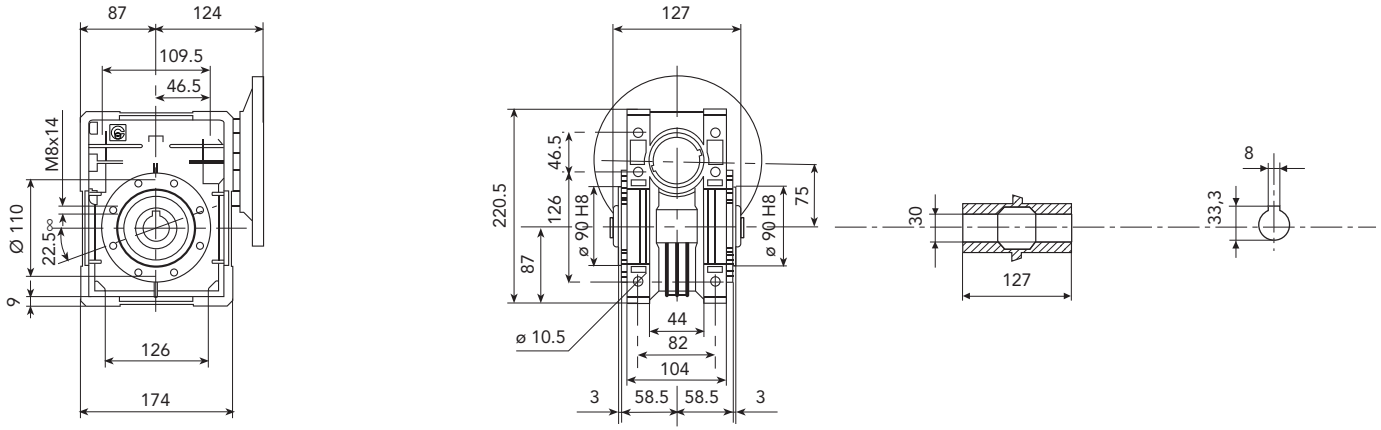
CH06F2

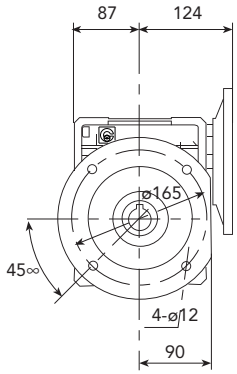
CH 07 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

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	

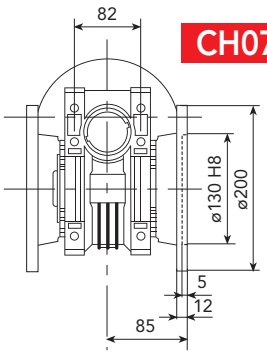
Weight Kg 9,2

DIMENSIONS

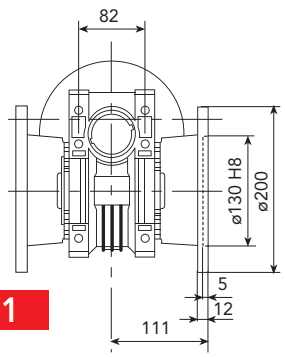




CH07FC 1

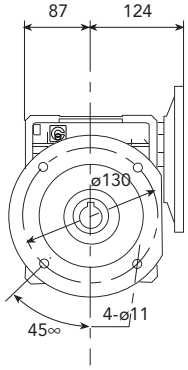


CH07FC 2

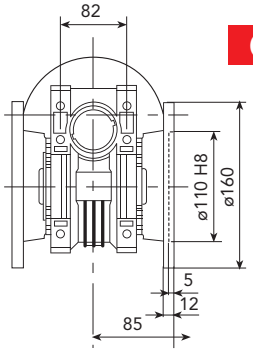


CH07F1

CH07F2



CH07FE1



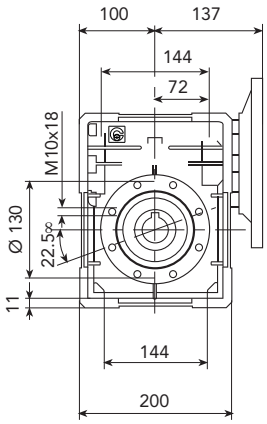
CH07FE2

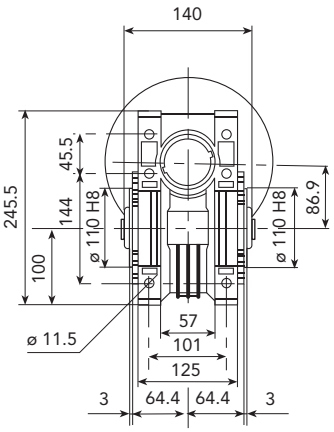
CH 08 - PERFORMANCE WITH 4-POLE MOTORS 1400 REVS. INPUT

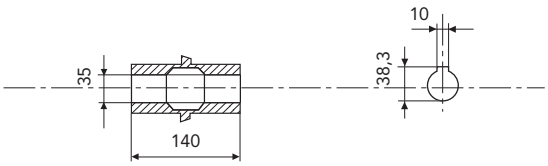
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CH 08	7	200	4	170	1.5	112/100/90	B5/B14
	10	140	4	240	1.2	112/100/90	B5/B14
	15	93	4	350	0.9	112/100/90	B5/B14
	20	70	3.00	340	0.9	100/90	B5/B14
	23	61	2.20	280	1.1	100/90	B5/B14
	30	47	2.20	340	1.1	100/90	B5/B14
	40	35	1.85	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

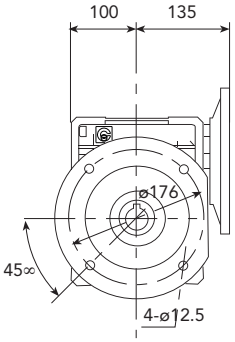
Weight Kg 12,2

DIMENSIONS

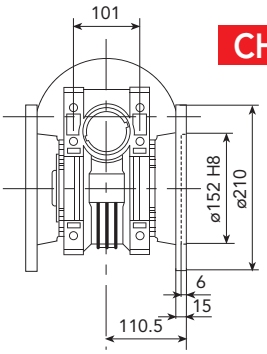




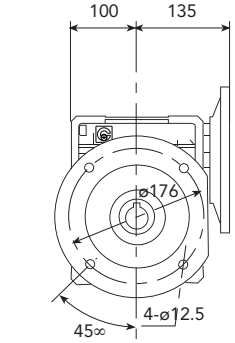




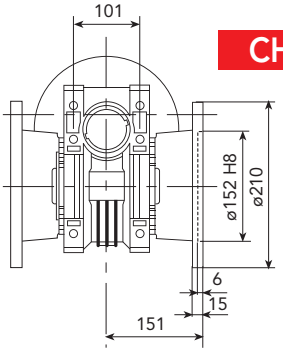
CH08FC 1



CH08FC 2

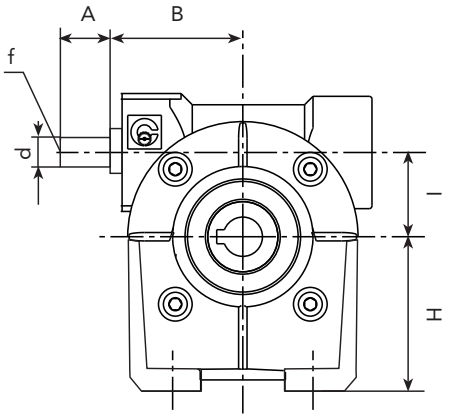


CH08F1

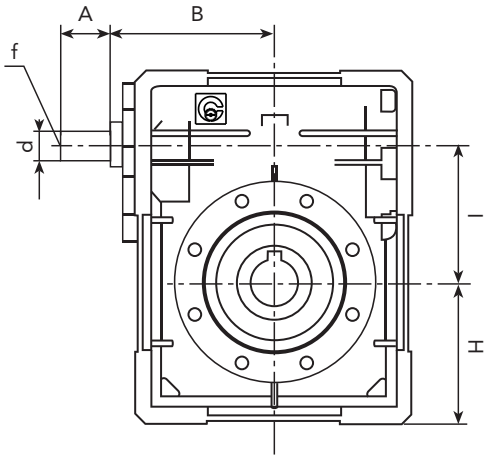


CH08F2

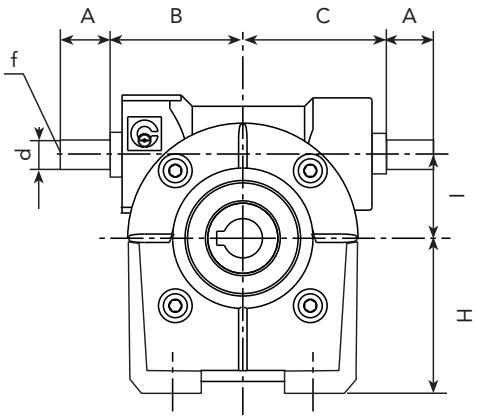
CHR 03-04-05



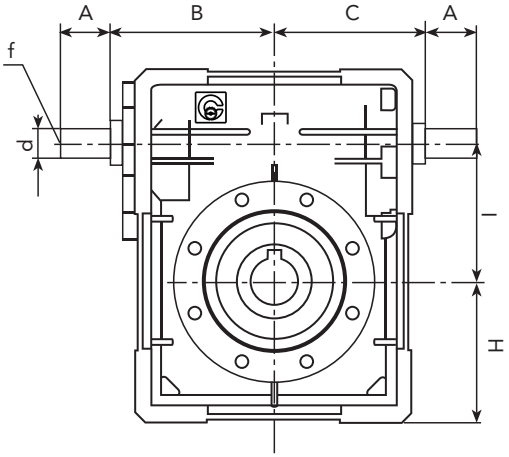
CHR 06-07-08



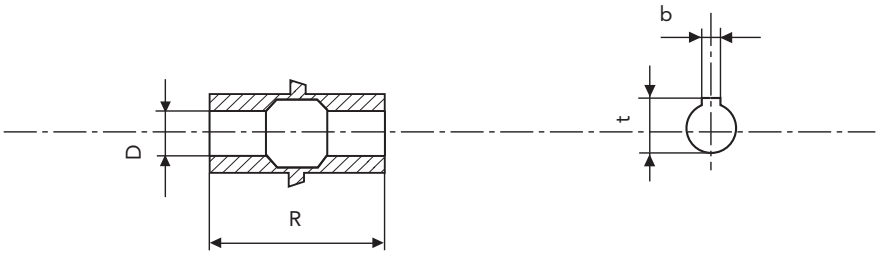
CHRE 03-04-05



CHRE 06-07-08

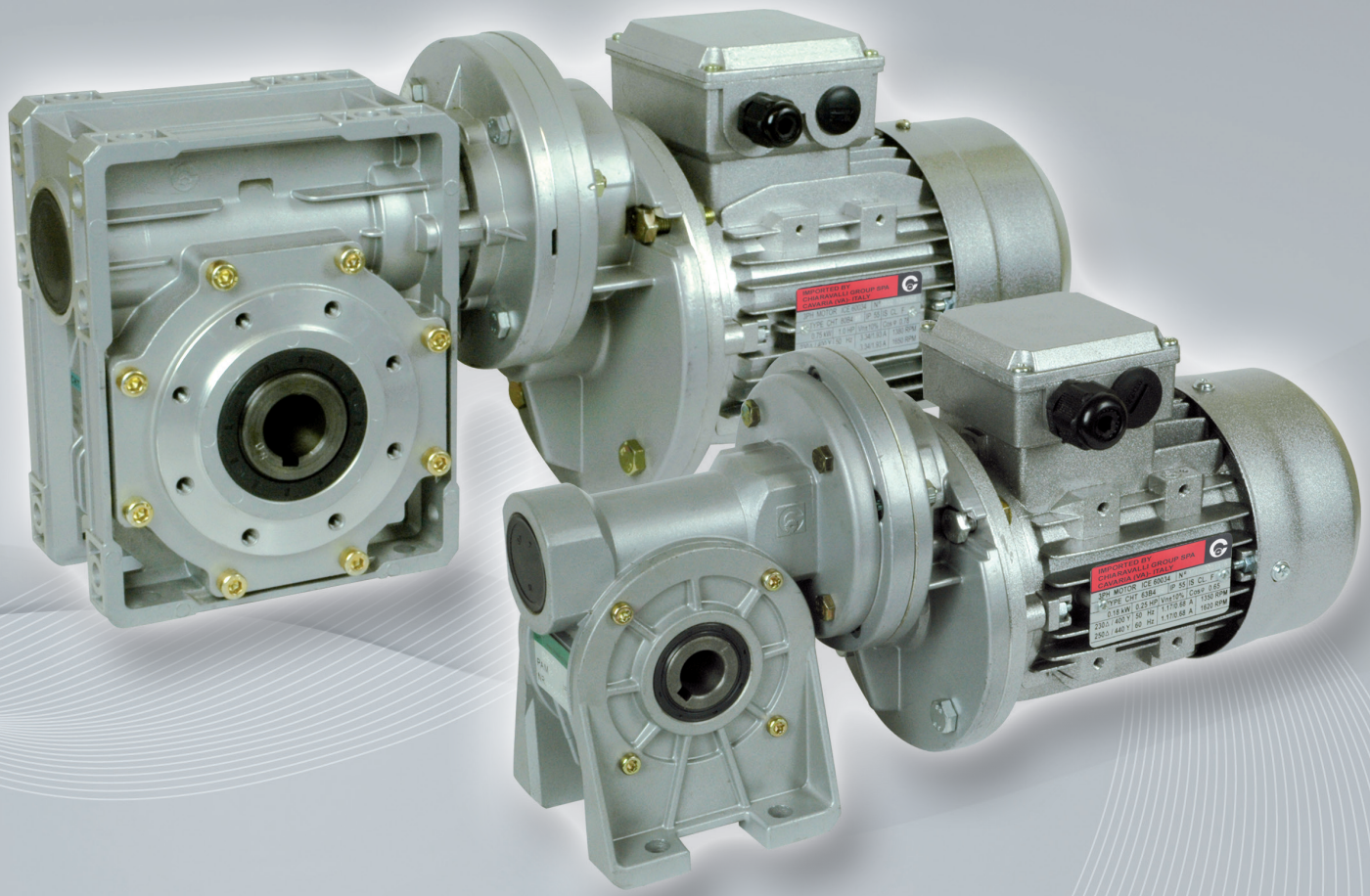


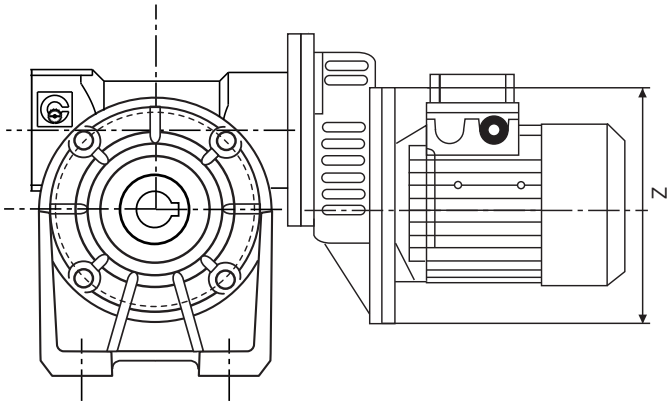
OUTPUT SHAFT DIMENSIONS

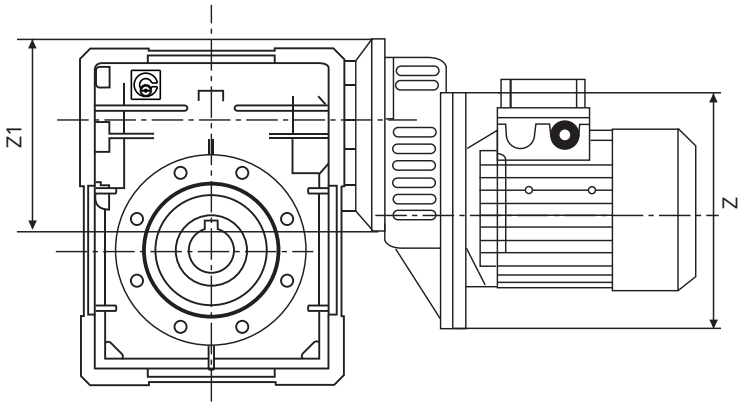


TYPE	A	B	C	D(H7)	d(h6)	f	H	I	R	b	t
CHR 03	20	50	/	14	9	/	55	30	55	5	16.3
CHR 04	30	54	/	18	11	/	72	44.6	64	6	20.8
CHR 05	40	65	/	25	16	M6	82	49.5	82	8	28.3
CHR 06	40	110.5	/	25	18	M6	72.5	62.17	120	8	28.3
CHR 07	40	128	/	30	19	M6	87	75	127	8	33.3
CHR 08	50	144	/	35	25	M8	100	86.9	140	10	38.8
CHRE 03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







	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***
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 CH 04	105	13.3	0.12	42
	138	10.1	0.12	42
	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 CH 05	84	16.7	0.25	80
	108	12.9	0.25	90
	135	10.4	0.25	90

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHPC71 CH 07	120	11.7	0.55	280
	150	9.3	0.37	215
	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 CH 08	168	8.3	0.55	350
	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 CH 05	108	12.9	0.18	72
	135	10.4	0.18	85
	180	7.8	0.12	65
	210	6.7	0.12	67
	240	5.8	0.12	58
	300	4.7	0.12	56

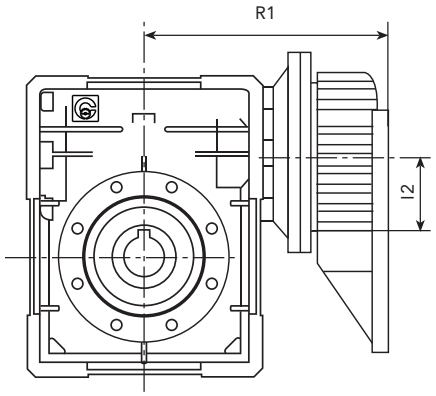
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHPC71 CH 06	114	12.3	0.37	170
	135	10.4	0.37	176
	192	7.3	0.25	149
	240	5.8	0.25	130
	300	4.7	0.25	120

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

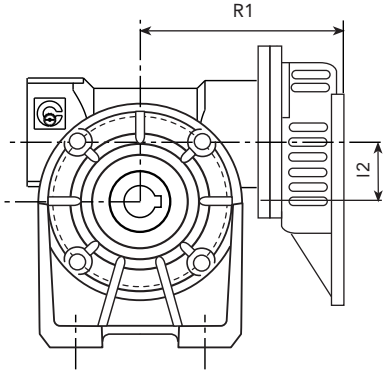
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHPC80 CH 08	120	11.7	0.75	390
	138	10.1	0.75	360
	168	8.3	0.55	350
	192	7.3	0.55	330
	240	5.8	0.55	305

DIMENSIONS

CHPC.. /CH 06-07-08



CHPC.. /CH 04-05

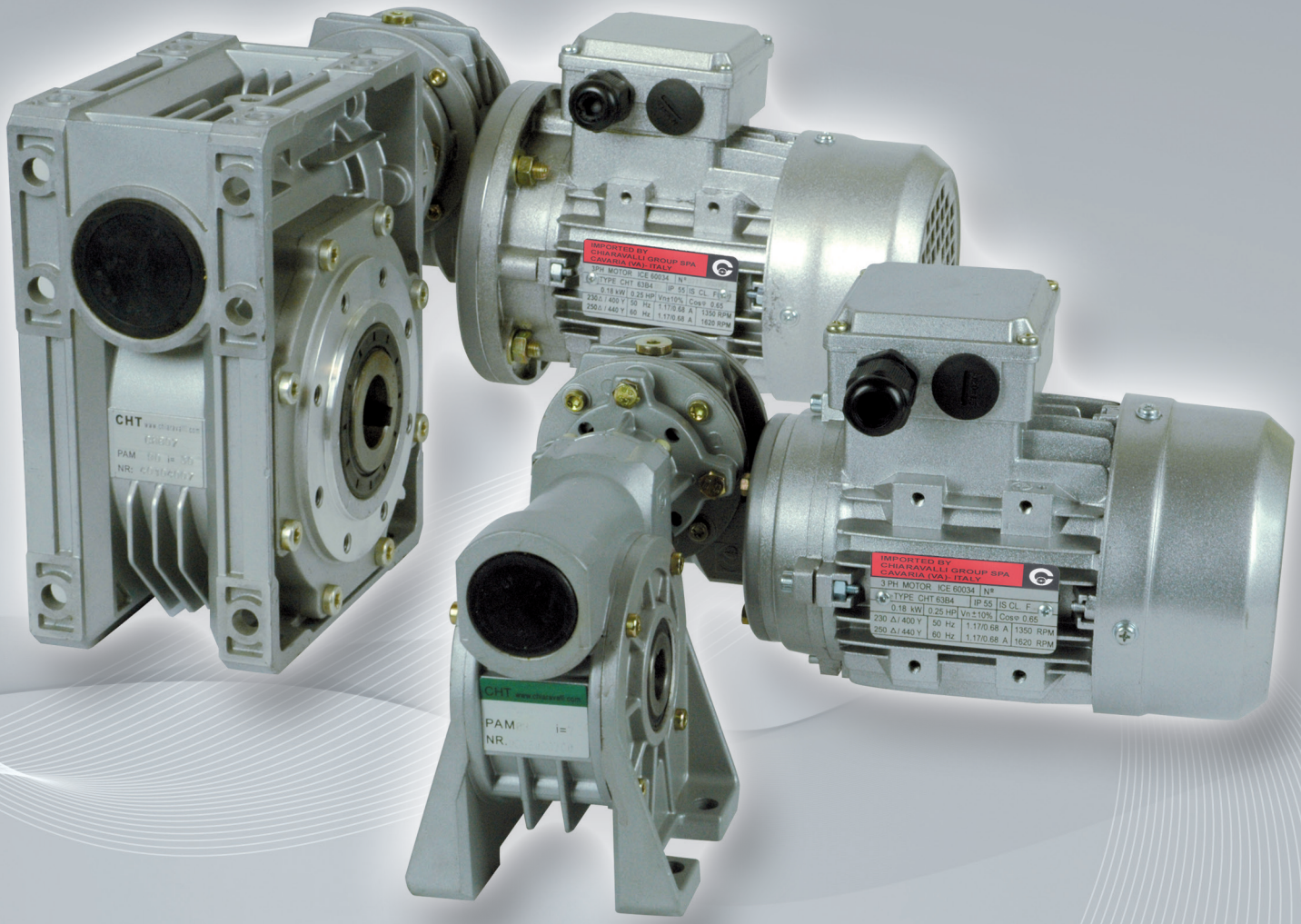


For other dimensions see pages 65 - 66 - 70 - 71 and 72 of the catalogue.

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***
Quantity, availability and prices with Chiaravalli B2B


CHT
PAM
NR:
IMPORTED BY
CHIARAVALLI GROUP SPA
CAVARIA (VA) ITALY
3 PH MOTOR IEC 60034
TYPE CHT 63B4
IP 55
0.18 kW
0.25 HP
230 Δ / 400 Y
250 Δ / 440 Y
50 Hz
60 Hz
1350 RPM
1620 RPM

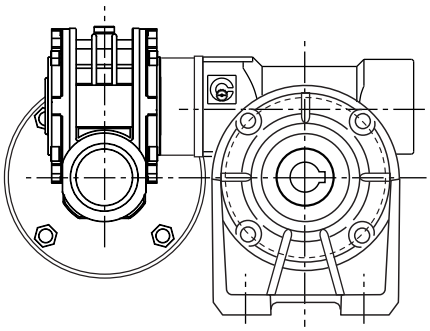
DESIGNATION CH(R)/CH - CH(R)/CH..P

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

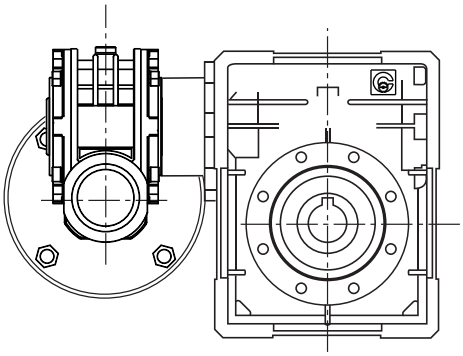
TYPE	SIZE	VERSION	FLANGE POS. (1)	i	EXEC.	M.M.F.
CH/CH CH/CH..P CHR/CH CHR/CH..P	03/06 04/07 04/08	FC F (3)	1 2	RATIO SEE PAGE 80	OAD OAS OBD OBS VAD VAS VBD VBS	71B5 71B14 63B5 63B14 56B5 56B14

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

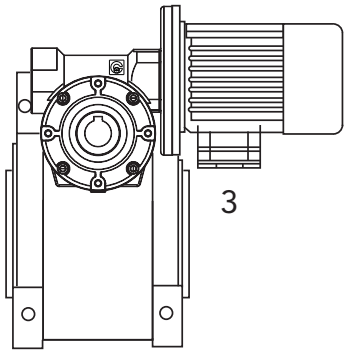
CH/CH	03/05P	FA	2	315	OBS	56B14

If the motor is also required, please specify:

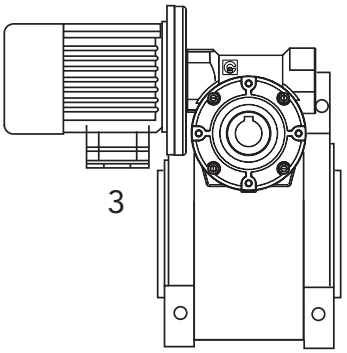
Size	es. 56 C4
Power	es. Kw 0.09
Poles	es. 4
Voltage	es. V230/400
Frequency	es. 50 Hz
Flange	es. B14

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.

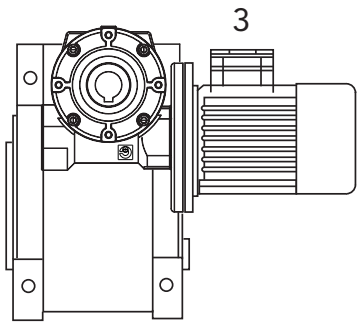
OAD



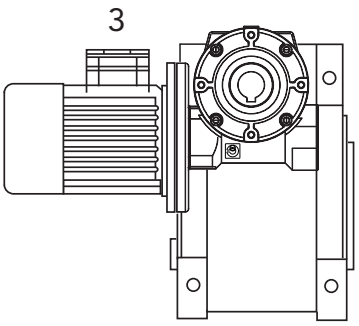
OAS



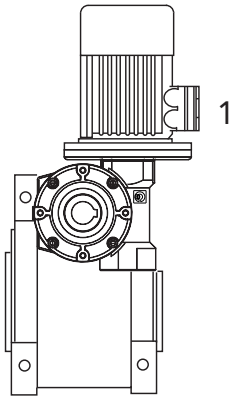
OBD



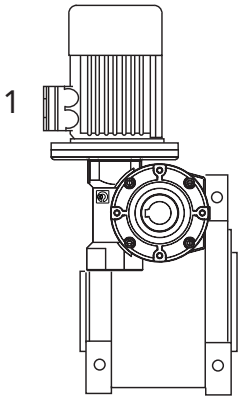
OBS



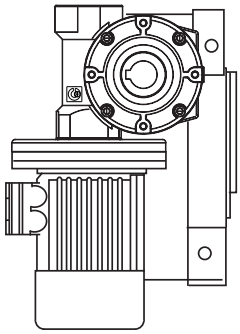
VAD



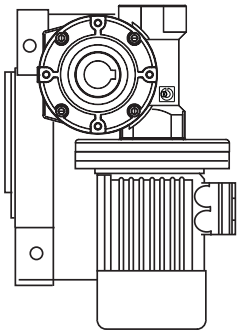
VAS



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 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 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 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

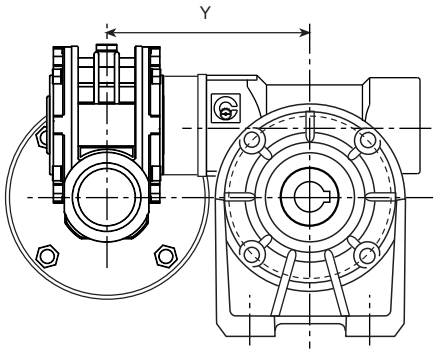
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CH 04/07	250	5.6	0.37	360
	300	4.7	0.37	360
	400	3.5	0.25	315
	525	2.7	0.25	360
	700	2.0	0.18	360
	920	1.5	0.18	360
	1200	1.2	0.12	360
	1500	0.93	0.12*	360
	2100	0.67	0.12*	360
	2800	0.5	0.12*	360

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CH 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

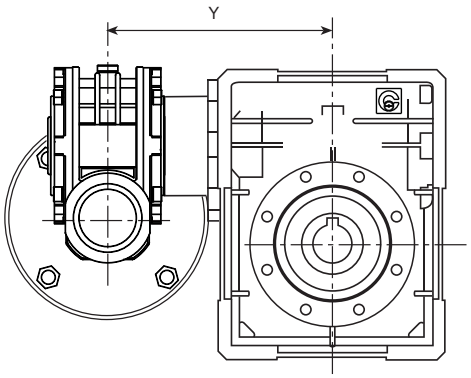
* The powers marked with an asterisk are higher than those that the gear allows, therefore the applicative choice must be made in accordance with the torque and not with the power.

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

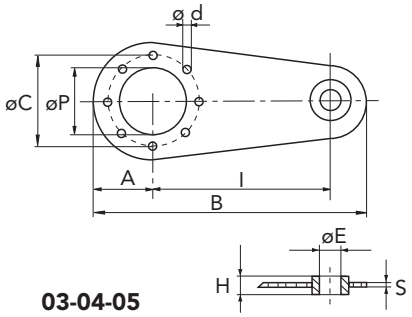
For other dimensions see pages 65 - 66 - 70 - 71 and 72 of the catalogue.

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

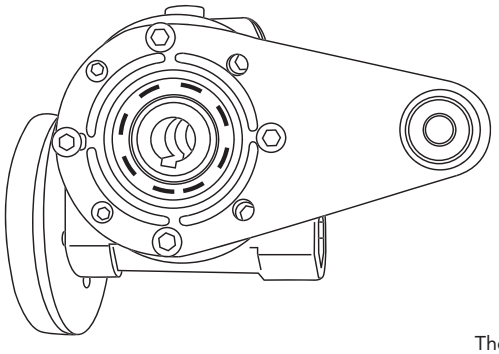
*2D and 3D drawings available on the web site **www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

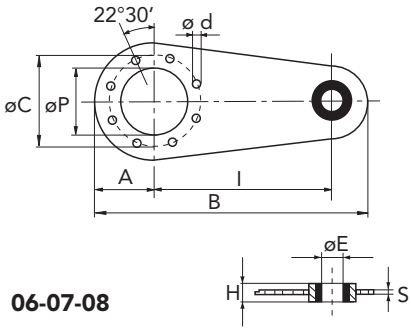
TORQUE ARM

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



03-04-05





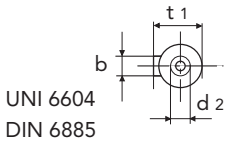
06-07-08

* Without anti vibrationbush

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

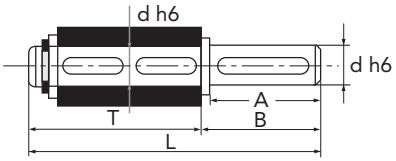
SINGLE OUTPUT SHAFT KIT

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



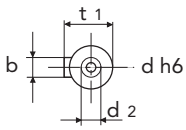
UNI 6604
DIN 6885

DIN 332



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



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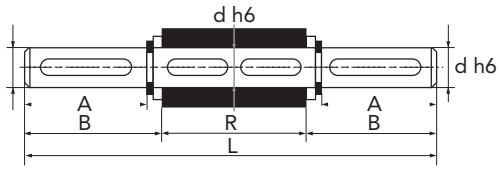
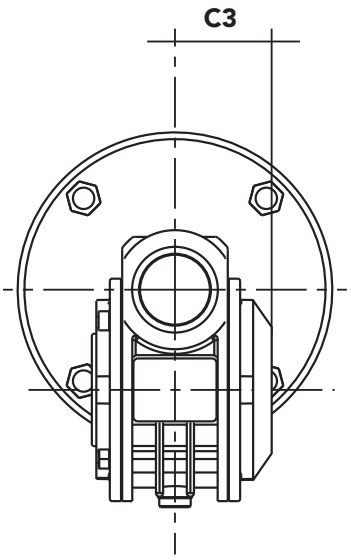
DIN 6885

DIN 332

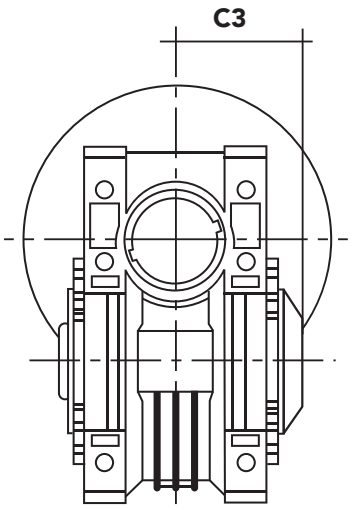


COVER

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

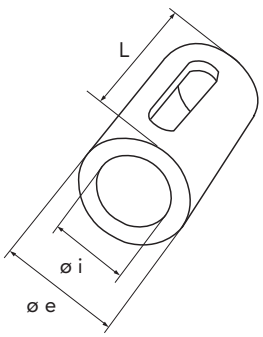
TYPE	ø i/ø e	L	tongues	Weight for kit kg
CHT BRM-S	9/11	20	4/3 x 4 x 11 RB*	0.006
CHT BRM-S	11/14	30	5/4 x 6 x 10 RB*	0.015
CHT BRM-S	14/19	40	6 x 5 x 30 *	0.045
CHT BRM-S	19/24	50	6 x 5.5 x 20 * 8 x 5.5 x 40 *	0.07
CHT BRM-S	24/28	60	8 x 9 x 40 *	0.08
CHT BRM-S	28/38	80	10 x 7 x 60 *	0.33
CHT BRM-S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

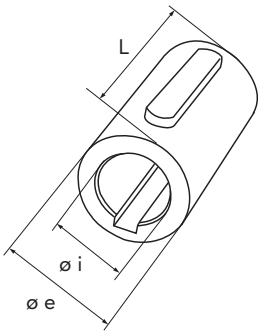
DOUBLE

TYPE	ø i/ø 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

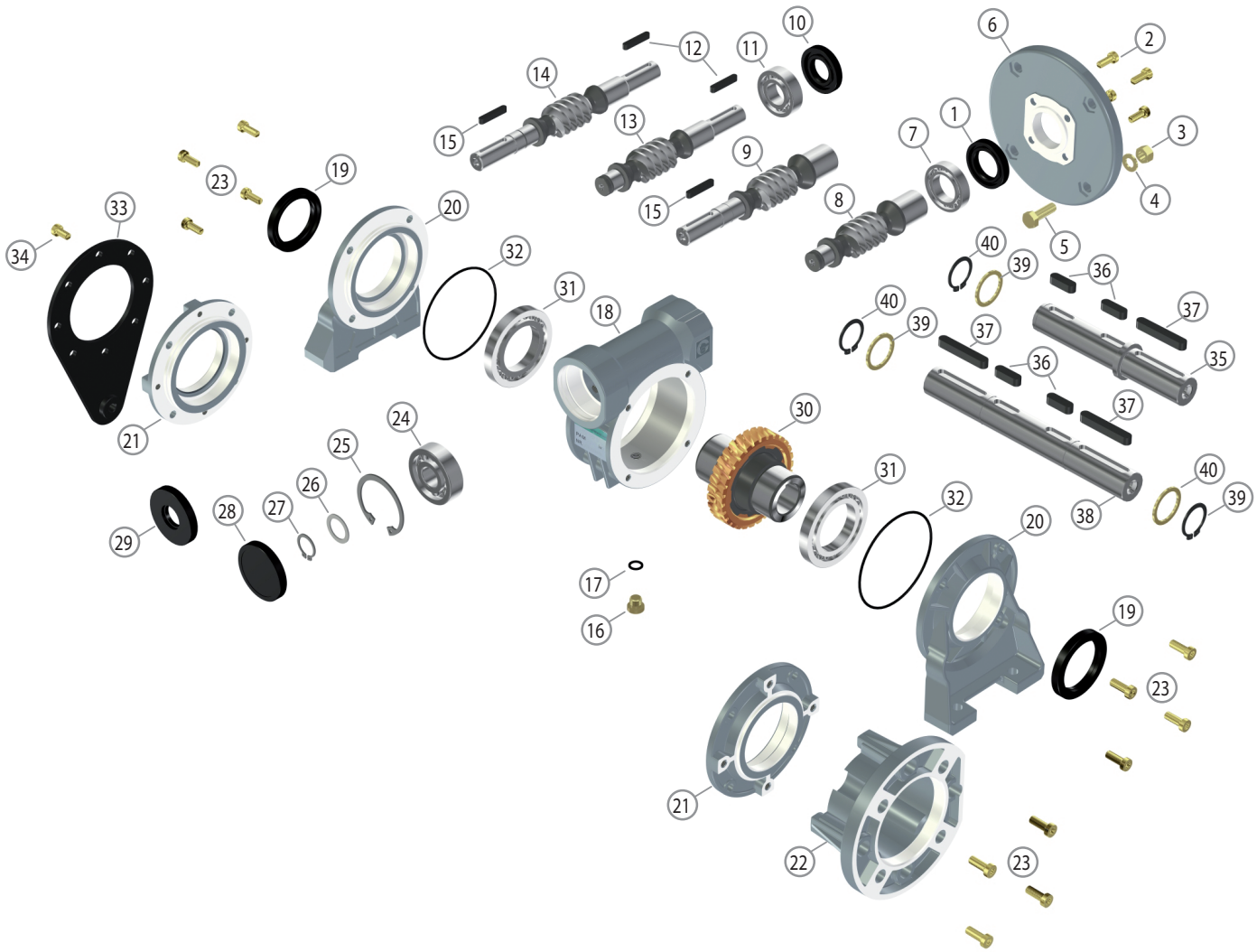
* to drawing

Tongue acc. to UNI 6604 - DIN 6885
Quenched

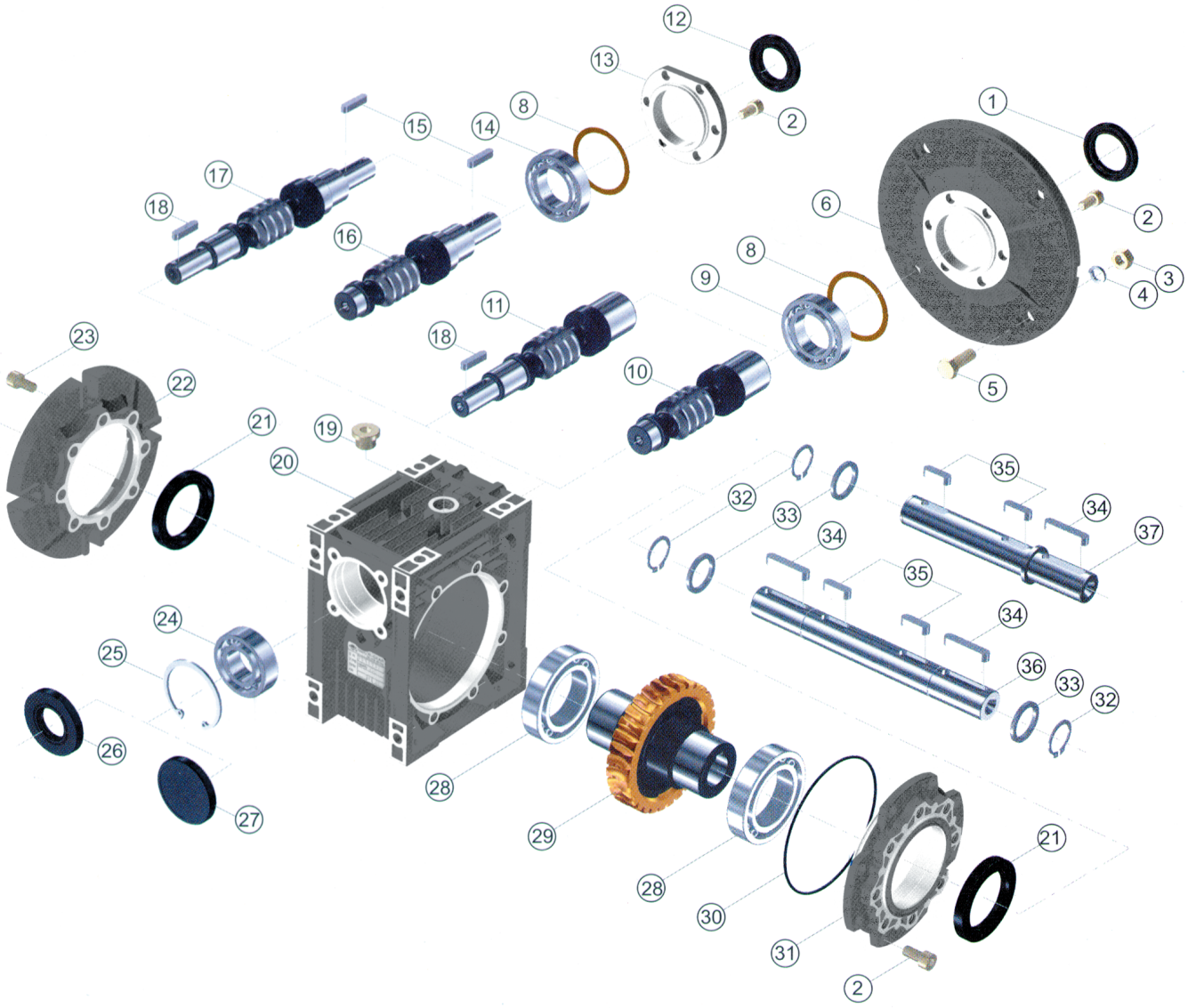




2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B



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	TORQUE ARM
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

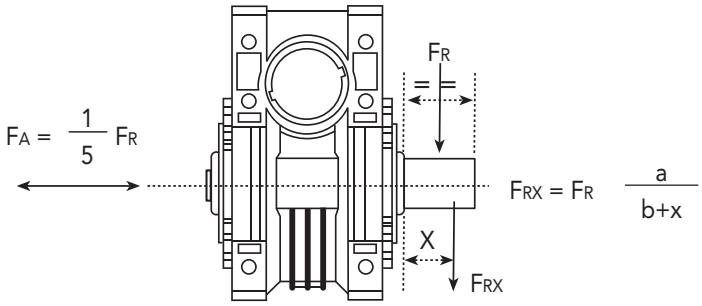


1	OIL SEAL	20	CASING
2	TORX SCREW	21	OIL SEAL
3	NUT	22	OUTPUT FLANGE
4	WASHER	23	EMBEDDED HEXAGONAL-HEAD SCREW
5	HEXAGONAL-HEAD SCREW	24	BEARING
6	MOTOR CONNECTION FLANGE	25	SEEGER
8	ADJUST SPACER	26	OIL SEAL
9	BEARING	27	CAP
10	HOLE INPUT WORM	28	BEARING
11	HOLE INPUT AND SHAFT OUTPUT WORM	29	WORM WHEEL
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

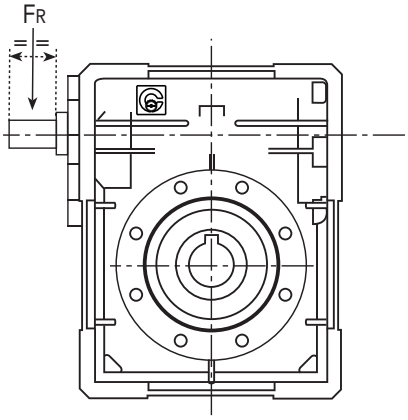
The loads indicated are valid for all application directions.
The maximum allowable axial loads are equal to 1/5 of the radial load value shown in the table when applied with the same radial load; if this is not the case, please contact our technical office. If double output shafts are used, the sum 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***
Quantity, availability and prices with Chiaravalli B2B



	SIZES					
	03	**04**	**05**	**06**	**07**	**08**
FR max	100	150	220	700	975	1150

Notes: value of tables are in N

*2D and 3D drawings available on the web site **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.
· 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 runin 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.

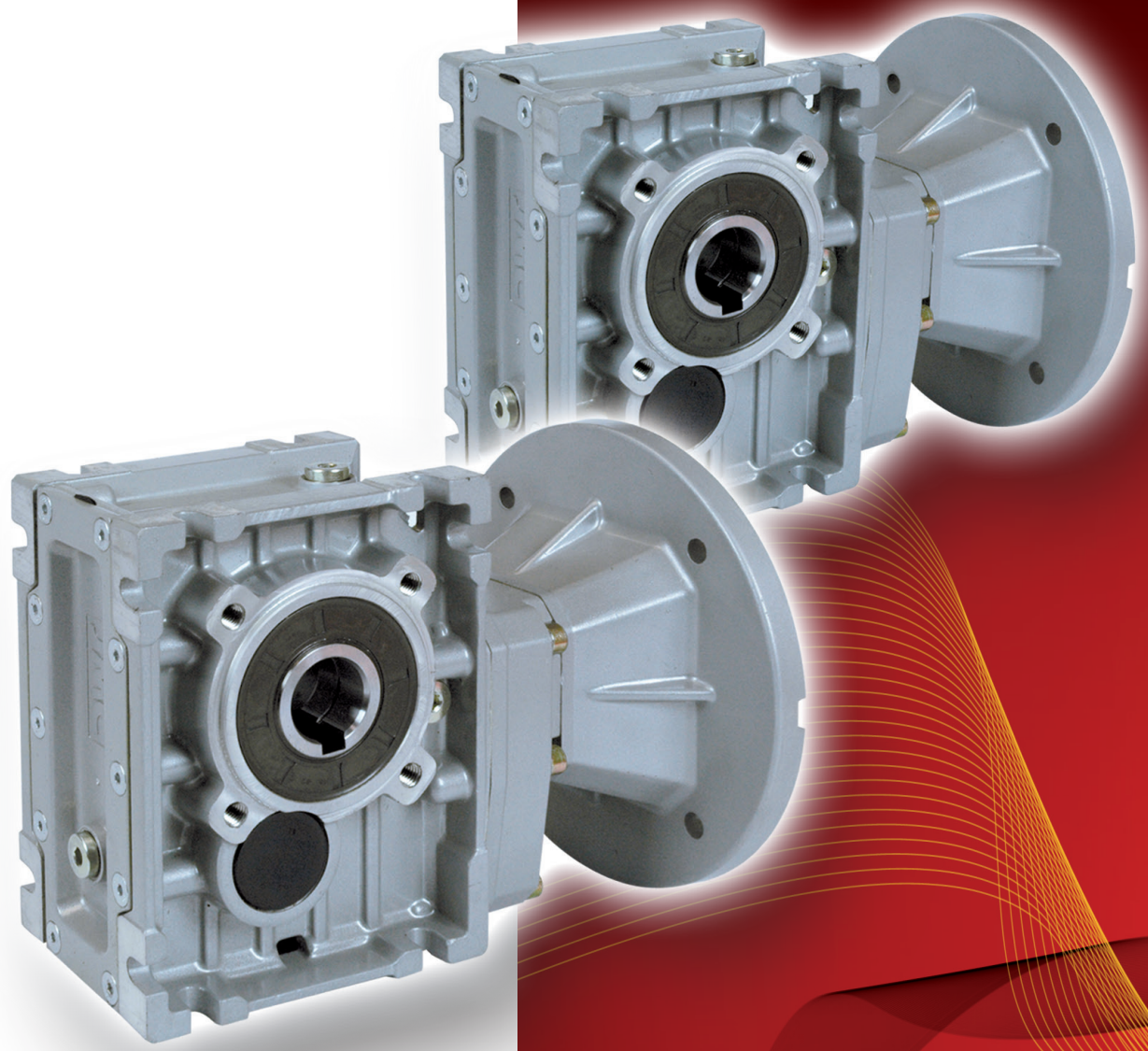
HANDLING

· 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.

CHIARAVALLI® GROUP SpA



CHO HELICAL-HYPOID GEAR UNITS

INTRODUCTION

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.

2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

POWER P

$P_1 * \eta = P_2$
P_1 = Input power
P_2 = Output power
η = Transmission efficiency

ROTATION SPEED n

n_1 = Input speed
n_2 = Output speed

An output speed ≤ 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

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

$$M_2 \geq M_2 \cdot f_s \left[Nm\right]$$

M_2 = Output torque
M_{2n} = Rated output torque
P_1 = Input power
η = Transmission efficiency
f_s = Service factor

2D and 3D drawings available on the web site ***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.

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

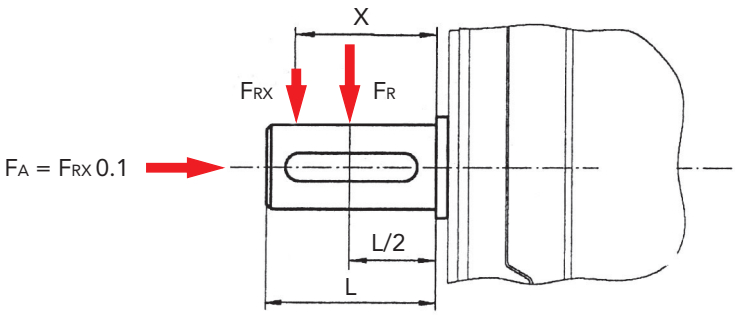
F_R = Radial load
T = Nm (Torque)
T.e.f. = Transmission element factor
T.e.f. = 1,15 gear
= 1,4 chain spocket
= 1,75 v-pulley
= 2,5 flat-pulley
D = Transmission element diameter

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 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
a	104	104	128	128	135	135	148.5	148.5
b	78	70	98	98	105	105	118.5	118.5

TYPES OF LUBRICATION

	°C -50 0 +50 +100	ISO	SHELL	MOBIL	BP	Lubrication type
CHO	standard -10 +40	VG 220	Shell Omala 220	Mobilgear 630	BP Energol GR-XP 220	Mineral Oil
	-20 +25	VG 150 VG 100	Shell Omala 100	Mobilgear 627	BP Energol GR-XP 100	
	-30 +10	VG 68-46 VG 32	Shell Tellus T 32	Mobil D.T.E. 13M		
	-40 -20	VG 22 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 recomended 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...)

	fill quantity in liters					
size	**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.

*2D and 3D drawings available on the web site **www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

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.

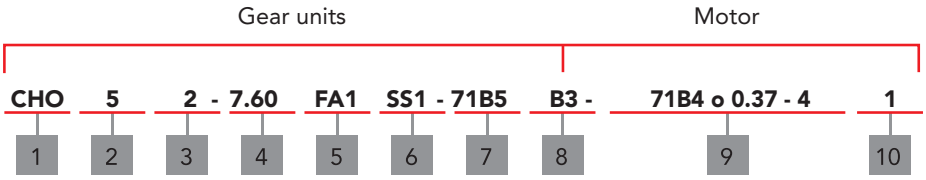
2. Every 3000 working time, at least every 6 months, you have to check the oil and oil level, the seals visually for leakage. For IEC input gear units, the elastomer should be tested or replaced if necessary.

3. Dependong 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



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

Order example

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

CHO 52/53 n_1 = 1400 r/min **130Nm**

	i nominal	i actual	n_2 [r/min]	M_{2n} [Nm]	P1=Kw	M1	F.S.	F_{r2} [N]	63B5	71B5 71B14	80B5 80B14	90B5 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 n_1 = 1400 r/min **200Nm**

	i nominal	i actual	n_2 [r/min]	M_{2n} [Nm]	P1=Kw	M1	F.S.	F_{r2} [N]	63B5	71B5 71B14	80B5 80B14	90B5 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***
Quantity, availability and prices with Chiaravalli B2B

CHO 72/73 n_1 = 1400 r/min **350Nm**

	i nominal	i actual	n_2 [r/min]	M_{2n} [Nm]	P1=Kw	M1	F.S.	F_{r2} [N]	63B5	71B5	80B5 80B14	90B5 90B14	100B5 100B14	112B5 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_1 = 1400 r/min **500Nm**

	i nominal	i actual	n_2 [r/min]	M_{2n} [Nm]	P1=Kw	M1	F.S.	F_{r2} [N]	63B5	71B5	80B5 80B14	90B5 90B14	100B5 100B14	112B5 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						

P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i nominal	i actual	F_{r2} [N]	fs			
0.12	5.7	184	250	244.29	4100	0.7	**CHO53**	**63B5**	**63A4**
	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	**CHO52**	**63B5**	**63A4**
	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	**CHO63**	**63B5**	**63A4**
	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	**CHO73**	**63B5**	**63A4**
	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	**CHO83**	**63B5**	**63A4**
	5.8	181	250	240.89	8300	2.8			
0.18	48	34	60	58.36	2350	3.3	**CHO52**	**63B5**	**63A2**
	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	**CHO53**	**63B5**	**63B4**
	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	**CHO52**	**63B5**	**63B4**
	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***
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P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i nominal	i actual	F_{r2} [N]	fs			
0.18	15.4	105	60	58.36	3430	1.0	**CHO52**	**71B5/B14**	**71A6**
	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	**CHO63**	**63B5**	**63B4**
	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	**CHO62**	**63B5**	**63B4**
	28.7	56	50	48.71	3190	3.6			
	7.4	215	125	122.22	4800	0.9	**CHO63**	**71B5/B14**	**71A6**
	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	**CHO62**	**71B5/B14**	**71A6**
	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	**CHO73**	**63B5**	**63B4**
	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	**CHO73**	**71B5**	**71A6**
	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	**CHO83**	**63B5**	**63B4**
	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	**CHO83**	**71B5**	**71A6**
	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			
0.25	19.1	115	150	146.67	3200	1.1	**CHO53**	**63B5**	**63B2**
	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	**CHO52**	**63B5**	**63B2**
	57	39	50	48.86	2220	3.3			
	70	32	40	40.09	2070	4.0			

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

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P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i nominal	i actual	F_{r2} [N]	fs			
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			

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

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P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i nominal	i actual	F_{r2} [N]	fs			
0.37	28.5	114	50	49.18	5540	3.1	**CHO83**	**71B5**	**71B4**
	6.0	546	150	151.20	8300	0.9	**CHO83**	**80B5/B14**	**80A6**
	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	**CHO82**	**80B5/B14**	**80A6**
	18.7	178	50	48.18	6370	2.8			
0.55	70	71	40	40.09	2070	1.8	**CHO52**	**71B5/B14**	**71B2**
	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	**CHO52**	**80B5/B14**	**80A4**
	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	**CHO63**	**71B5/B14**	**71B2**
	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	**CHO62**	**71B5/B14**	**71B2**
	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	**CHO62**	**80B5/B14**	**80A4**
	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	**CHO62**	**80B5/B14**	**80B6**
	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	**CHO73**	**71B5**	**71B2**
	18.5	261	150	151.20	5040	1.3			

P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i nominal	i actual	F_{r2} [N]	fs			
0.55	22.2	217	125	125.95	4750	1.6	**CHO73**	**71B5**	**71B2**
	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	**CHO73**	**80B5/B14**	**80A4**
	18.6	260	75	75.45	5040	1.3			
	23.6	210	60	59.44	4660	1.7	**CHO72**	**80B5/B14**	**80A4**
	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	**CHO72**	**80B5/B14**	**80B6**
	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	**CHO83**	**71B5**	**71B2**
	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	**CHO83**	**80B5/B14**	**80A4**
	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	**CHO82**	**80B5/B14**	**80A4**
	29.1	170	50	48.18	5500	2.9			
	9.1	533	100	99.22	8110	0.9	**CHO83**	**80B5/B14**	**80B6**
	11.9	405	75	75.45	7400	1.2			
	15.2	324	60	59.04	6820	1.4	**CHO82**	**80B5/B14**	**80B6**
	18.7	264	50	48.18	6370	1.9			
	22.4	220	40	40.13	6000	2.3			
0.75	57	117	50	48.86	2220	1.1	**CHO52**	**80B5/B14**	**80A2**
	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	**CHO52**	**80B5/B14**	**80B4**
	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			

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P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i nominal	i actual	F_{r2} [N]	fs			
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			

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

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P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i nominal	i actual	F_{r2} [N]	fs			
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			

P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i nominal	i actual	F_{r2} [N]	fs			
1.5	35	386	40	40.13	4080	0.9	**CHO72**	**90B5/B14**	**90L4**
	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	**CHO82**	**90B5/B14**	**90S2**
	58	232	50	48.18	4360	2.2			
	29.1	463	50	48.18	5500	1.1	**CHO82**	**90B5/B14**	**90L4**
	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			
2.2	139	143	20	20.21	1650	0.9	**CHO52**	**90B5/B14**	**90L2**
	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	**CHO62**	**90B5/B14**	**90L2**
	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	**CHO72**	**90B5/B14**	**90L2**
	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	**CHO72**	**100B5/B14**	**100A4**
	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	**CHO82**	**90B5/B14**	**90L2**
	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	**CHO82**	**100B5/B14**	**100A4**
	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			

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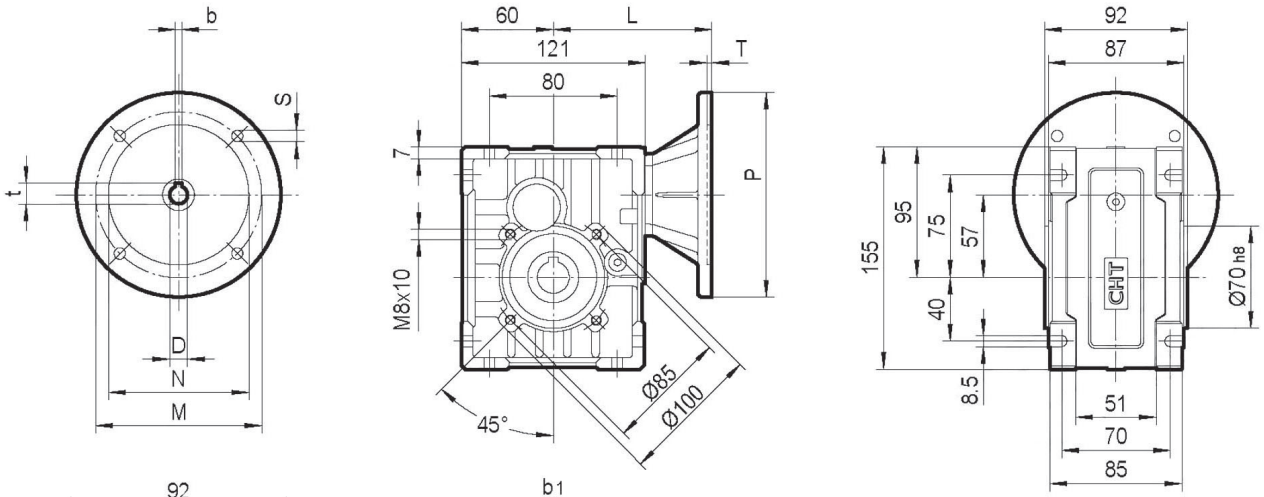
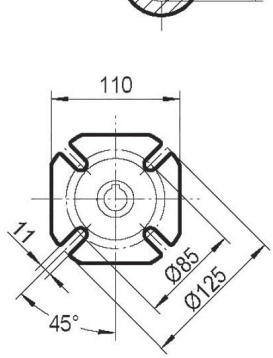
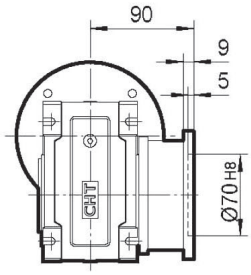
P_{1n} [Kw]	n_2 [r/min]	M_{2n} [Nm]	i nominal	i actual	F_{r2} [N]	fs			
2.2	112	176	12.5	12.49	3510	2.6	**CHO82**	**100B5/B14**	**100A4**
3	70	386	40	40.13	3240	0.9	**CHO72**	**100B5/B14**	**100L2**
	93	291	30	30.24	2950	1.2			
	111	242	25	25.19	2770	1.4			
	141	191	20	19.84	2560	1.8			
	186	145	15	15.09	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	**CHO72**	**100B5/B14**	**100LB4**
	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	**CHO82**	**100B5/B14**	**100L2**
	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	**CHO82**	**100B5/B14**	**100LB4**
	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			
4	111	323	25	25.19	2770	1.1	**CHO72**	**112B5/B14**	**100LB2**
	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	**CHO72**	**112B5/B14**	**112M4**
	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	**CHO82**	**112B5/B14**	**100LB2**
	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	**CHO82**	**112B5/B14**	**112M4**
	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			

CHO 52







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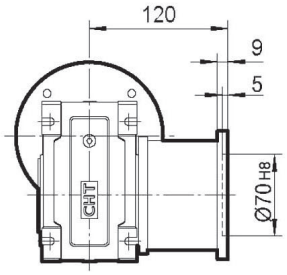

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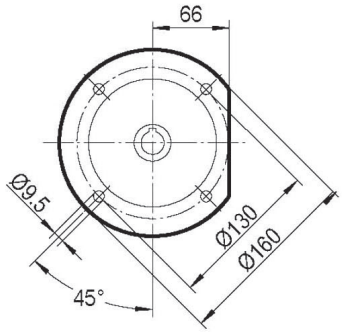

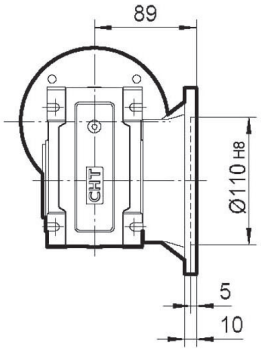

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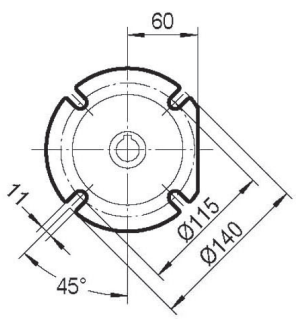
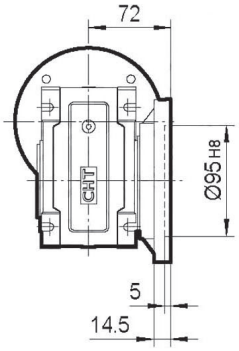


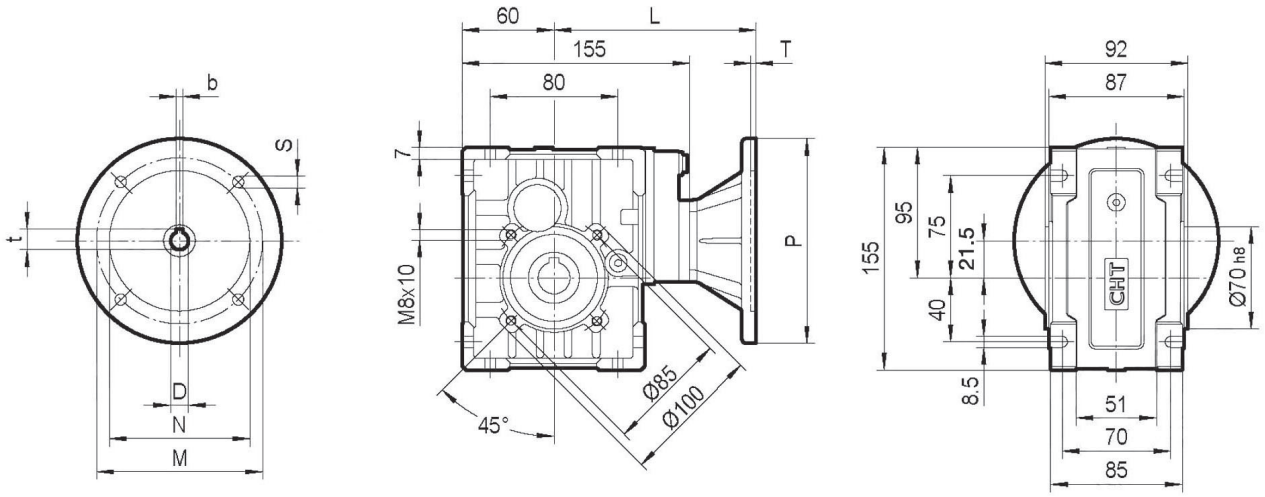


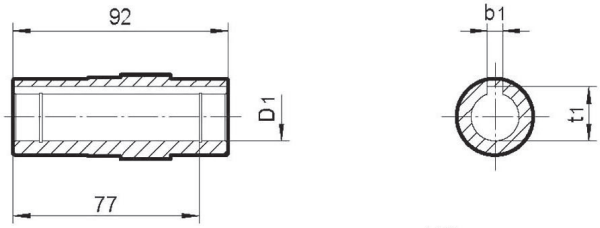
FD

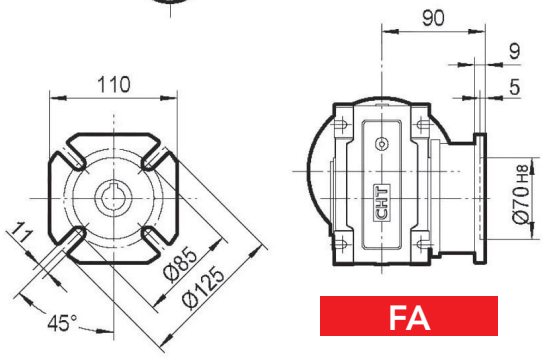
IEC	DE8	b	t	P	M	N	S	T	L	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	106	20*	6*	22.8*
71B5	14	5	16.3	160	130	110	9	4	113	25	8	28.3
71B14	14	5	16.3	105	85	70	7	4	113			
80B5	19	6	21.8	200	165	130	11	4	133			
80B14	19	6	21.8	120	100	80	7	4	133	* only on request		
90B14	24	8	27.3	140	115	95	9	4	133			

Weight 3.5 Kg excluding motor

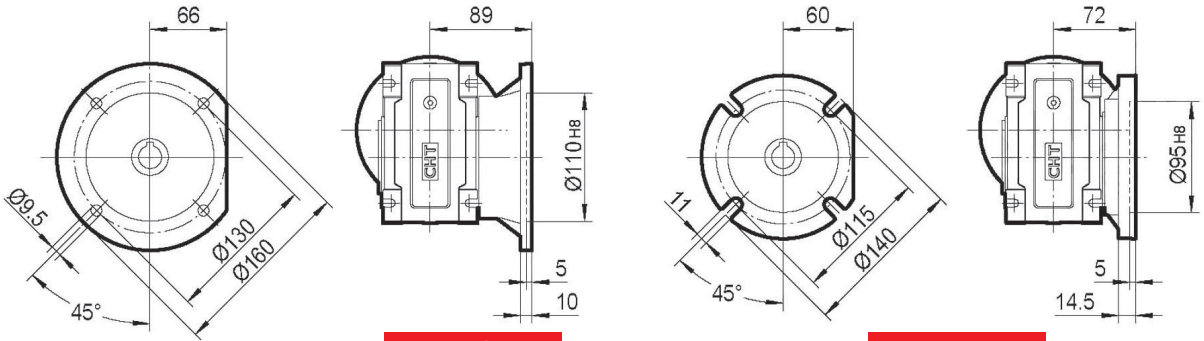
CHO 53







FA FB

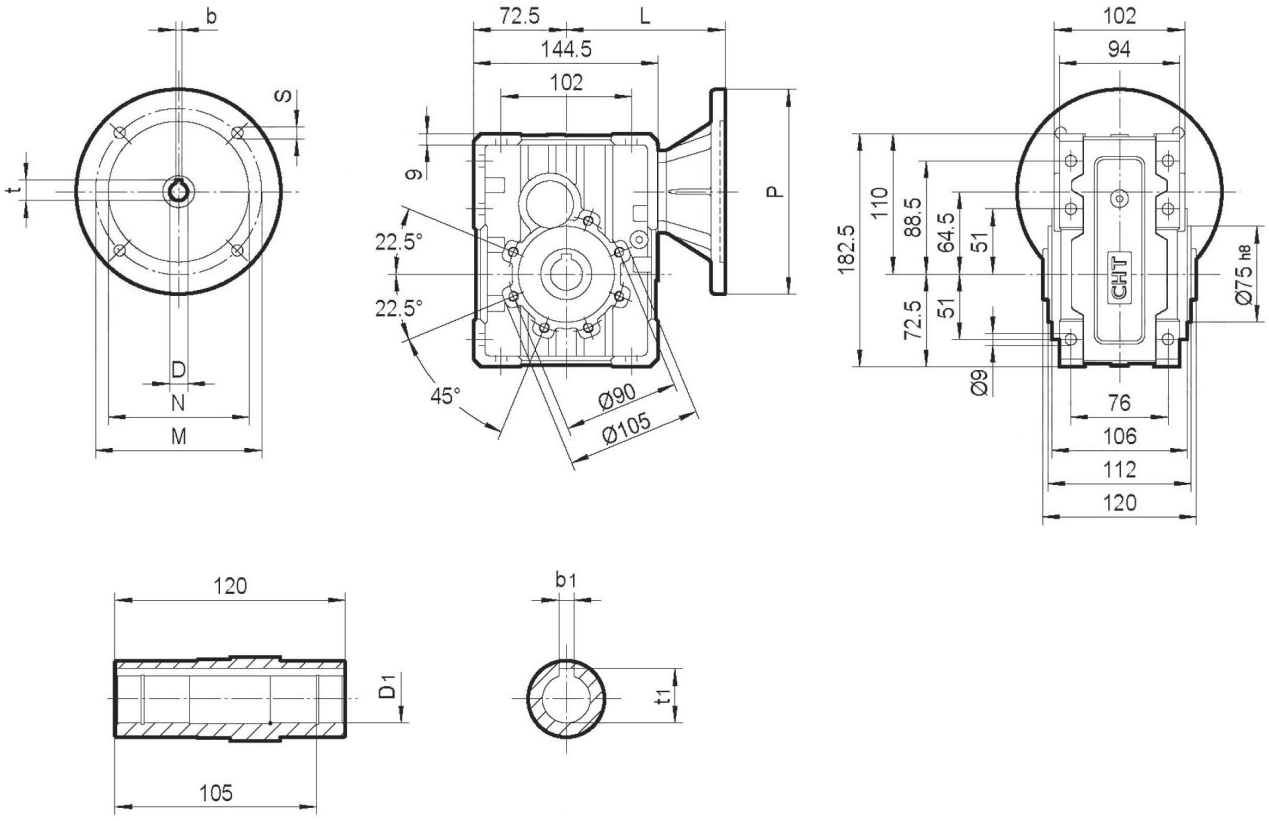


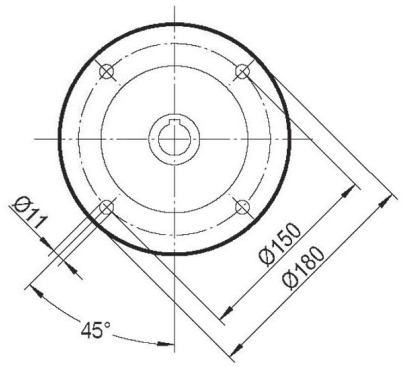
FC FD

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			

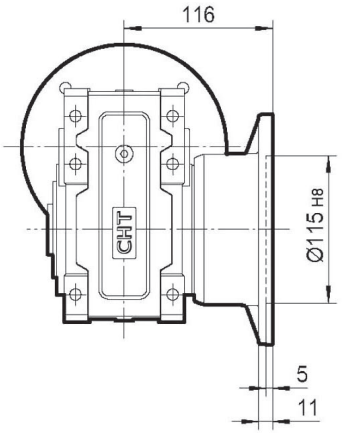
Weight 3.5 Kg excluding motor

CHO 62

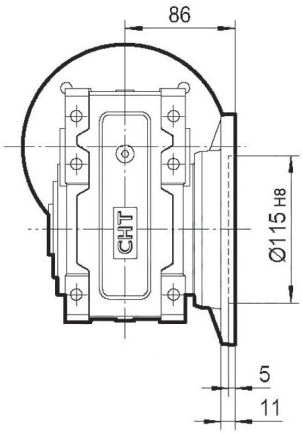




FA



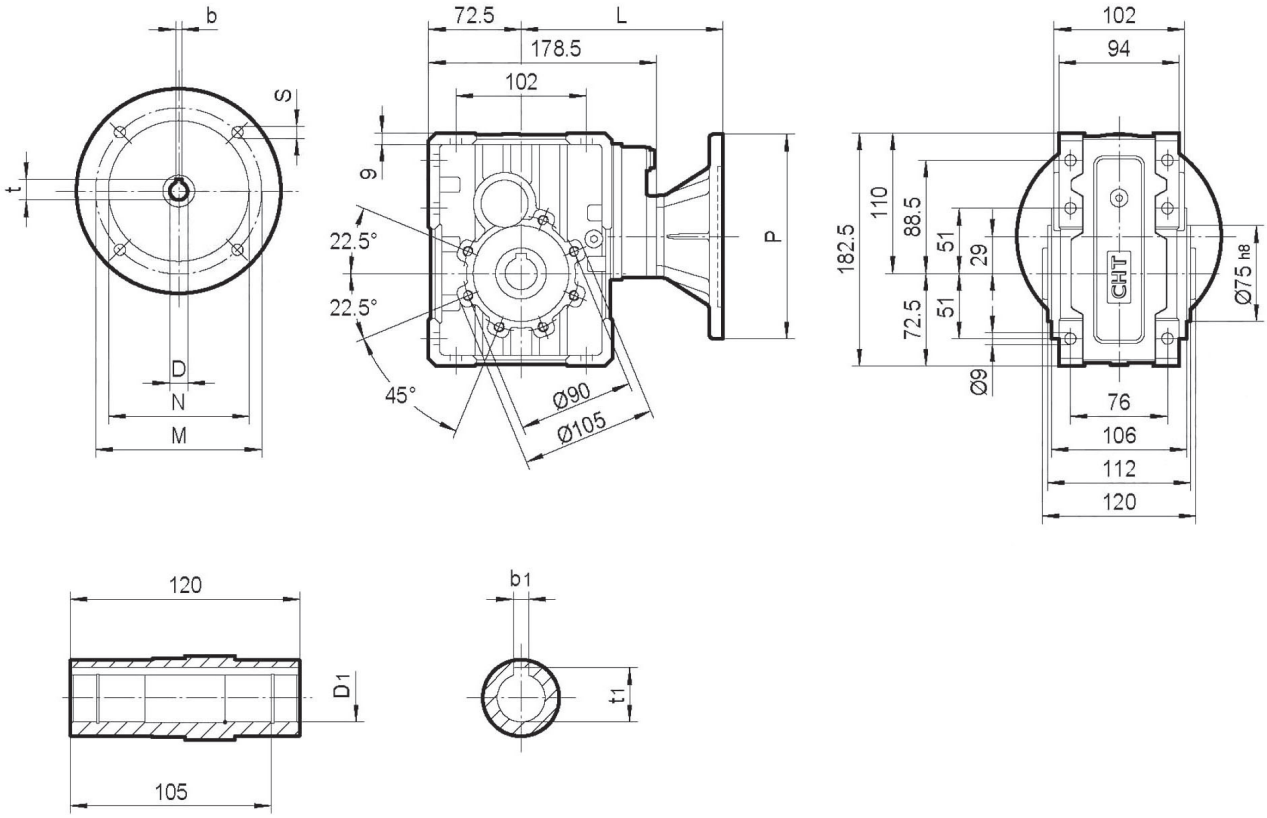
FB

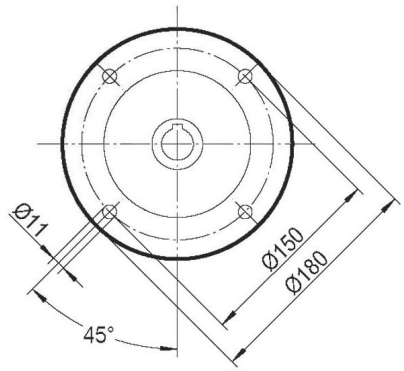


IEC	DE8	b	t	P	M	N	S	T	L	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	117	25	8	28.3
71B5	14	5	16.3	160	130	110	9	4	124			
71B14	14	5	16.3	105	85	70	7	4	124			
80B5	19	6	21.8	200	165	130	11	4	144			
80B14	19	6	21.8	120	100	80	7	4	144			
90B5	24	8	27.3	200	165	130	11	4	144			
90B14	24	8	27.3	140	115	95	9	4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

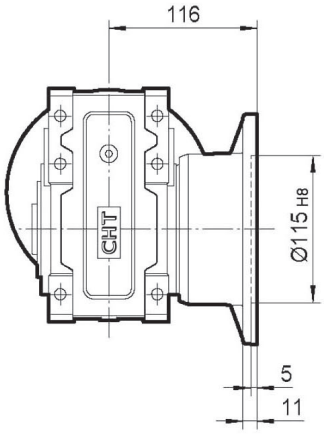
Weight 6.5 Kg excluding motor

CHO 63

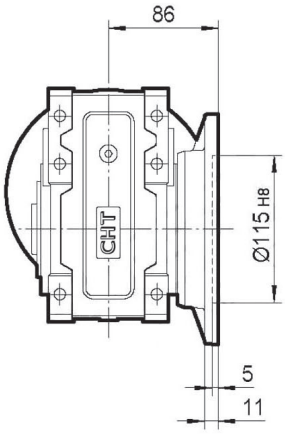




FA



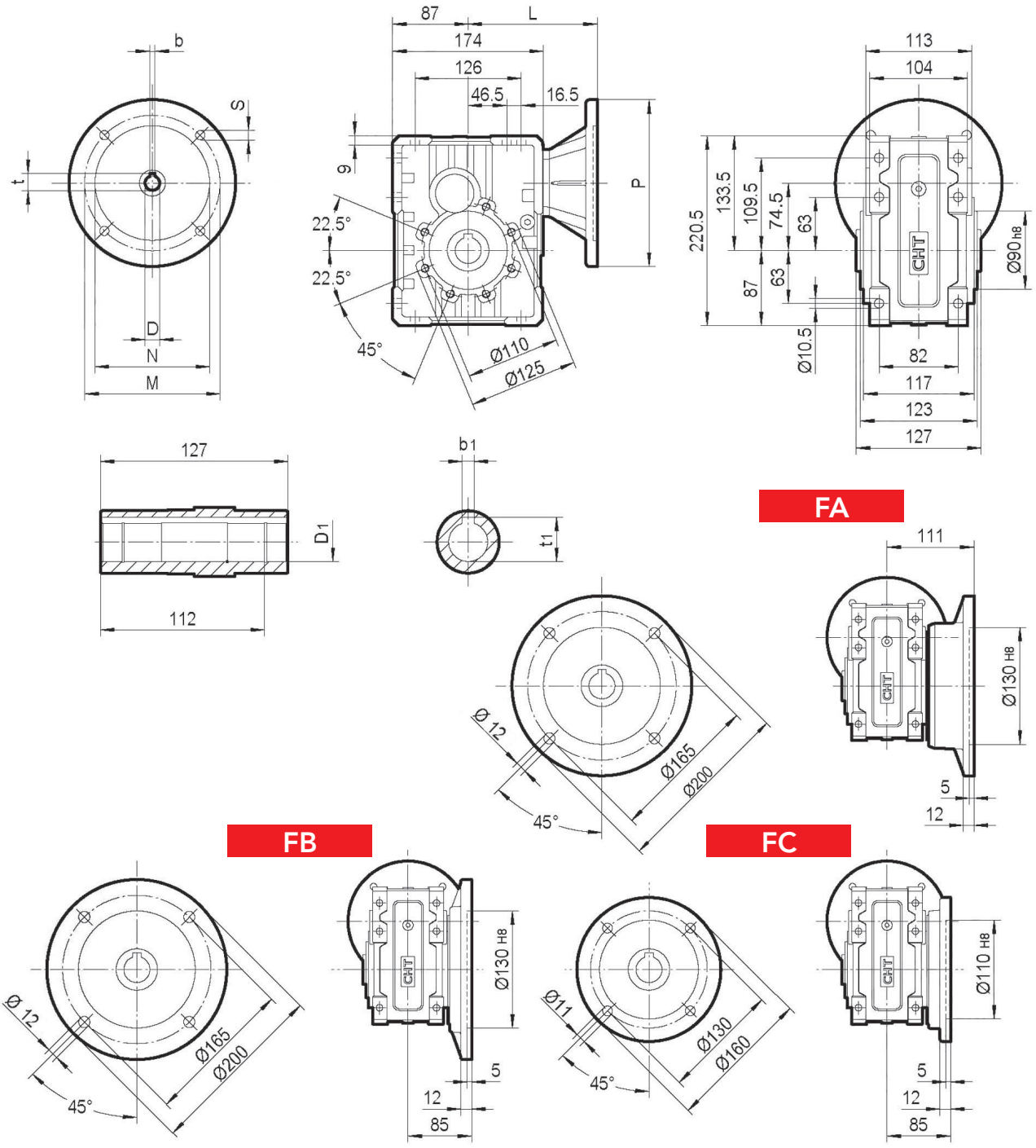
FB



IEC	D_{E8}	b	t	P	M	N	S	T	L	$D_{1\ H8}$	b_1	t_1
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

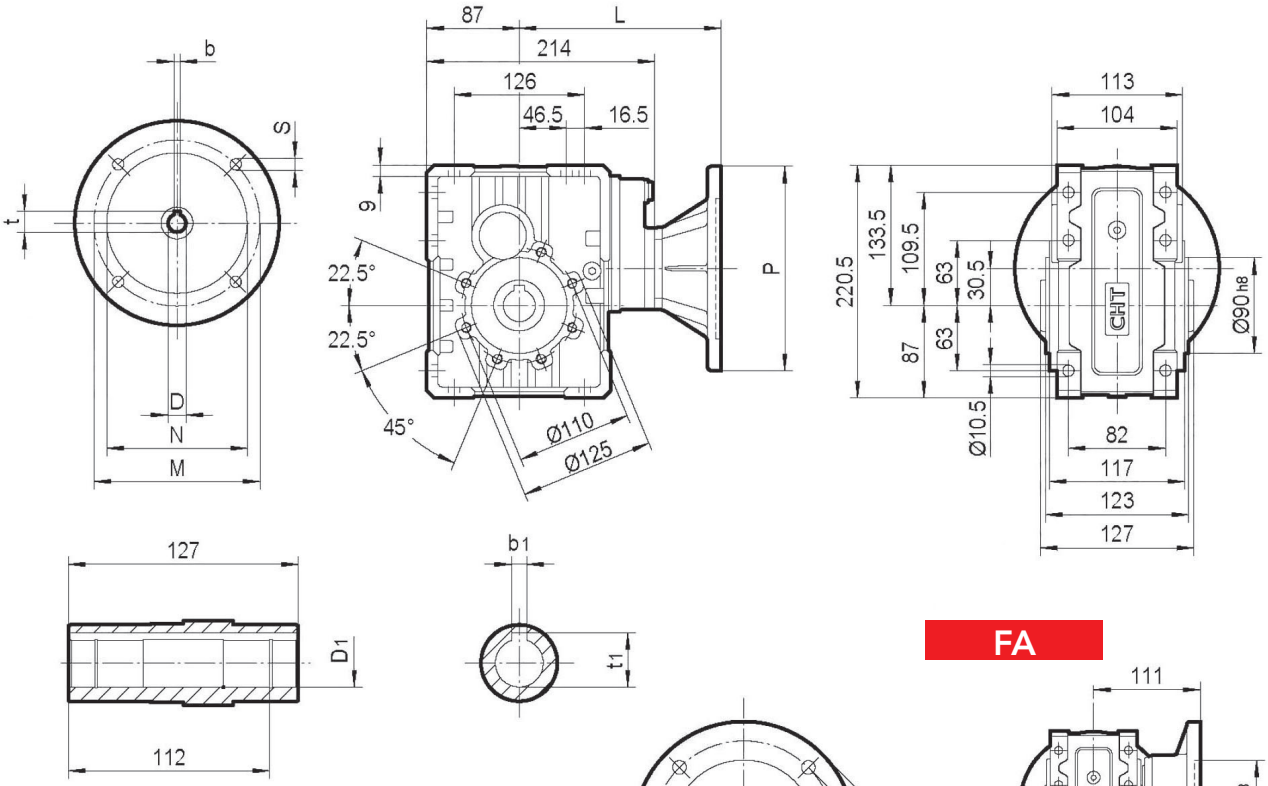
CHO 72



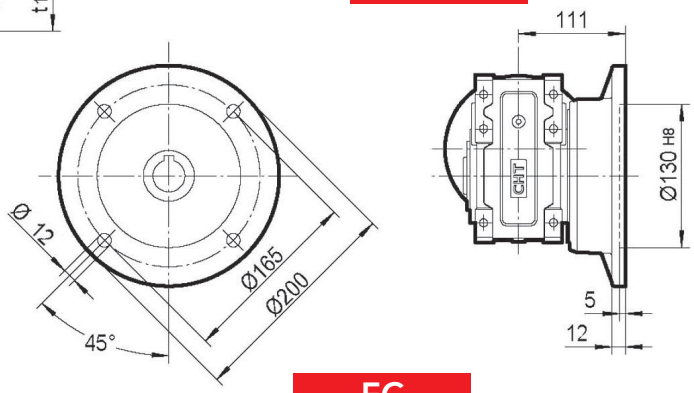
IEC	DE8	b	t	P	M	N	S	T	L	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	139	28*	8*	31.3*
71B5	14	5	16.3	160	130	110	9	4	146	30	8	33.3
80B5	19	6	21.8	200	165	130	11	4	166			
80B14	19	6	21.8	120	100	80	7	4	166			
90B5	24	8	27.3	200	165	130	11	4	166			
90B14	24	8	27.3	140	115	95	9	4	166			
100/112B5	28	8	31.3	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

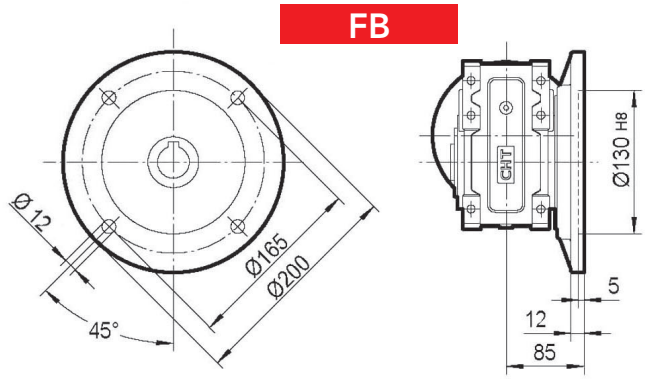
CHO 73



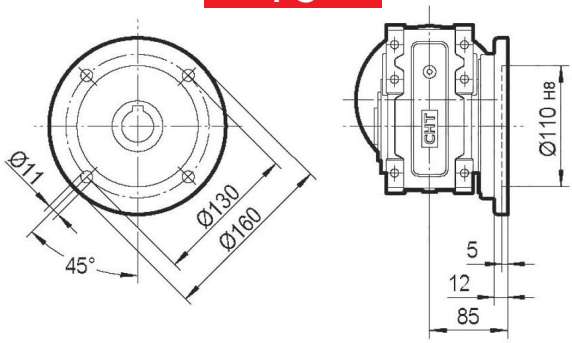
FA



FB



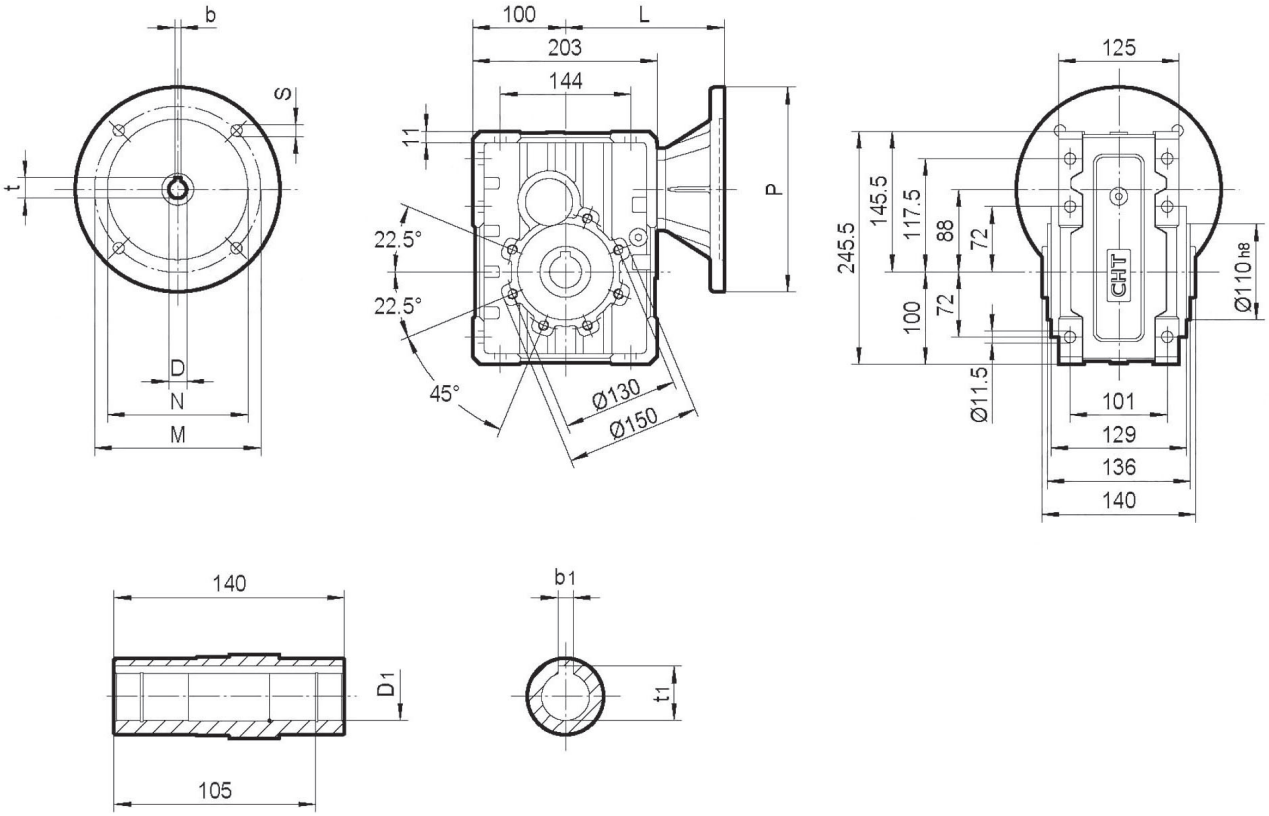
FC

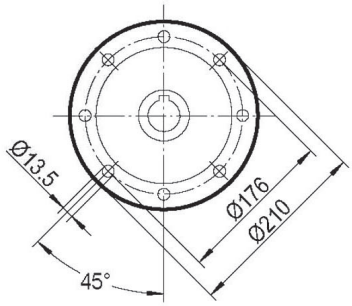


IEC	DE8	b	t	P	M	N	S	T	L	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	179	28*	8*	31.3*
71B5	14	5	16.3	160	130	110	9	4	186	30	8	33.3
80B5	19	6	21.8	200	165	130	11	4	206			
80B14	19	6	21.8	120	100	80	7	4	206			
90B5	24	8	27.3	200	165	130	11	4	206			
90B14	24	8	27.3	140	115	95	9	4	206			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	216	* only on request		
100/112B14	28	8	31.3	160	130	110	9	4.5	216			

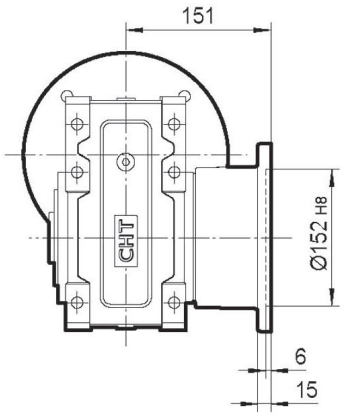
Weight 9.5 Kg excluding motor

CHO 82

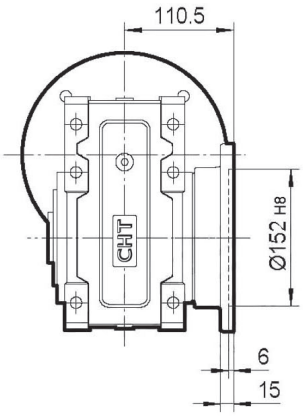




FA



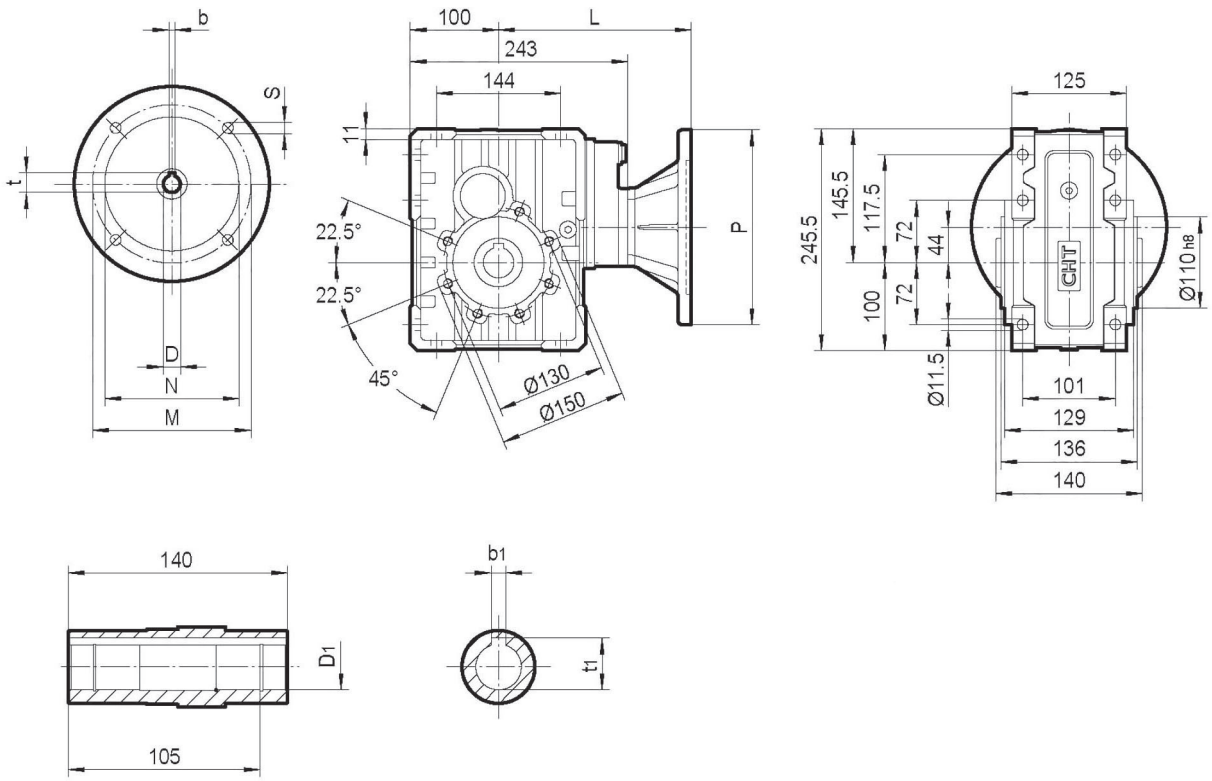
FB

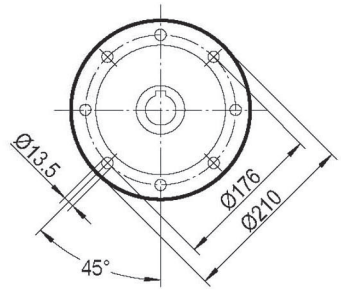


IEC	DE8	b	t	P	M	N	S	T	L	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	155	35	10	38.3
71B5	14	5	16.3	160	130	110	9	4	162			
80B5	19	6	21.8	200	165	130	11	4	182			
80B14	19	6	21.8	120	100	80	7	4	182			
90B5	24	8	27.3	200	165	130	11	4	182			
90B14	24	8	27.3	140	115	95	9	4	182			
100/112B5	28	8	31.3	250	215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

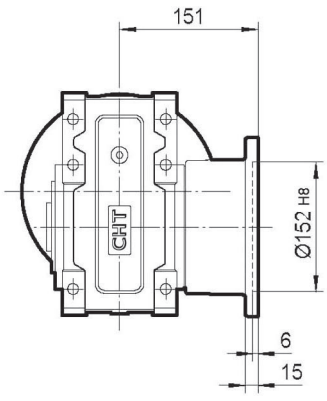
Weight 13.5 Kg excluding motor

CHO 83

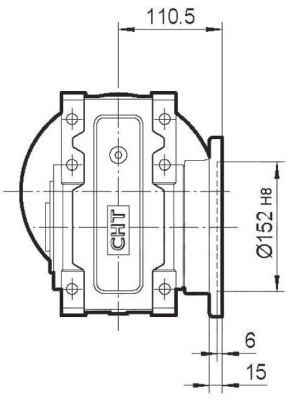




FA



FB

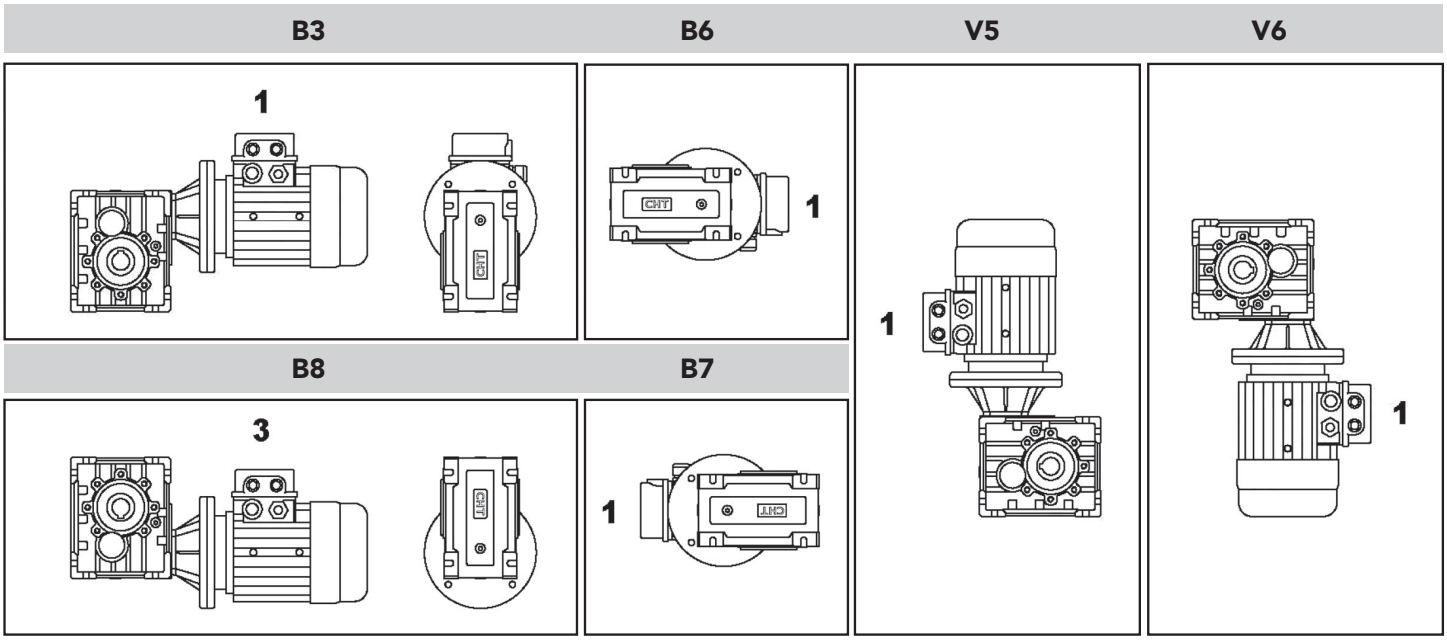


IEC	DE8	b	t	P	M	N	S	T	L	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	195	35	10	38.3
71B5	14	5	16.3	160	130	110	9	4	202			
80B5	19	6	21.8	200	165	130	11	4	222			
80B14	19	6	21.8	120	100	80	7	4	222			
90B5	24	8	27.3	200	165	130	11	4	222			
90B14	24	8	27.3	140	115	95	9	4	222			
100/112B5	28	8	31.3	250	215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

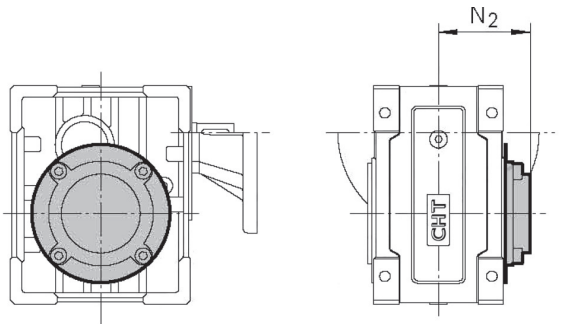
Weight 13.5 Kg excluding motor

ACCESSORIES

MOUNTING POSITIONS



COVER

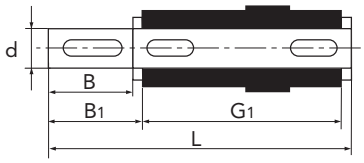


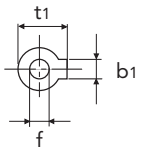
TYPE	N_2
CHO 52/53	59
CHO 62/63	70
CHO 72/73	85.5
CHO 82/83	93.5

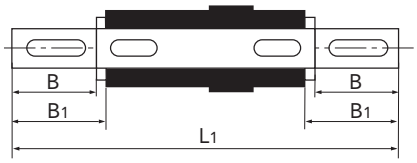
2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

ACCESSORIES

OUTPUT SHAFT





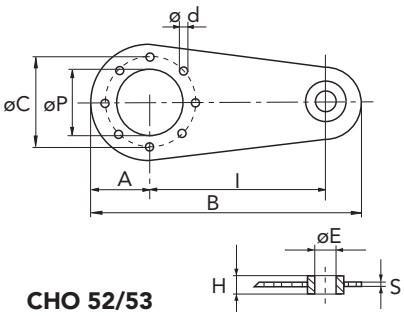


SS **DS**

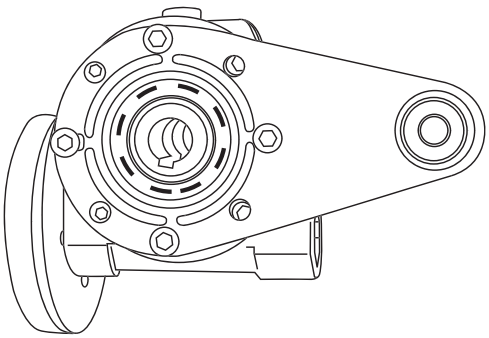
TYPE	d_{h6}	B	B_1	G_1	L	L_1	f	b_1	t_1
CHO 52/53	25	50	53.5	92	153	199	M10	8	28
CHO 62/63	25	60	65	120	192	246.4	M8	8	28
CHO 72/73-28	28	60	65	127	199	255	M8	8	31
CHO 72/73-30	30	60	65	127	199	255	M10	8	33
CHO 82/83	35	60	65	140	214	268	M12	10	38

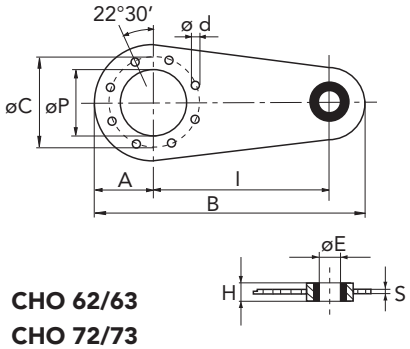
TORQUE ARM

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



CHO 52/53



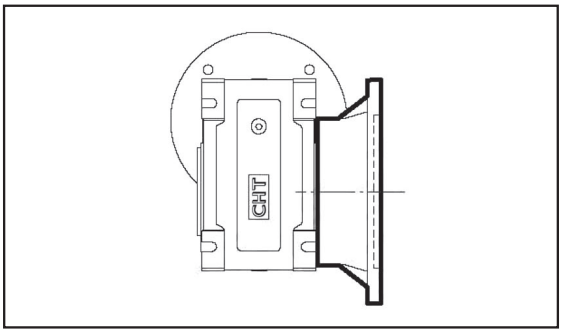


CHO 62/63
CHO 72/73
CHO 82/83

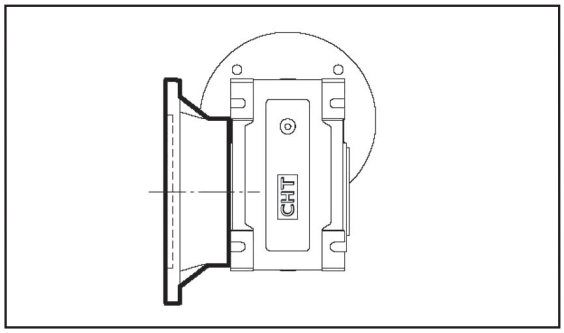
The anchoring point of the torque arm is equipped with a vibration resistant bushing.

POSITION DIAGRAM FOR OUTPUT

FA1, FB1, FC1, FD1, FE1



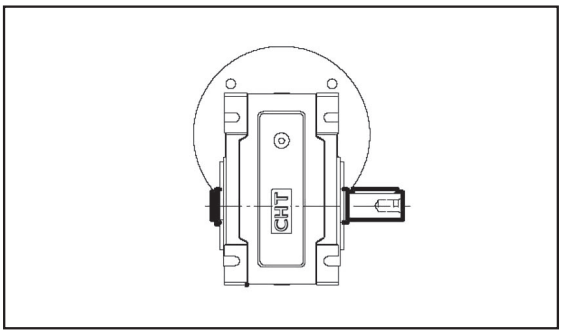
FA2, FB2, FC2, FD2, FE2



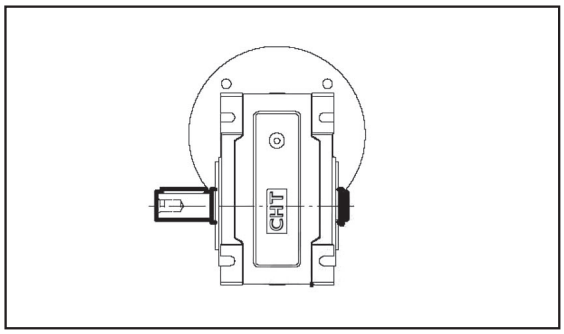
Unless specified otherwise, the reduction unit is supplied with the flange in pos. F.1 referred to position B3.

POSITION DIAGRAM FOR SINGLE OUTPUT

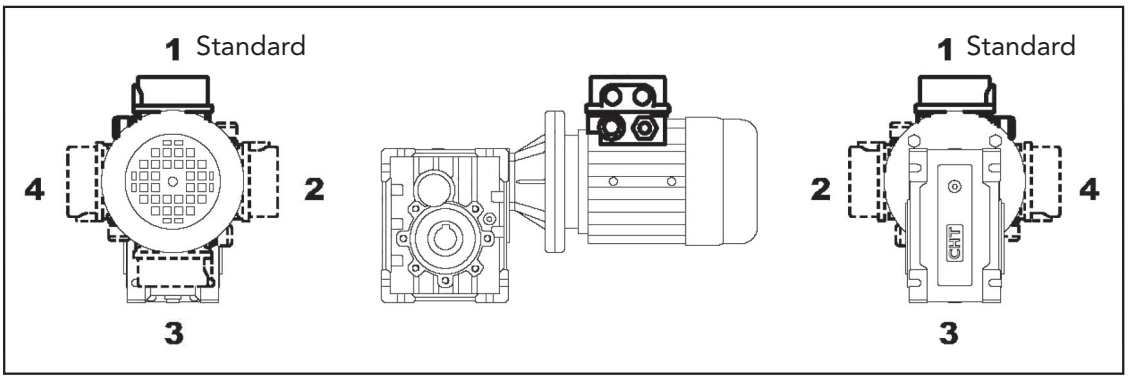
SS1



SS2

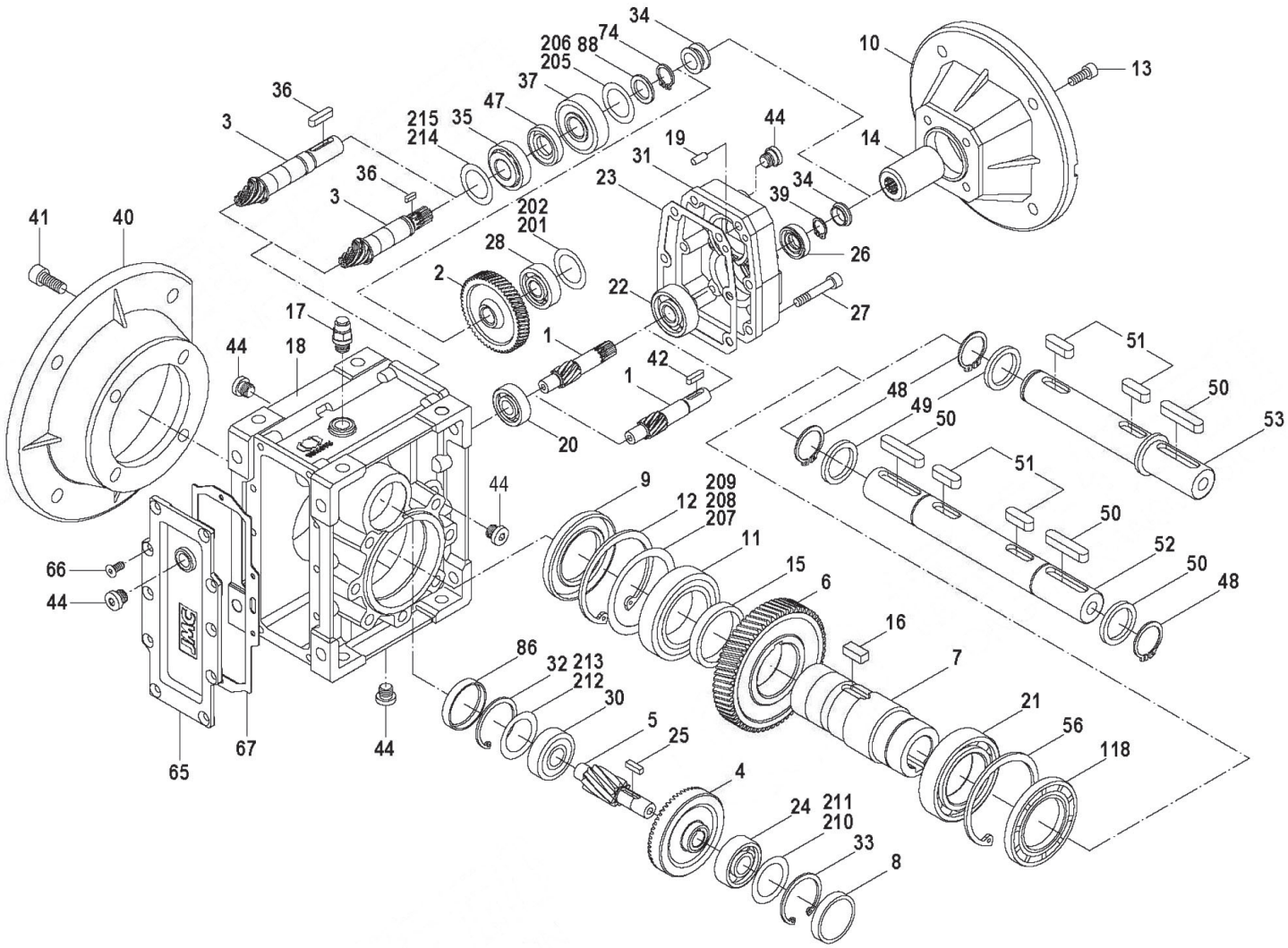


POSITION OF TERMINAL BOX



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***
Quantity, availability and prices with Chiaravalli B2B



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 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 **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.

2D and 3D drawings available on the web site ***www.chiaravalli.com***
Quantity, availability and prices with Chiaravalli B2B

CHIARAVALLI GROUP SpA

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.

POWER P

$P_1 * \eta = P_2$
P_1 = Input power
P_2 = Output power
η = Transmission efficiency

ROTATION SPEED n

n_1 = Input speed
n_2 = Output speed

An output speed ≤ 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

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

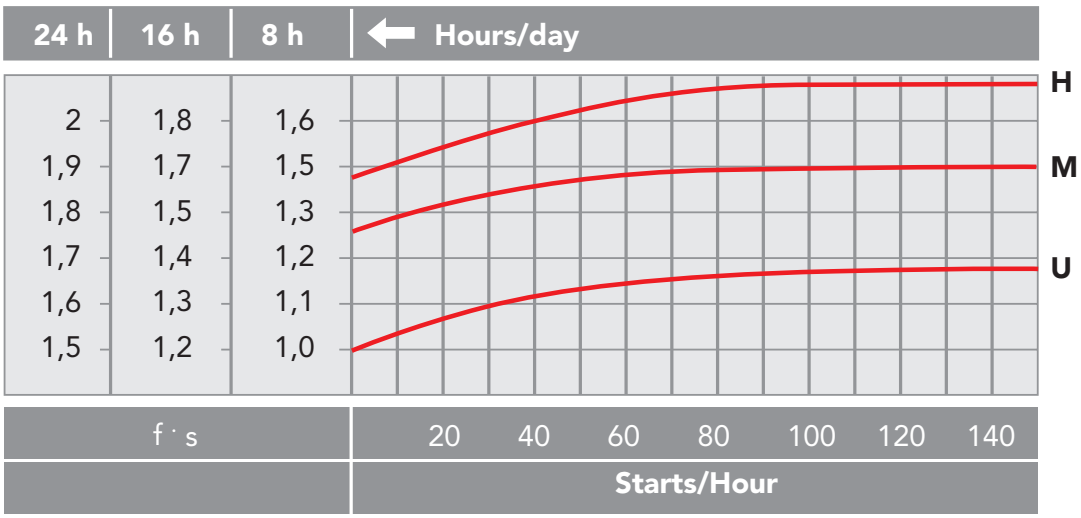
$$M_2 \geq M_2 \cdot f_s \left[Nm\right]$$

M_2 = Output torque
M_{2n} = Rated output torque
P_1 = Input power
η = Transmission efficiency
f_s = Service factor

SERVICE FACTOR Fs

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

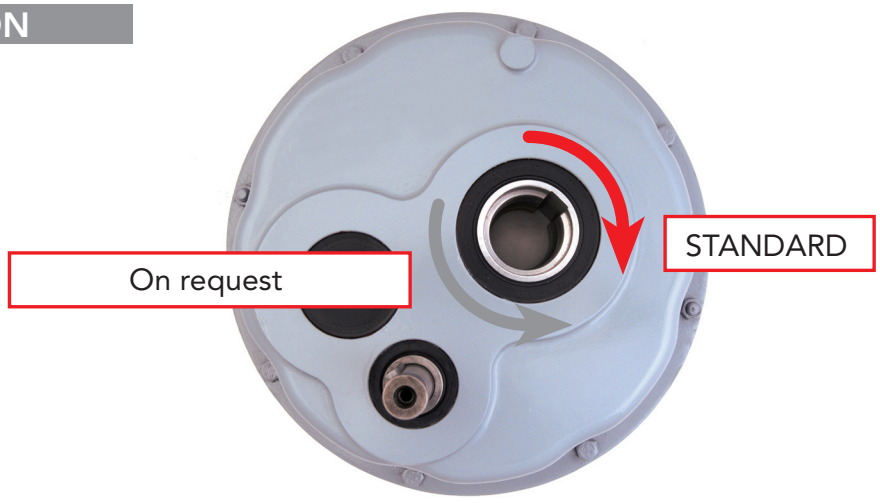
Relationship between radial load F_R e R_{n1} must be provided according to following representation.

$$F_R \leq F_{n1}$$

BACKSTOP DEVICE

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.

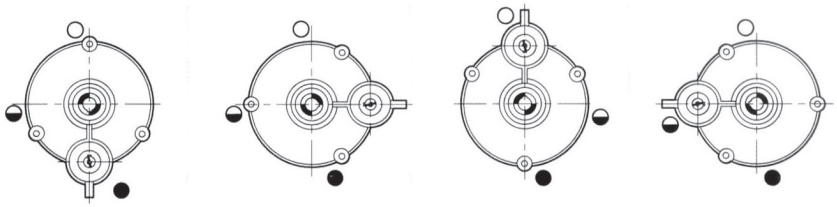
LUBRICATION (Litres)							
CHA 30	**CHA 35/2**	**CHA 40/2**	**CHA 45/2**	**CHA 50/2**	**CHA 60/2**	**CHA 70/2**	**CHA 80/2**
0.5	1.1	1.8	3.6	7.3	7.5	14.0	11.0

NOTE: The gearboxes are supplied without oil.

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

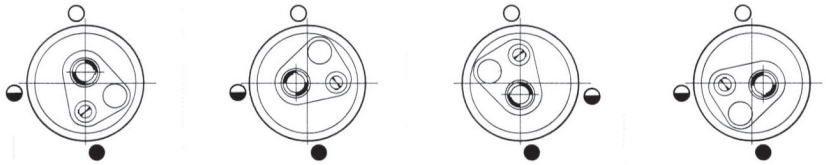
For choosing suitable oil, you must consider viscosity values which are specified according to type of load and ambient temperature on above table.

CHA 30/1



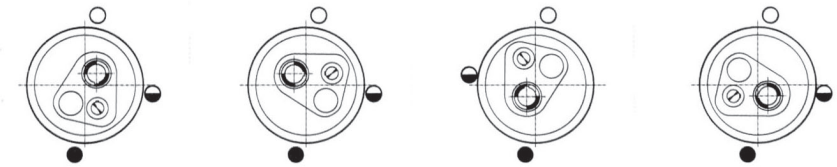
A B C D

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



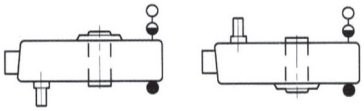
A B C D

CHA 40/2 · CHA 45/2 · CHA 80/2



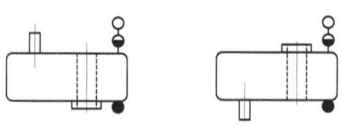
A B C D

CHA 30/1



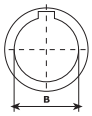
VA VB

CHA 35/2 & CHA 80/2

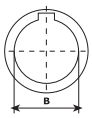


VA VB

- ○ Vent plug - Filler plug
- ◒ Level plug
- ● Drain plug

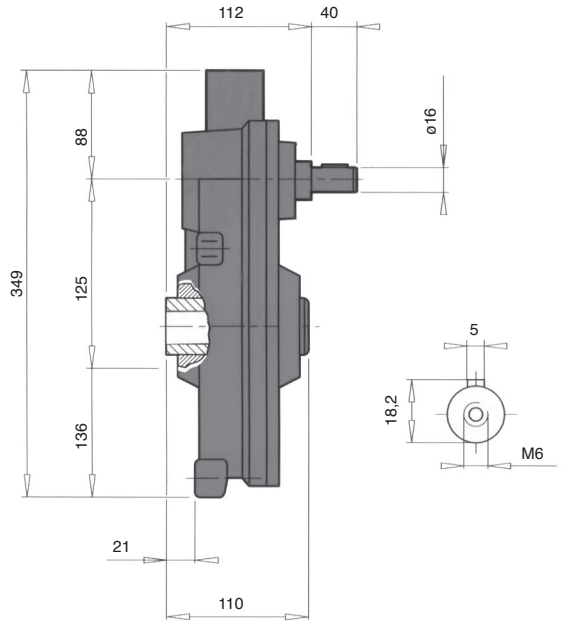


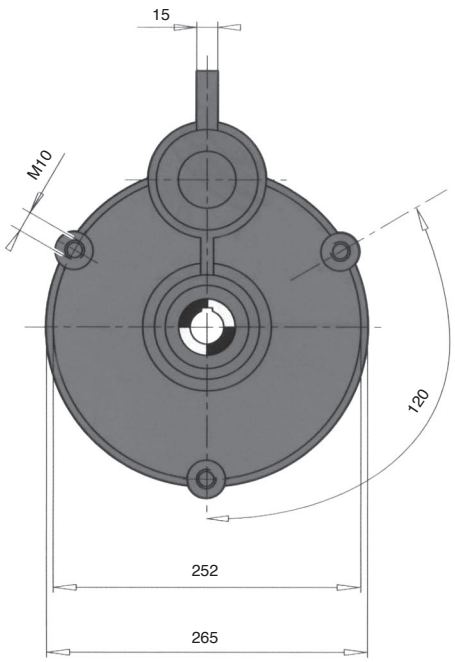
		CHA 30/1/30		CHA 35/2/35				CHA 40/2/40-45					CHA 45/2/45-50-55				
	i	10	12,7	10	15	20	25	10	15	20	25	33	10	15	20	25	30
n_1 = 1400 min^{-1}	n_2 min^{-1}	140	110	140	93	71	56	140	93	71	56	42	140	93	71	56	46
	Mn_2 Nm	130	130	315	330	360	380	630	715	740	760	760	1050	1140	1190	1235	1235
	Pn_1 kW	2	1,5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



		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 min^{-1}	n_2 min^{-1}	140	93	69	56	47	93	69	139	93	70	93	69
	Mn_2 Nm	1838	1805	2048	1900	2100	3040	3413	3990	4180	4725	5795	6405
	Pn_1 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 N	1700	1700	1700	1700	1700	2600	2600	3400	3400	3400	4200	4200
n_1 = 900 min^{-1}	n_2 min^{-1}	90	60	44	36	30	60	44	89	60	45	60	44
	Mn_2 Nm	1995	1850	2100	1995	2205	3135	3570	4620	4275	4830	5985	6615
	Pn_1 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 N	1900	1900	1900	1900	1900	2900	2900	3800	3800	3800	4700	4700
n_1 = 500 min^{-1}	n_2 min^{-1}	50	33	24,5	20	16,5	33	24,5	50	33	25	33	24,5
	Mn_2 Nm	2100	2100	2205	2300	2415	3500	3728	4725	4900	5250	6600	6930
	Pn_1 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 N	2400	2400	2400	2400	2400	3600	3600	4750	4750	4750	5900	5900

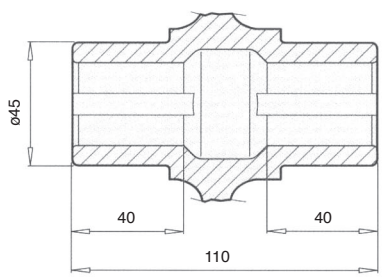
CHA 30/1/30

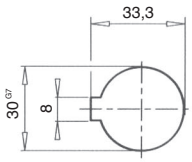


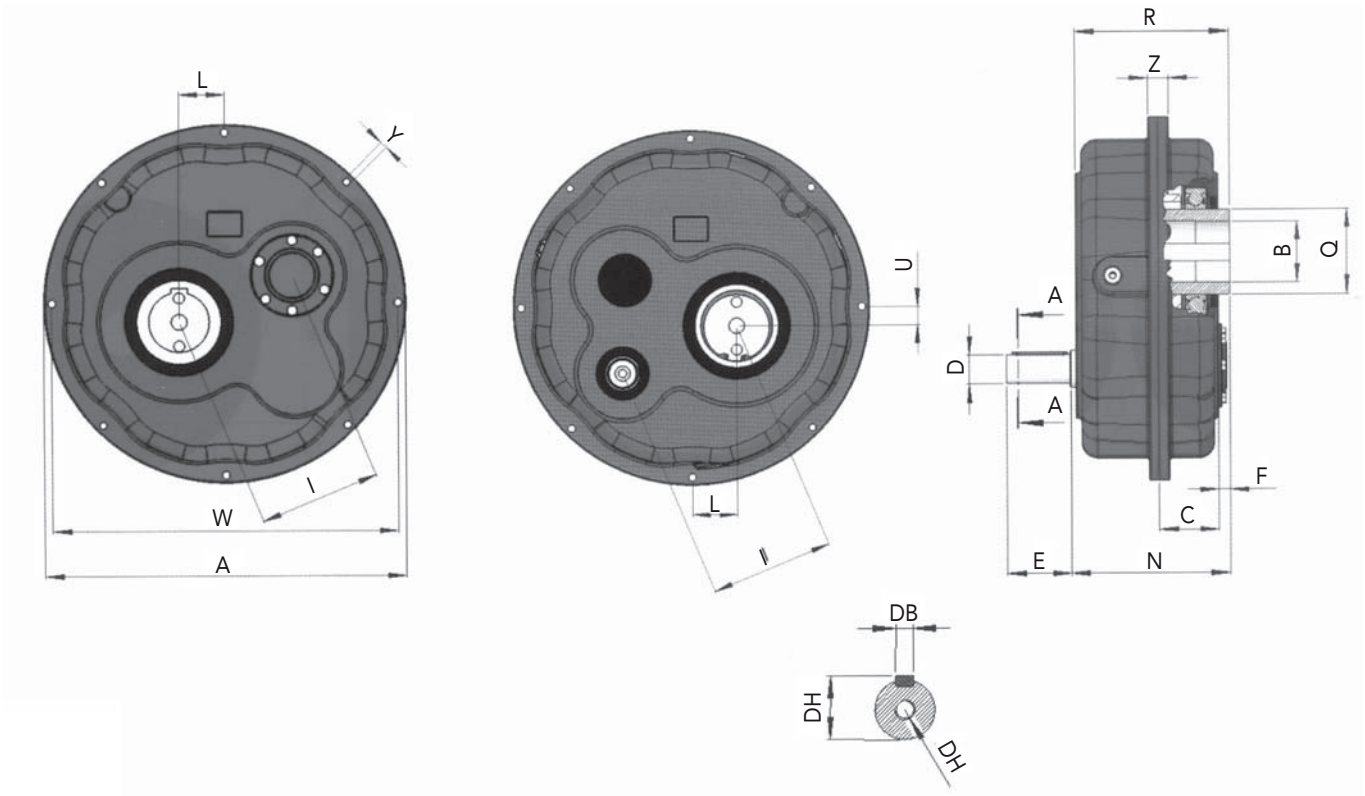


Weight Kg 19

OUTPUT SHAFT

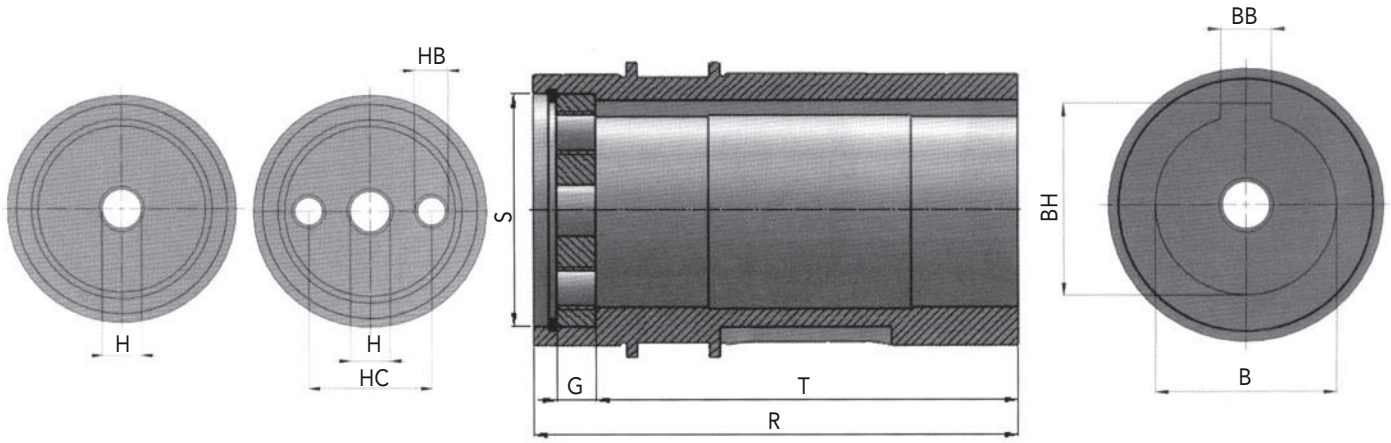




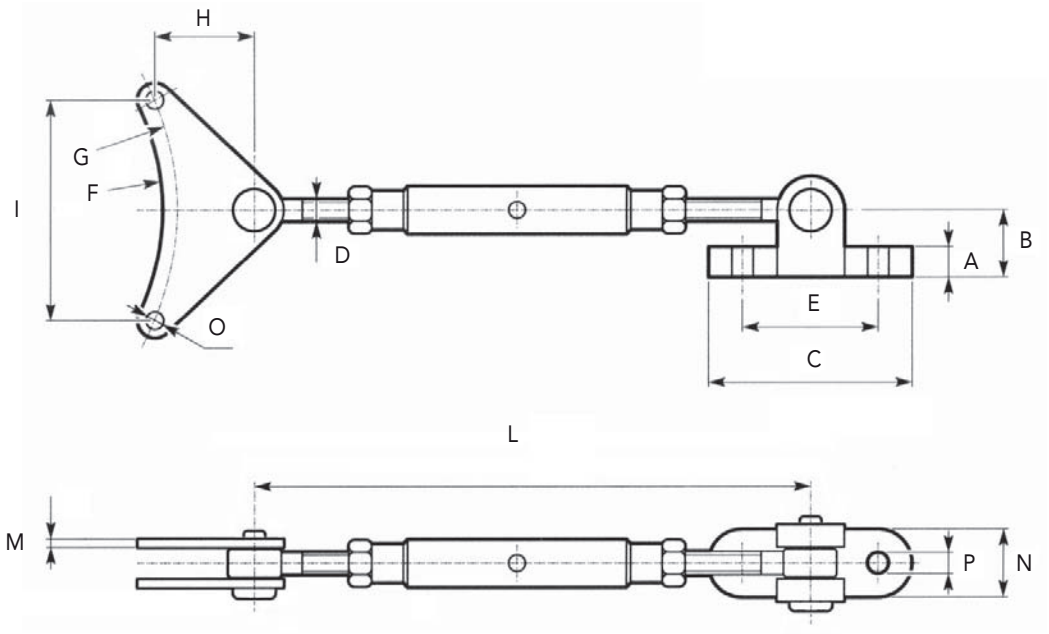


Type	Dimensions																		
	A	B G7	C	D	DB	DH	DM	E	F	I	L	N	Q	R	U	W	Y	Z	Kg
CHA 35/2/35	265	35	44	19	6	21,5	M6	40	12	83	23	126	50	124	21	240	8,5	20,5	18
CHA 40/2/40	322	40	57	24	8	27	M8	50	11	112	30	150	60	144	22	302	8,5	20,5	28
CHA 40/2/45	322	45	57	24	8	27	M8	50	11	112	30	150	60	144	22	302	8,5	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

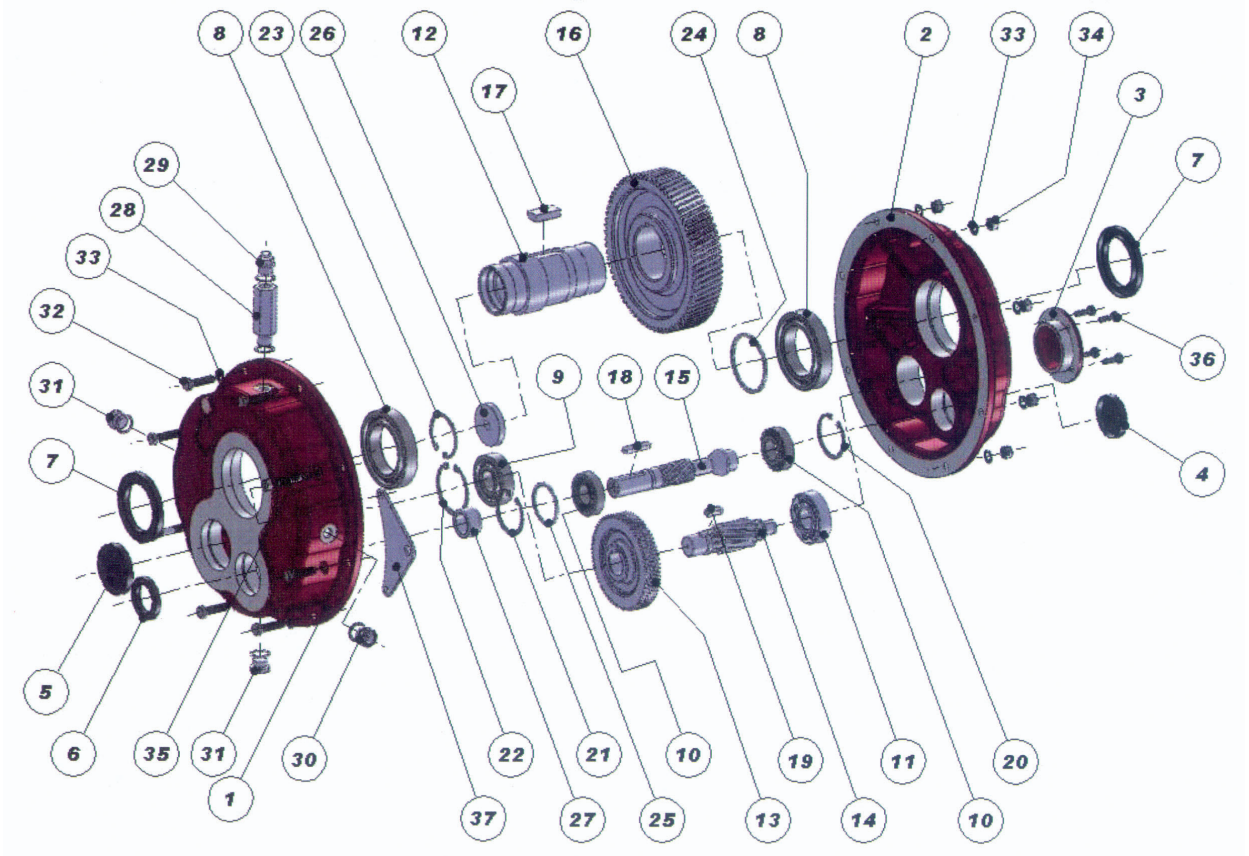


Type	Dimensions									
	B^{G7}	BB	BH	G	H	HB	HC	R	S	T
CHA 30/1/30	30	8	33,3	-	-	-	-	110	-	-
CHA 35/2/35	35	10	38,3	8	M12	-	-	124	40	106
CHA 40/2/40	40	12	43,3	8	M12	-	-	144	52	124
CHA 40/2/45	45	14	47,3	8	M12	-	-	144	52	124
CHA 45/2/45	45	14	48,8	10	M16	-	-	162	62	140
CHA 45/2/50	50	14	53,8	10	M16	-	-	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



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

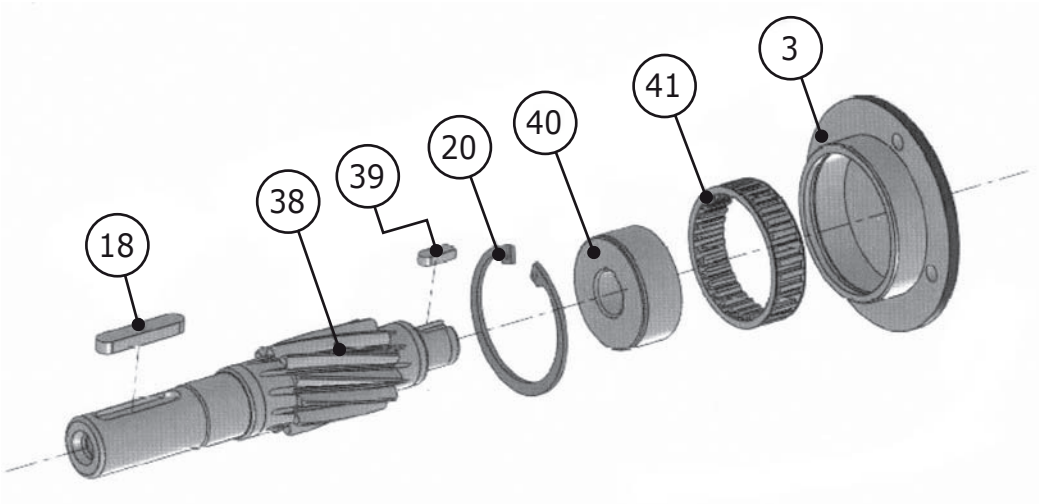
CHA DOUBLE STAGE



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.
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· 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.

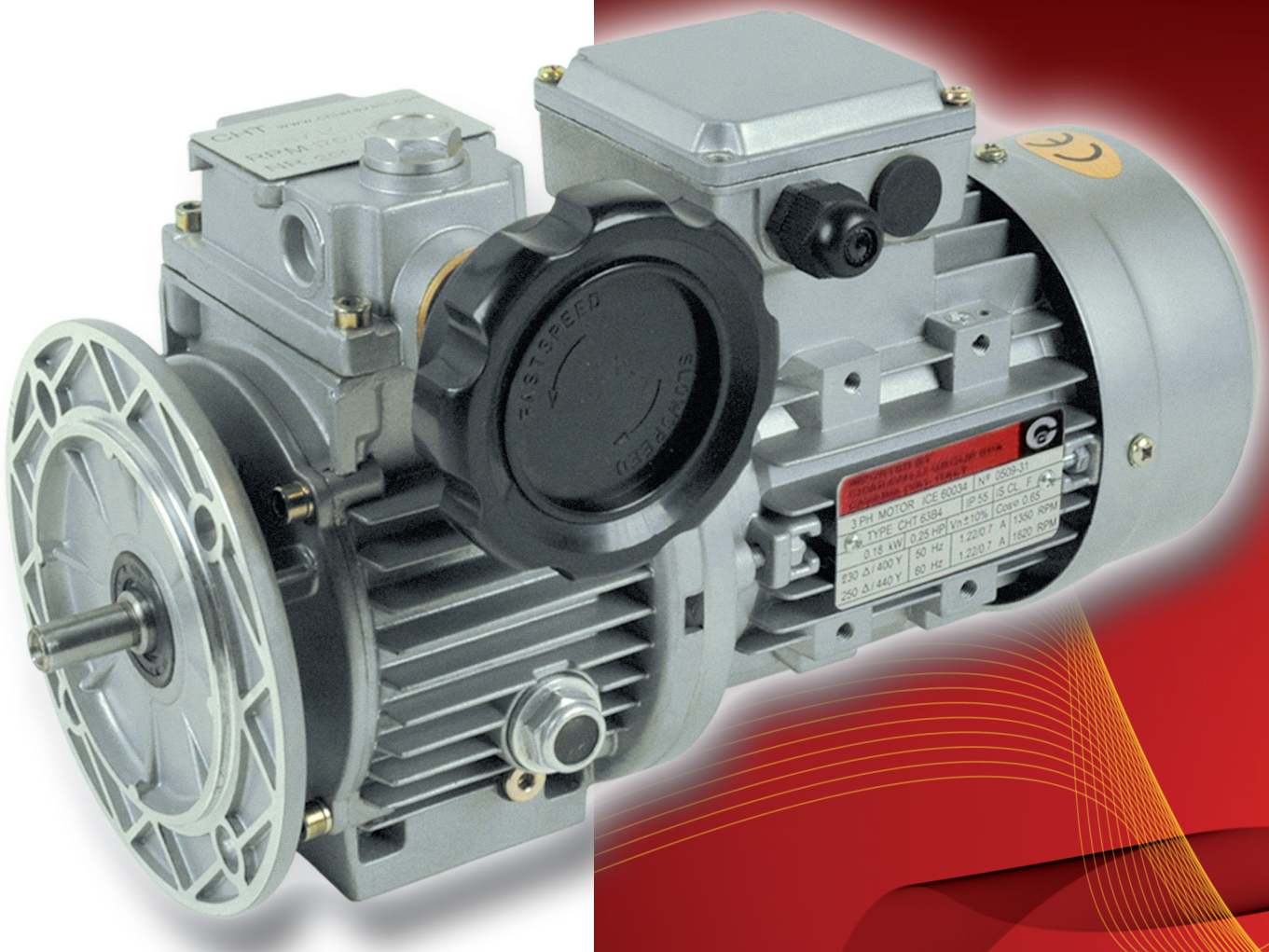
MAINTENANCE
· The gearboxes are supplied empy of oil and must be filled by teh customer before used.

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.

CHIARAVALLI® GROUP SpA



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:

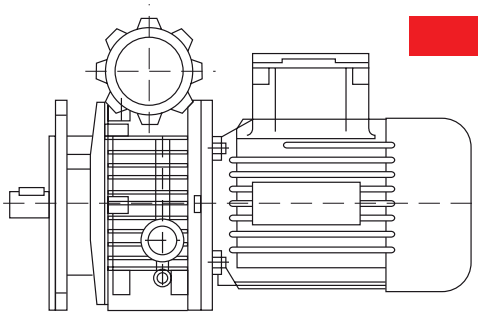
Speed range 1:5
Smooth and silent running
Increasing torque at low speed
High efficiency
Input and output flange B5
Compact design
Aluminium cases sizes 02-05-10
RAL 9022 grey painted

DESIGNATION

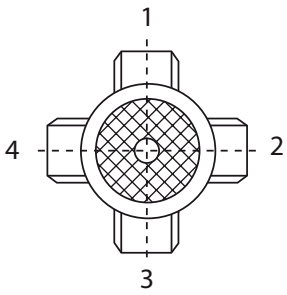
TYPE	SIZE	POWER Kw	POLES	VOLTAGE	FREQUENCY	T.BOX POS.	MOUNT. POS.
CHV	02 05 10 20 30 50	0.18 - 0.22 0.37 0.75 1.1 - 1.5 2.2 3.0 - 4.0	4	230/400	50HZ	1 2 3 4	B5 V1 V3

Mounting position

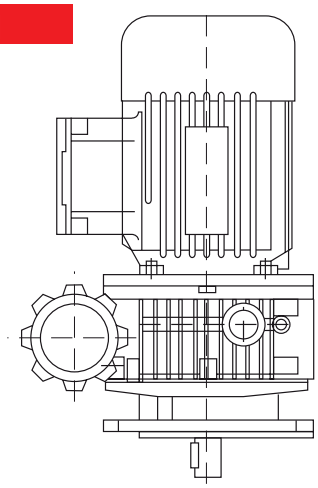
B5



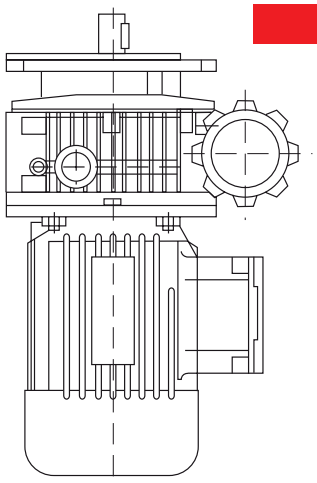
Terminal box position



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

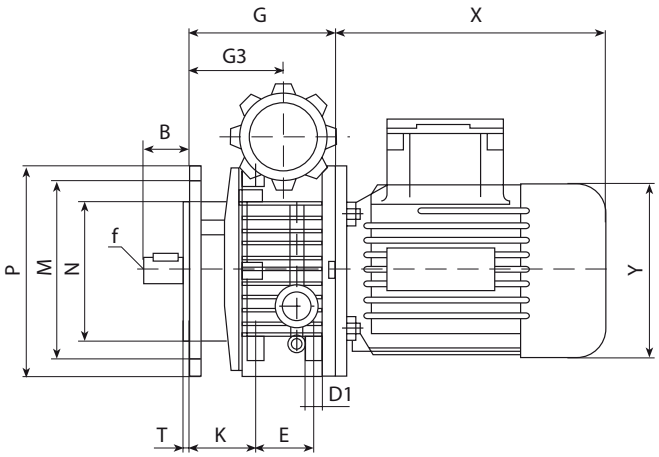
Speed variators are supplied with lubrication oil for assembly position B5, for other positions it will be necessary to add oil, see following table.

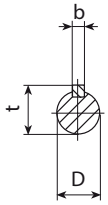
OIL QUANTITY Kg						
CHV	**02**	**05**	**10**	**20**	**30**	**50**
B5	0.13	0.15	0.33	0.8	1.20	1.20
V1	0.3	0.4	0.85	1.40	2.15	2.15
V3	0.2	0.25	0.45	0.90	1.30	1.30

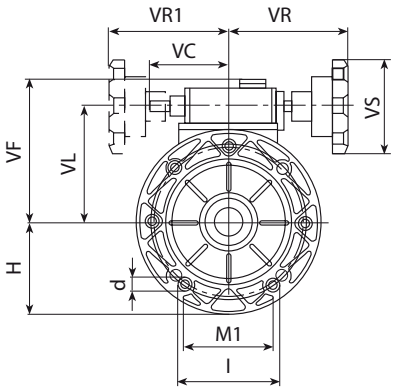
RECOMMENDED OILS

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

CHV 02/05/10/20/30/50 DIMENSIONS







	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

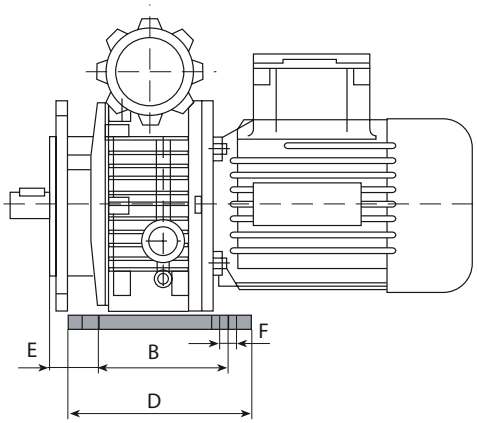
ACCESSORIES

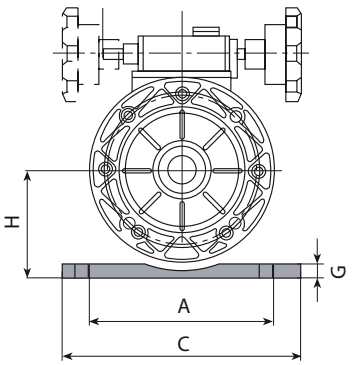
Gravitational indicator

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



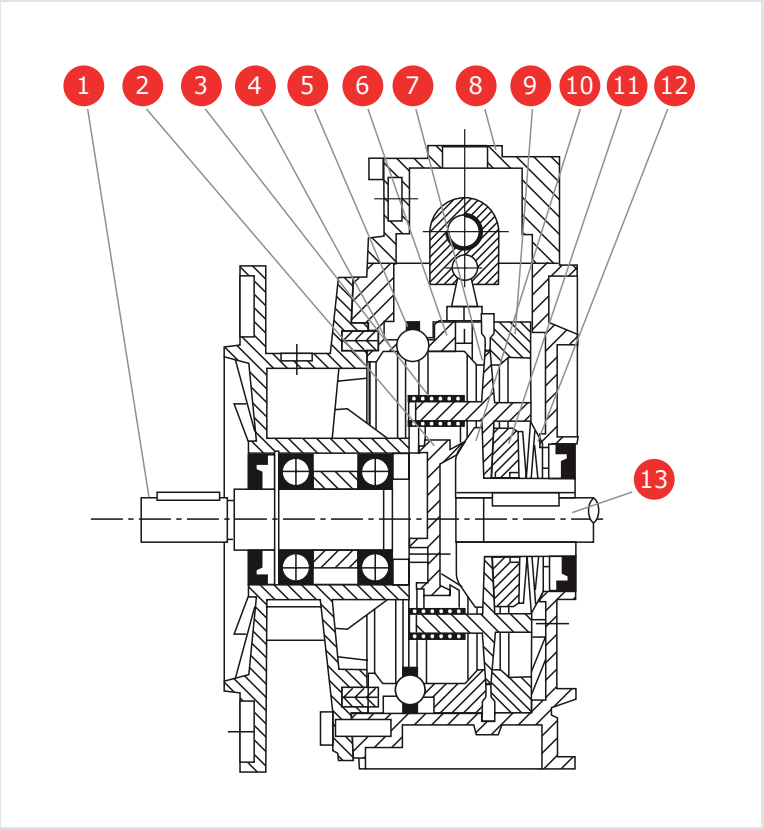


USE AND MAINTENANCE

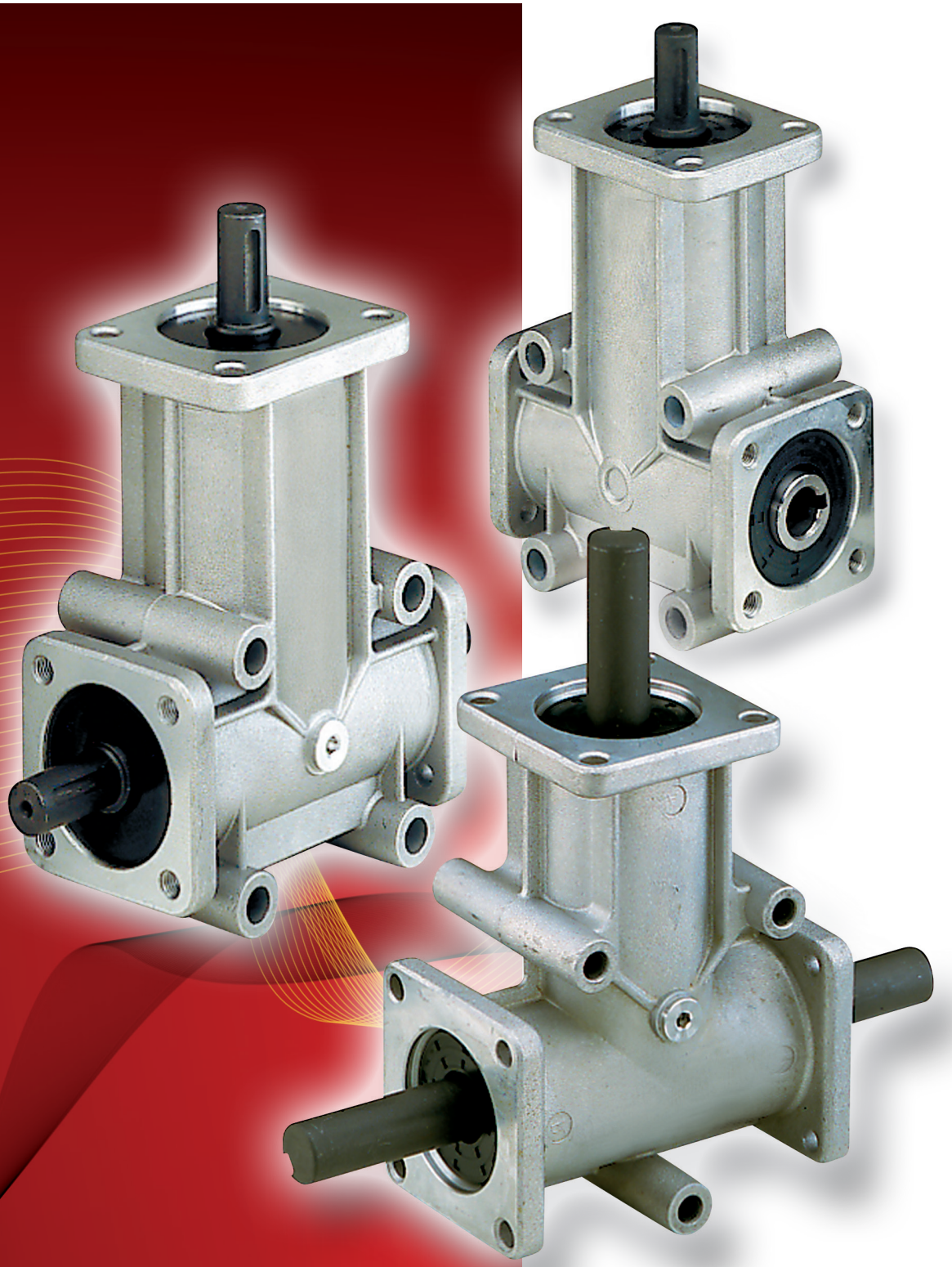
· The screws under the handwheel are well adjusted,don't touch them.
· Don't adjust the handwheel when the motor is off, this can cause internal breaking.
· Speed variators are filled with oil, check the levelbefore running.
· After the running-in the oil must be changed, checkthe level periodically.
· 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



CHIARAVALLI® GROUP SpA



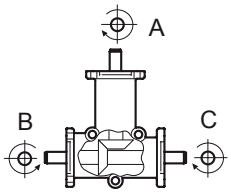
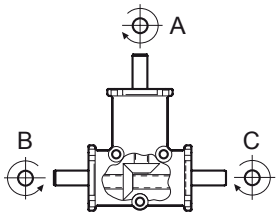
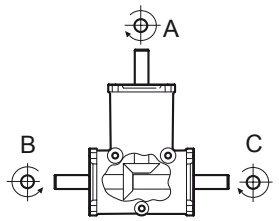
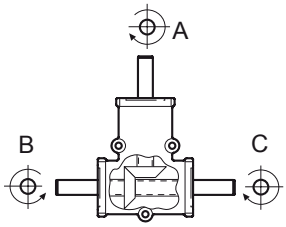
RIGHT-ANGLE PRECISION BEVEL GEAR DRIVES

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.

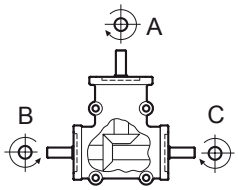
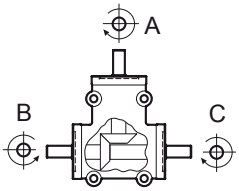
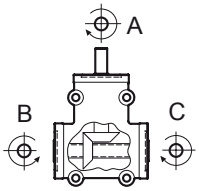
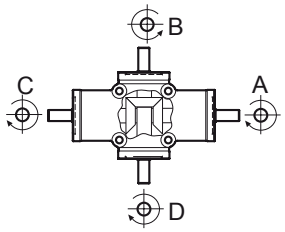
Right-angle identification:

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**

SIZE		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	

SIZE | **MOD. RP** | **CHT**

SIZE		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	
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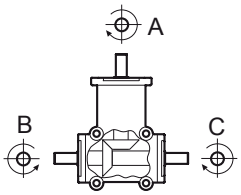
5		Ø 19	1/1	A	B	1	R3191101	4.5
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		Ø 19	1/2	A	C	4	R3191204	
		Ø 19	1/3	A	B	5	R3191305	
		Ø 19	1/3	A	C	6	R3191306	
		Ø 19	1/1	A	B-C	7	R3191107	
		Ø 19	1/2	A	B-C	8	R3191208	
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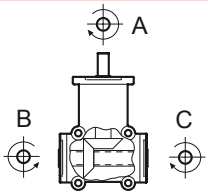
6		Ø 19	1/1	A	B-C	10	R3191110	4.4
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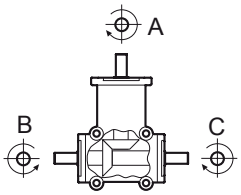
		Ø 19	1/3	A	B-C	12	R3191312	
7		Ø 24	1/1	A	B	1	R3241101	4.6
		Ø 24	1/1	A	C	2	R3241102	
		Ø 24	1/2	A	B	3	R3241203	
		Ø 24	1/2	A	C	4	R3241204	
		Ø 24	1/3	A	B	5	R3241305	
		Ø 24	1/3	A	C	6	R3241306	
		Ø 24	1/1	A	B-C	7	R3241107	
		Ø 24	1/2	A	B-C	8	R3241208	
		Ø 24	1/3	A	B-C	9	R3241309	

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. If also involves defining the conditions under wich the angle bevel gear will be used. Defining operating conditions involves taking into consideration a number of factor 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 (Pn); Pn = Pe (Horsepower) x FS.
3) Use the output speed and the rated power (Pn) 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°C ÷ 80°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

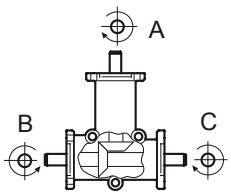
SERVICE FACTOR Fs

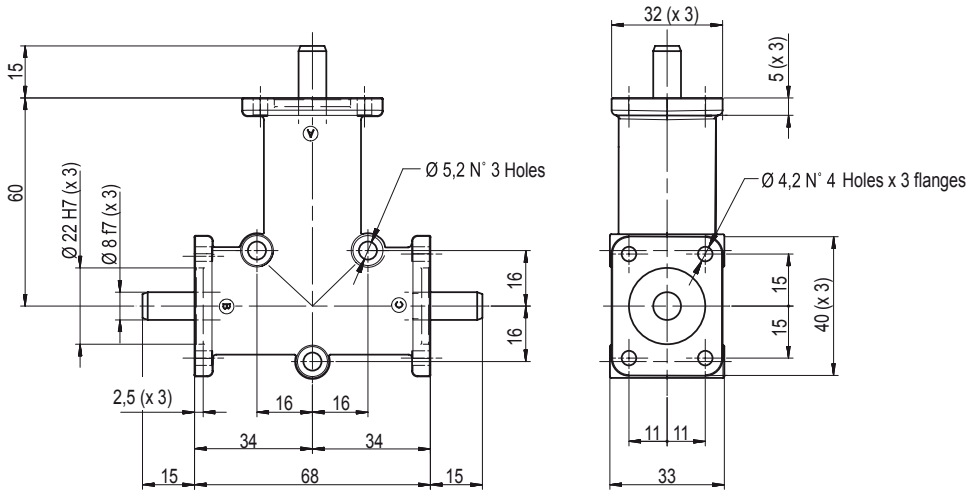
	hours of operation for day			
	3	8	12	24
uniform load	0.7	0.9	1	1.3
load with moderate shocks	0.9	1	1.3	1.8
load with shocks	1.3	1.6	1.8	2.3

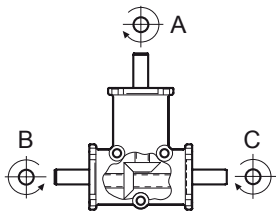
Output speed		50 rpm		100 rpm		200 rpm		400 rpm		800 rpm		1400 rpm		2000 rpm		3000 rpm	
Output torque		T	power	T	power	T	power	T	power	T	power	T	power	T	power	T	power
Type	Ratio	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
RB 1-1/2- RB 1-5	R 1:1	4,7	0,02	3,9	0,04	3,3	0,07	2,8	0,12	2,3	0,19	2,0	0,30	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 RP 4-13/14 RP 2-7 RP 4-19		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
RB 3-1/2 RB 3-5		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
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 RP 7-1/2- RB 4-5 RP 5-7- RP 7-7		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
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 RP 4-15/16 RP 2-8 RP 4-20		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
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 RP 7-3/4- RB 4-6 RP 5-8- RP 7-8		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 2-5/6 RP 2-9 RP 3-12 RP 4-17/18 RP 4-21	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 5-5/6 RP 5-9 RP 6-12 RP 7-5/6 RP 7-9		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

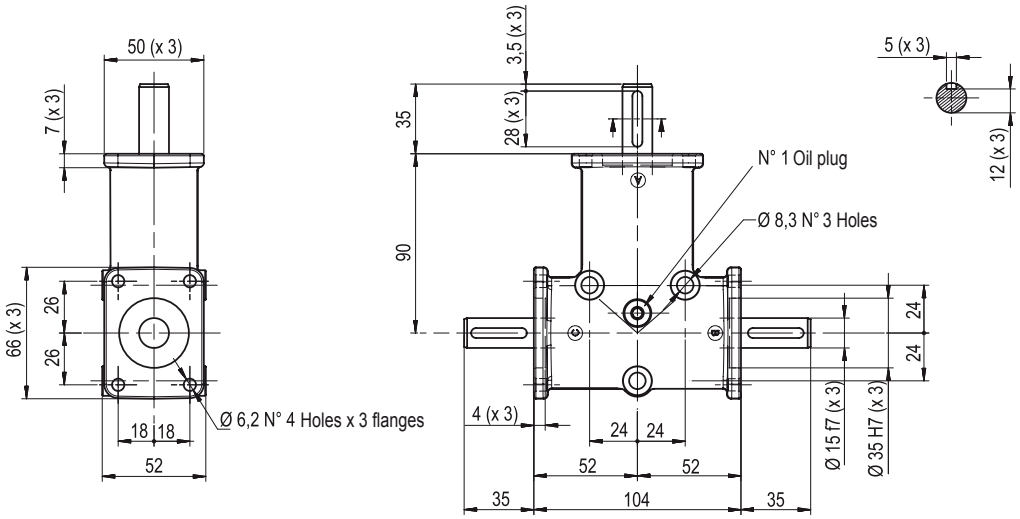
EXTERNAL LOADS IN CONNECTION WITH SPEED Fr = radial load Fa = axial load

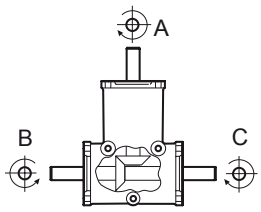
Output speed		50 rpm		100 rpm		200 rpm		400 rpm		800 rpm		1400 rpm		2000 rpm		3000 rpm	
Radial - axial load		Fr	Fa	Fr	Fa	Fr	Fa	Fr	Fa	Fr	Fa	Fr	Fa	Fr	Fa	Fr	Fa
Type	Ratio	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
RB 1-1/2- RB 1-5	R 1:1	139	94	117	79	98	66	83	56	70	47	60	41	55	37	50	34
RP 1-1/2- RP 1-5		195	158	164	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 RP 4-13/14 RP 2-7 RP 4-19		516	418	434	351	365	295	307	248	258	209	224	182	205	166	185	150
RB 3-1/2 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 RP 7-1/2- RB 4-5 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 RP 4-15/16 RP 2-8 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 RP 7-3/4- RB 4-6 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 RP 2-9 RP 3-12 RP 4-17/18 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 RP 5-9 RP 6-12 RP 7-5/6 RP 7-9		619	346	521	291	438	245	368	206	310	173	269	151	246	138	222	124

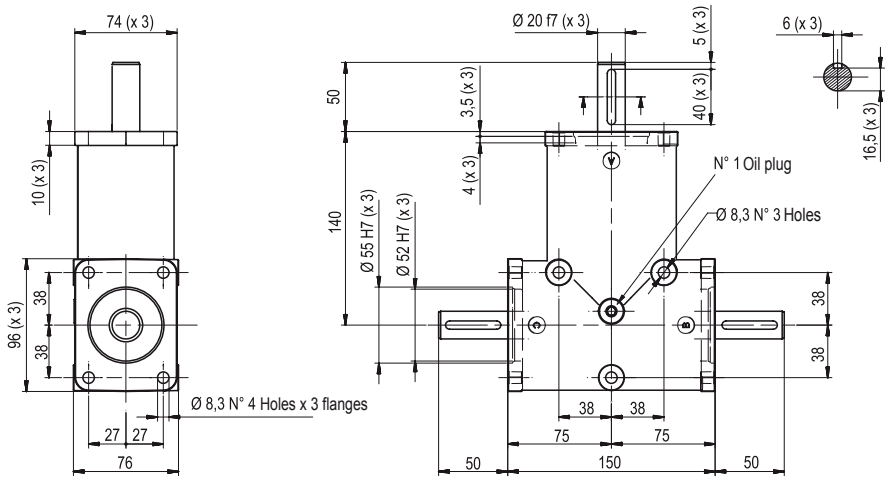
SIZE 1	MOD. RB	CHT			
	RATIO	INPUT	OUTPUT	CODE	WEIGHT Kg
	1/1	A	B	R1081101	0.3
	1/1	A	C	R1081102	
	1/2	A	B	R1081203	
	1/2	A	C	R1081204	
	1/1	A	B-C	R1081105	
	1/2	A	B-C	R1081206	

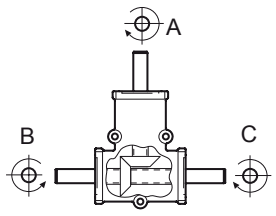


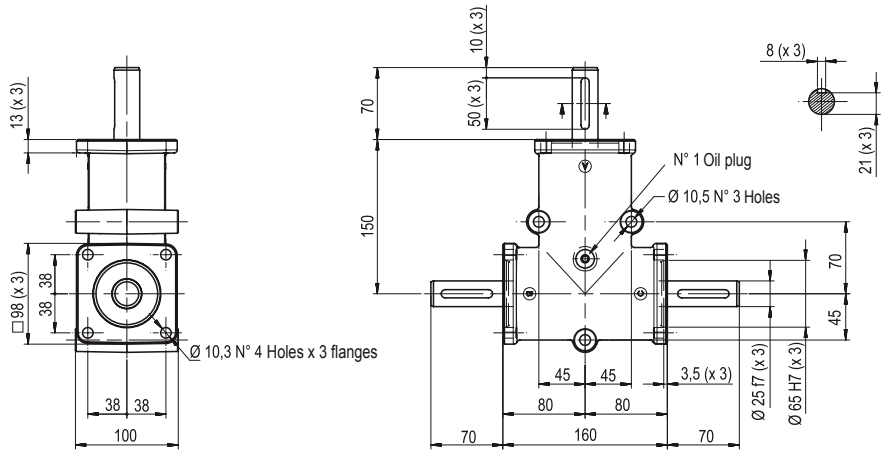
SIZE 2	MOD. RB	CHT			
	RATIO	INPUT	OUTPUT	CODE	WEIGHT Kg
	1/1	A	B	R1151101	1.1
	1/1	A	C	R1151102	
	1/2	A	B	R1151203	
	1/2	A	C	R1151204	
	1/1	A	B-C	R1151105	1.2
	1/2	A	B-C	R1151206	

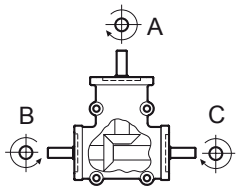


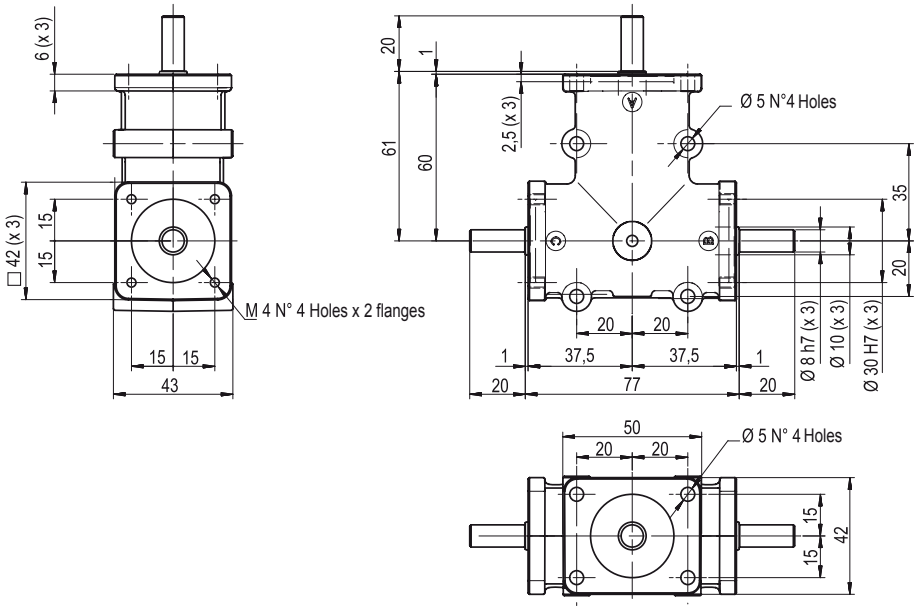
SIZE 3	MOD. RB	CHT			
	RATIO	INPUT	OUTPUT	CODE	WEIGHT Kg
	1/1	A	B	R1201101	3.4
	1/1	A	C	R1201102	
	1/2	A	B	R1201203	
	1/2	A	C	R1201204	
	1/1	A	B-C	R1201105	3.5
	1/2	A	B-C	R1201206	

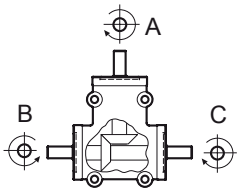


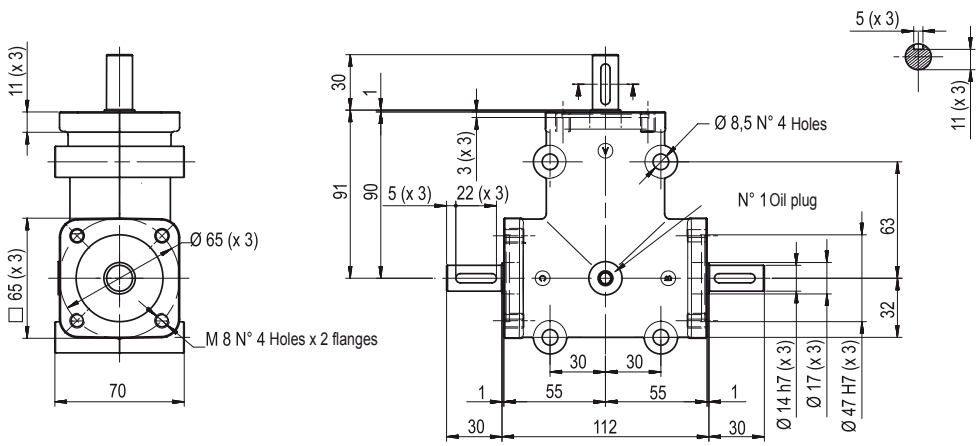
SIZE 4	MOD. RB	CHT			
	RATIO	INPUT	OUTPUT	CODE	WEIGHT Kg
	1/1	A	B	R1251101	5.5
	1/1	A	C	R1251102	
	1/2	A	B	R1251203	
	1/2	A	C	R1251204	
	1/1	A	B-C	R1251105	5.8
	1/2	A	B-C	R1251206	



SIZE 1	MOD. RP		CHT		
	RATIO	INPUT	OUTPUT	CODE	WEIGHT Kg
	1/1	A	B	R3081101	0.6
	1/1	A	C	R3081102	
	1/2	A	B	R3081203	
	1/2	A	C	R3081204	
	1/1	A	B-C	R3081105	
	1/2	A	B-C	R3081206	

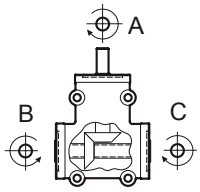


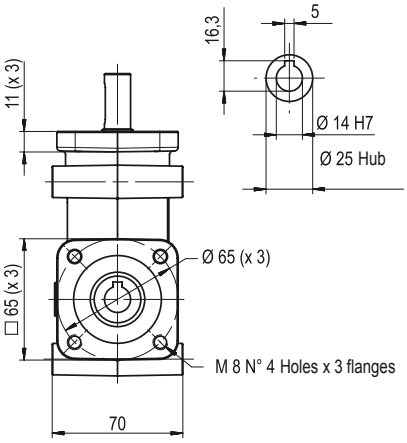
SIZE 2	MOD. RP		CHT		
	RATIO	INPUT	OUTPUT	CODE	WEIGHT Kg
	1/1	A	B	R3141101	2
	1/1	A	C	R3141102	
	1/2	A	B	R3141203	
	1/2	A	C	R3141204	
	1/3	A	B	R3141305	
	1/3	A	C	R3141306	
	1/1	A	B-C	R3141107	
	1/2	A	B-C	R3141208	
	1/3	A	B-C	R3141309	

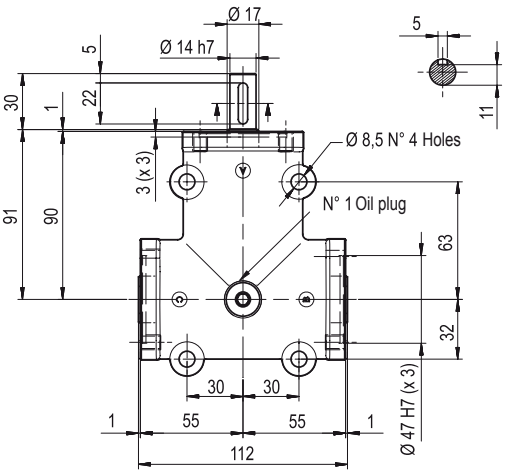


SIZE 3 — MOD. RP — CHT

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	

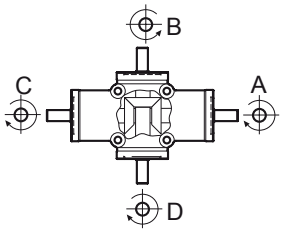


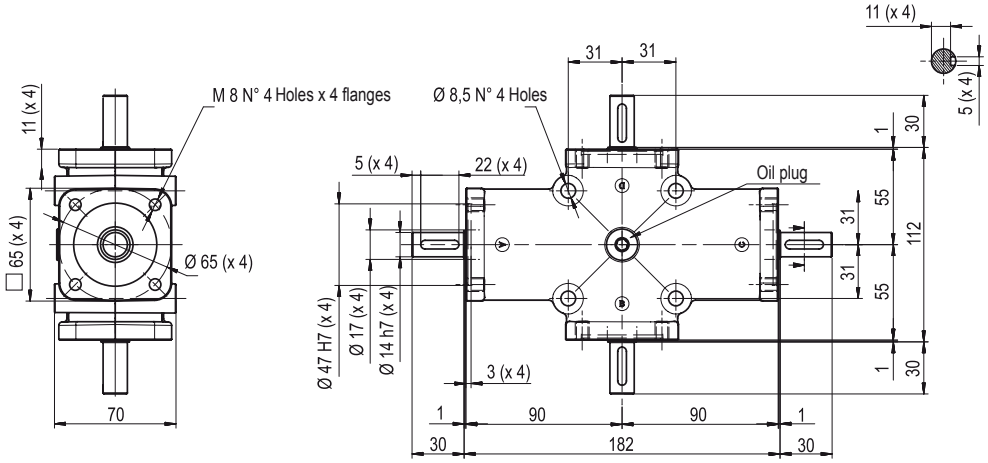


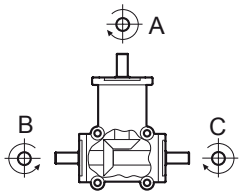


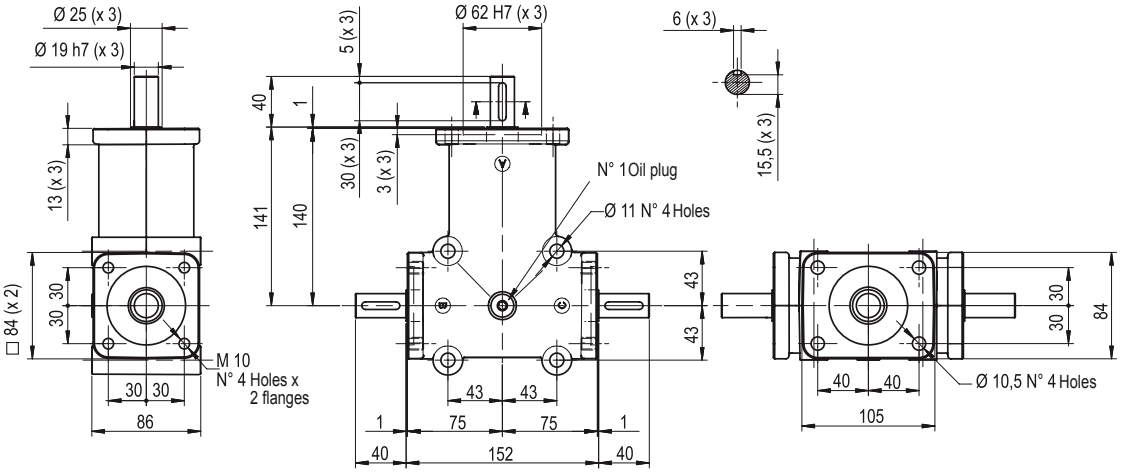
SIZE 4 — MOD. RP — CHT

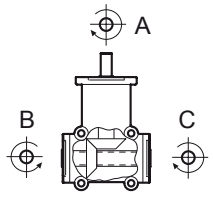
RATIO	INPUT	OUTPUT	CODE	WEIGHT Kg
1/1	A	B-C	R3141113	3.2
1/1	A	C-D	R3141114	
1/2	A	B-C	R3141215	
1/2	A	C-D	R3141216	
1/3	A	B-C	R3141317	
1/3	A	C-D	R3141318	
1/1	A	B-C-D	R3141119	
1/2	A	B-C-D	R3141220	
1/3	A	B-C-D	R3141321	

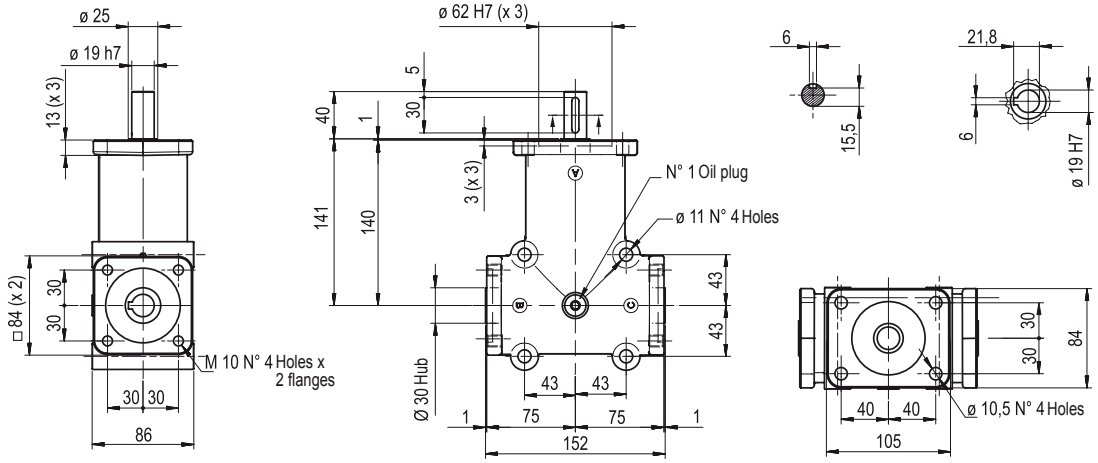


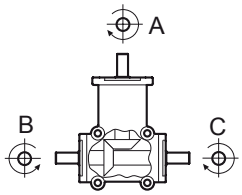


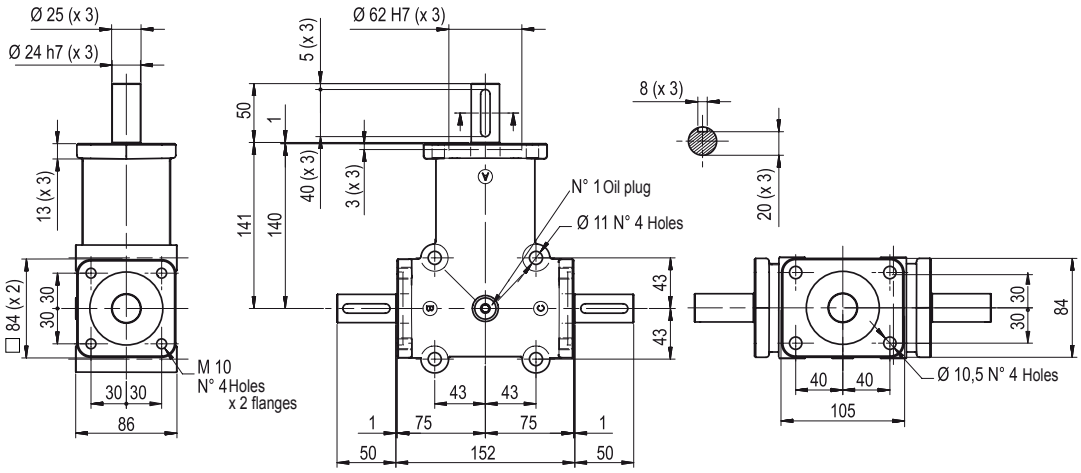
SIZE 5	MOD. RP		CHT		
	RATIO	INPUT	OUTPUT	CODE	WEIGHT Kg
	1/1	A	B	R3191101	4.5
	1/1	A	C	R3191102	
	1/2	A	B	R3191203	
	1/2	A	C	R3191204	
	1/3	A	B	R3191305	
	1/3	A	C	R3191306	
	1/1	A	B-C	R3191107	
	1/2	A	B-C	R3191208	
	1/3	A	B-C	R3191309	



SIZE 6	MOD. RP		CHT		
	RATIO	INPUT	OUTPUT	CODE	WEIGHT Kg
	1/1	A	B-C	R3191110	4.5
	1/2	A	B-C	R3191211	
	1/3	A	B-C	R3191312	



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	



CHIARAVALLI® GROUP SpA

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 50 Hz	PLATE VOLTAGE 60 Hz	NOMINAL POWER	NOMINAL CURRENT	NOMINAL TORQUE	R.P.M.	STARTING CURRENT	STARTING 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.

IE 1

TYPE		POLES	POWER Kw	VOLTAGE V	CURRENT 400 V	TORQUE N/m	EFFICIENCY %	FACTOR COS.ø	WEIGHT 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.

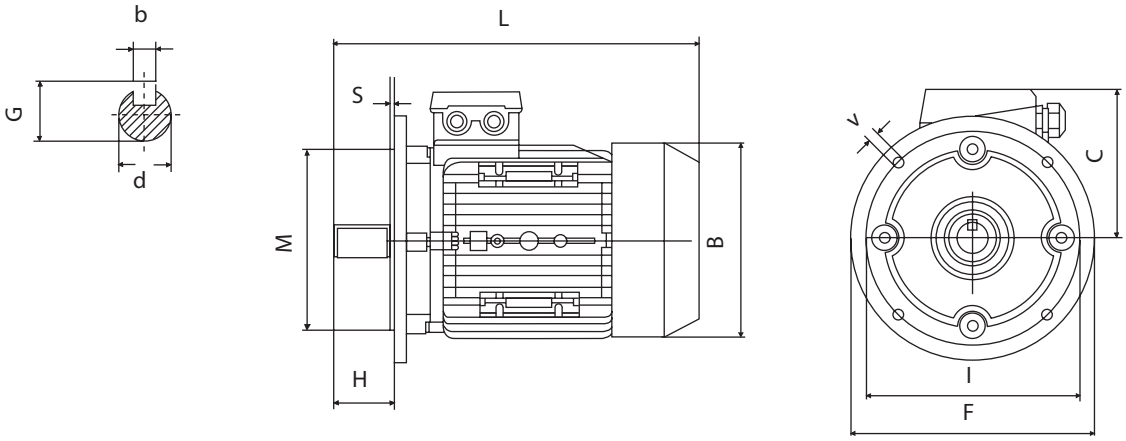
TYPE	POLES	POWER Kw	VOLTAGE V	CURRENT 400 V	TORQUE N/m	EFFICIENCY %	FACTOR COS.ø	WEIGHT Kg.
CHT 80 A2	2	0.75	230/400	1.66	2.51	80.7	0.81	8.5/8.4
CHT 80 B2	2	1.1	230/400	2.31	3.69	82.7	0.83	10.3/10.2
CHT 90 S2	2	1.5	230/400	3.14	5.02	84.2	0.82	14.4/14.3
CHT 90 L2	2	2.2	230/400	4.51	7.38	85.9	0.82	16.3/16.1
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	58.6	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.

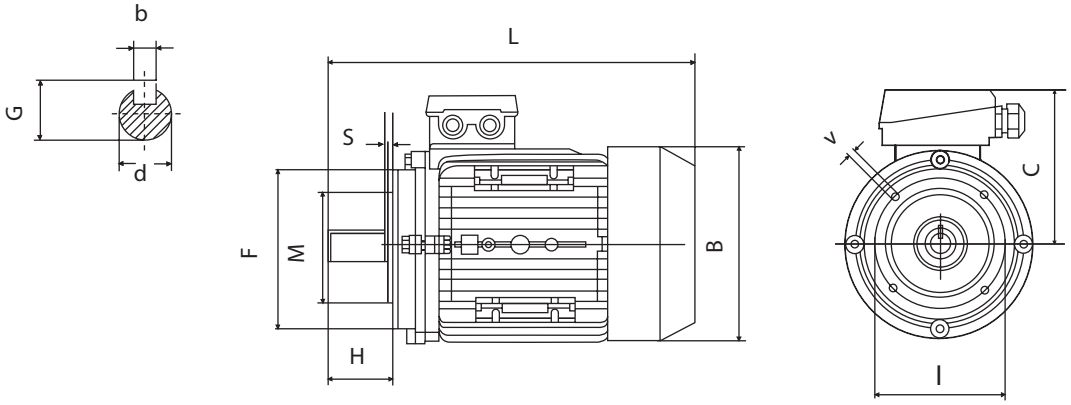
* **SIEMENS** motor available on request

* **MGM** brake motor available on request

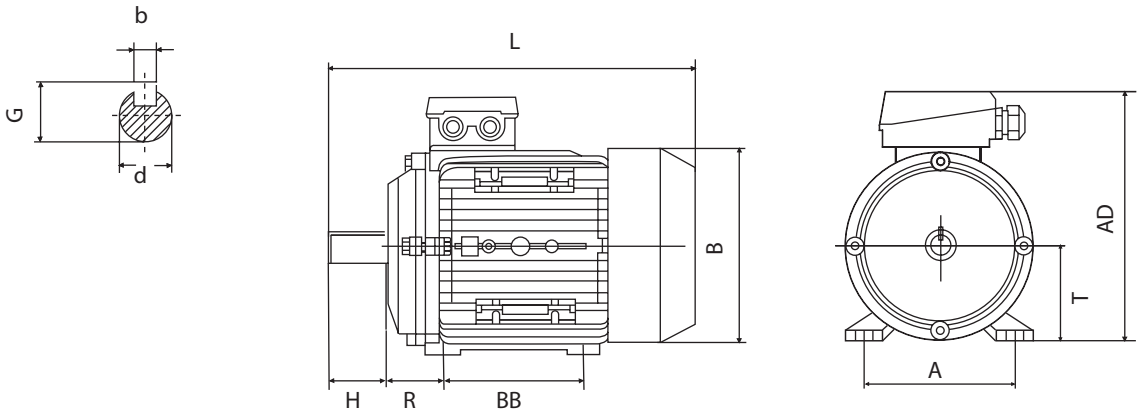
B5



B14



B3



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 (≥ 132)
1. Cl.F - IP55 - IC411
Duty S1 (P_N<0,75kW) - **S3** 70% (P_N≥0,75kW)
Aluminum casing
Efficiency IE1 (IEC60034-30, IEC60034-2-1)

2 POLES 3000 min^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	η 100%	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W [kg]
11	**CHT**	**132 MC**	**2**	2800	37,5	20,5	0,88	88,0	2,0	2,2	7,0	0,017	65
11	**CHT**	**160 M**	**2**	2800	37,5	20,4	0,88	88,4	2,0	2,3	7,0	0,038	104
15	**CHT**	**160 L**	**2**	2800	51,2	27,5	0,88	89,4	2,0	2,3	7,0	0,045	116
18,5	**CHT**	**160 LB**	**2**	2800	63,1	33,3	0,89	90,0	2,0	2,2	7,0	0,055	130

4 POLES 1500 min^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	η 100%	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W [kg]
11	**CHT**	**132 MC**	**4**	1440	73,0	21,5	0,84	88,0	2,2	2,3	7,0	0,044	80
11	**CHT**	**160 M**	**4**	1440	73,0	21,4	0,84	88,4	2,2	2,3	7,0	0,075	107
15	**CHT**	**160 L**	**4**	1440	99,5	28,8	0,84	89,4	2,2	2,3	7,0	0,092	128

6 POLES 1000 min^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	η 100%	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W [kg]
5,5	**CHT**	**132 MB**	**6**	960	54,7	11,9	0,78	85,3	2,0	2,2	6,5	0,046	64
7,5	**CHT**	**160 M**	**6**	940	76,2	16,1	0,78	86,0	2,0	2,0	6,5	0,088	108
11	**CHT**	**160 L**	**6**	940	111,8	23,4	0,78	87,0	2,0	2,0	6,5	0,116	126

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^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	η 100%	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W [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^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	η 100%	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W [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^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	η 100%	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W [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

Δ/Y 230/400V-50Hz (£112) Δ 400V-50Hz (≥ 132)
1. CI.F - IP55 - IC411
Duty S1
Aluminum casing
Efficiency IE3 (IEC60034-30, IEC60034-2-1)

2 POLES 3000 min^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	η 100%	η 75%	η 50%	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W [kg]
11	**CHT**	**160 M**	**2**	2940	35,7	19,6	0,89	91,2	91,4	90,1	2,2	2,3	7,9	0,063	108
15	**CHT**	**160 L**	**2**	2935	48,8	26,5	0,89	91,9	92,2	91,7	2,2	2,3	8,0	0,073	119
18,5	**CHT**	**160 LB**	**2**	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^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	η 100%	η 75%	η 50%	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W [kg]
11	**CHT**	**160 M**	**4**	1460	72,0	20,7	0,84	91,4	91,5	91,5	2,2	2,3	7,5	0,096	111
15	**CHT**	**160 L**	**4**	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^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	η 100%	η 75%	η 50%	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W [kg]
7,5	**CHT**	**160 M**	**6**	970	73,8	15,8	0,77	89,1	89,3	89,0	2,1	2,1	6,7	0,107	111
15	**CHT**	**160 L**	**6**	970	108,3	22,5	0,78	90,3	90,4	90,0	2,1	2,1	7,2	0,146	132

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^{-1}

P_N		Motor	Poles	n_N	M_N	I_N	COS φ		η		M_S/M_N	M_{max}/M_N	I_S/I_N	J_0	W
[kW]				[min^{-1}]	[Nm]	[A]		100%	75%	50%				[kg m^2]	[kg]
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

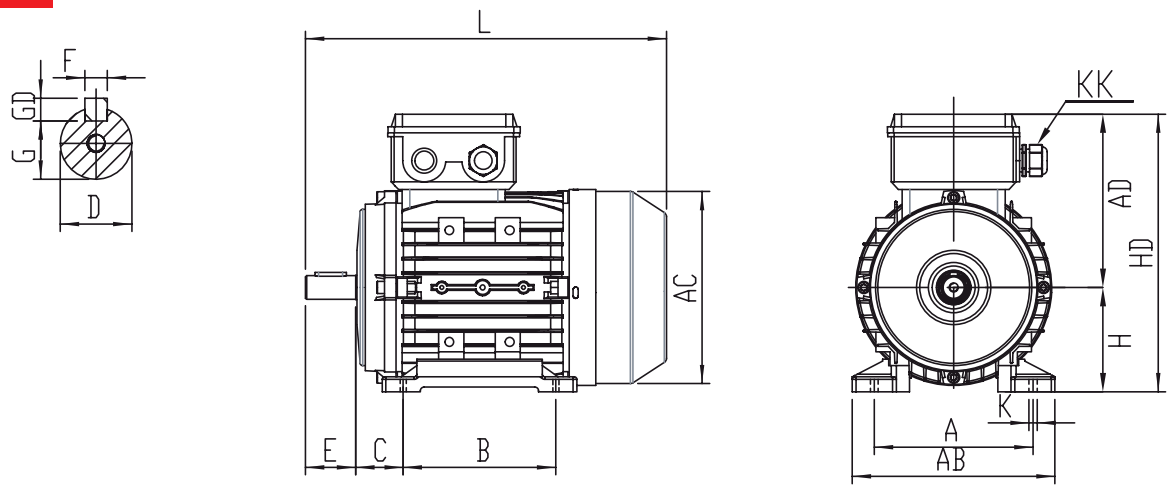
4 POLES 1500 min^{-1}

P_N		Motor	Poles	n_N	M_N	I_N	COS φ		η		M_S/M_N	M_{max}/M_N	I_S/I_N	J_0	W
[kW]				[min^{-1}]	[Nm]	[A]		100%	75%	50%				[kg m^2]	[kg]
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^{-1}

P_N		Motor	Poles	n_N	M_N	I_N	COS φ		η		M_S/M_N	M_{max}/M_N	I_S/I_N	J_0	W
[kW]				[min^{-1}]	[Nm]	[A]		100%	75%	50%				[kg m^2]	[kg]
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



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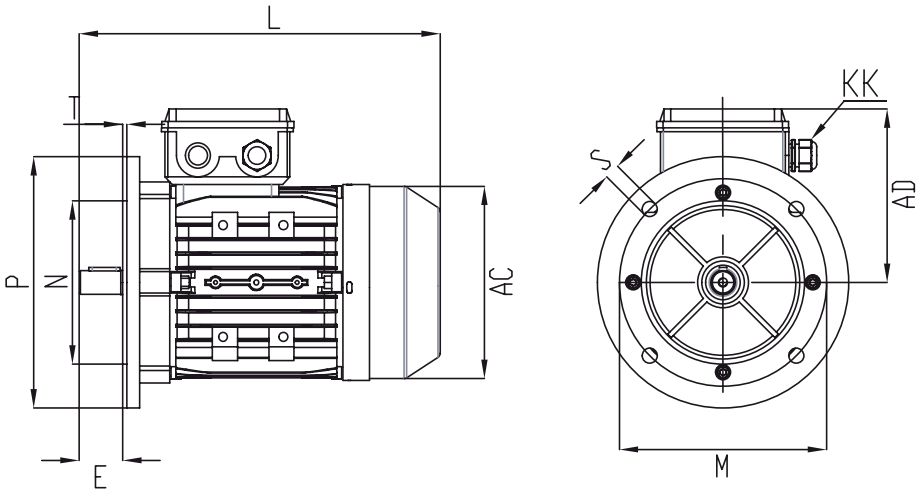
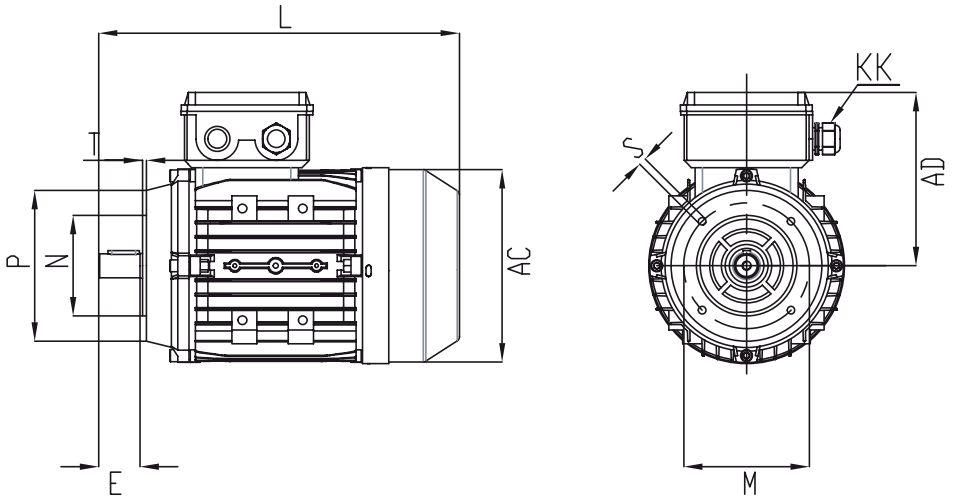


B14



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								75 m6 M20		20	67,5	12			964
280 M | 2p				419				65 m6 M20		18	58	11			975
280 M | 4,6p								75 m6 M20		20	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								80 m6 M20	170	22	71	14			1230
315 L | 2p				457				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. CI.F - IP55 - IC411
Duty S1
Aluminum casing
Running capacitor *

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

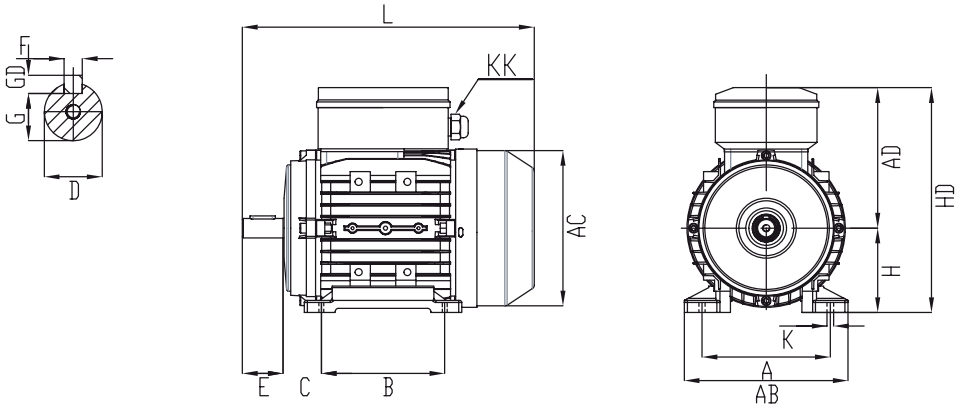
2 POLES 3000 min^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	n 100%	M_S/M_N	M_{max}/M_N	I_S/I_N	Cap [µF]	J_0 [kg m^2]	W [kg]
0,18	**CHT**	**63 A**	**2**	2600	0,7	1,40	0,98	56,9	0,8	1,7	2,4	10	0,0002	4,5
0,25	**CHT**	**63 B**	**2**	2600	0,9	1,85	0,98	60,0	0,8	1,6	2,5	12	0,0003	5,0
0,37	**CHT**	**71 A**	**2**	2650	1,3	2,6	0,98	62,7	0,8	1,7	2,6	16	0,0004	6,8
0,55	**CHT**	**71 B**	**2**	2700	1,9	3,5	0,98	65,9	0,8	1,7	2,7	20	0,0005	7,5
0,75	**CHT**	**80 A**	**2**	2700	2,7	4,9	0,98	67,8	0,8	1,8	2,6	30	0,0010	10
1,1	**CHT**	**80 B**	**2**	2700	3,9	6,8	0,98	71,6	0,7	1,7	2,8	40	0,0012	11
1,5	**CHT**	**90 S**	**2**	2800	5,1	8,7	0,99	75,4	0,7	1,9	3,6	60	0,0019	15
2,2	**CHT**	**90 L**	**2**	2800	7,5	13,1	0,99	77,1	0,7	2,0	3,7	80	0,0026	18
3	**CHT**	**100 LA**	**2**	2850	10,1	17,6	0,99	77,9	0,5	2,1	4,8	80	0,0055	25

4 POLES 1500 min^{-1}

P_N [kW]		Motor	Poles	n_N [min^{-1}]	M_N [Nm]	I_N [A]	COS φ	n 100%	M_S/M_N	M_{max}/M_N	I_S/I_N	Cap [µF]	J_0 [kg m^2]	W [kg]
0,12	**CHT**	**63 A**	**4**	1300	0,9	1,1	0,98	51,8	0,8	2,4	1,8	8	0,0003	4,4
0,18	**CHT**	**63 B**	**4**	1300	1,3	1,6	0,98	55,0	0,8	2,4	1,8	10	0,0004	4,8
0,25	**CHT**	**71 A**	**4**	1320	1,8	2,0	0,98	56,6	0,8	2,0	2,1	16	0,0008	6,2
0,37	**CHT**	**71 B**	**4**	1320	2,7	3,0	0,98	58,9	0,8	2,0	2,1	20	0,0010	6,7
0,55	**CHT**	**80 A**	**4**	1350	3,9	3,7	0,98	64,2	0,7	1,8	2,7	25	0,0017	11
0,75	**CHT**	**80 B**	**4**	1350	5,3	5,1	0,99	65,1	0,7	1,7	2,7	35	0,0022	12
1,1	**CHT**	**90 S**	**4**	1350	7,8	7,0	0,99	68,5	0,6	1,7	2,7	50	0,0031	15
1,5	**CHT**	**90 L**	**4**	1350	10,6	9,2	0,99	71,3	0,6	1,7	2,9	65	0,0045	18
2,2	**CHT**	**100 LA**	**4**	1400	15,0	13,0	0,99	75,1	0,5	2,0	4,1	80	0,010	26

B3



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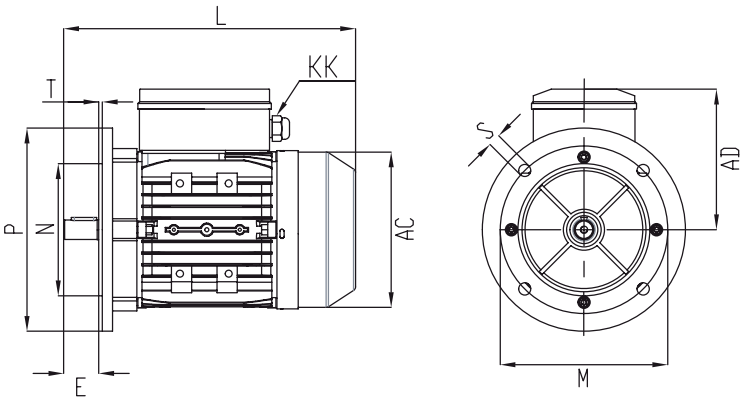

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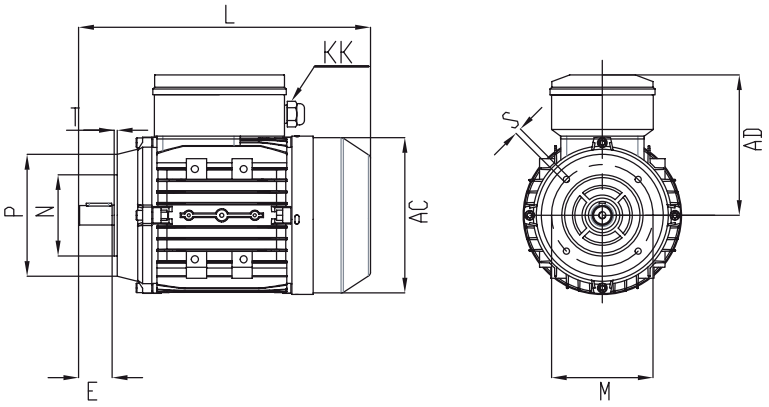
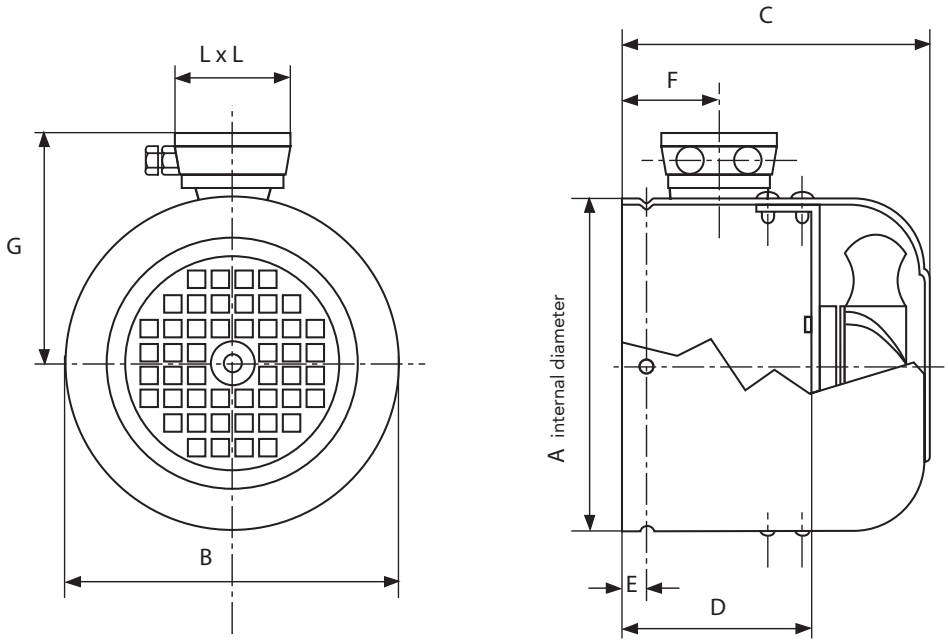


Size	Bearings		CableGlands	Terminals	IM B5					IM B14				
	DE	NDE	KK	n. x...	M	N	P	n x S	T	M	N	P	n x S	T
63	6201 2RZ	6201 2RZ	M16x1.5	6xM4	115	95 j6	140	4x10	3	75	60 j6	90	4xM5	2,5
71	6202 2RZ	6202 2RZ	M20x1.5	6xM4	130	110 j6	160	4x10	3,5	85	70 j6	105	4xM6	2,5
80	6204 2RZ	6204 2RZ	M20x1.5	6xM4	165	130 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



Single-phase dimensions with IP55 terminal box

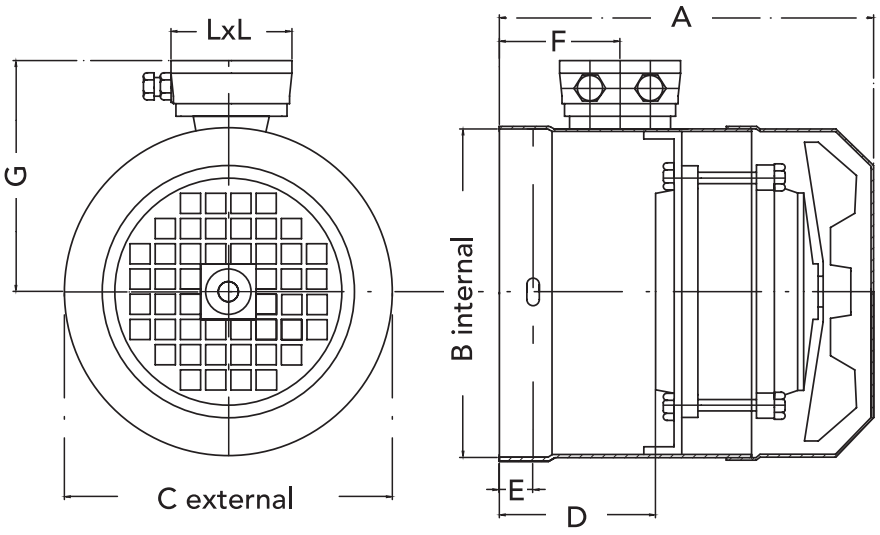
SIZE	VOLTAGE	HZ	NOM. SPEED MIN/1	ASSORB. WATT	CURRENT M.A.	AIR FLOW M 3/H
63	230	50 / 60	2750	15 / 14	120 / 100	180
71	230	50 / 60	2750	15 / 14	120 / 100	180
80	230	50 / 60	2750	15 / 14	120 / 100	180
90	230	50 / 60	2900	42 / 36	190 / 180	340
100	230	50 / 60	2900	42 / 36	190 / 180	340
112	230	50 / 60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

Three-phase 400V and 230/400V IP65

With/without (C/S) terminal box

From g 63 to g 132



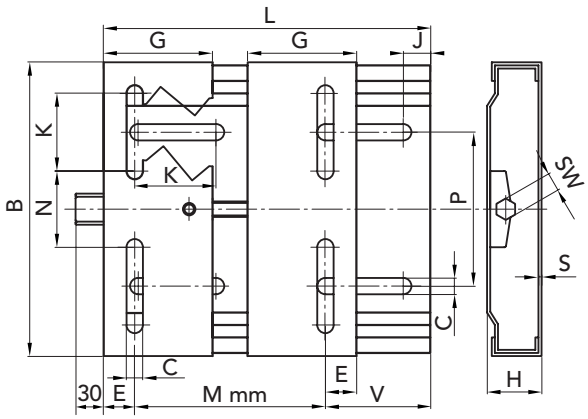
SIZE	VOLT	VOLT	Hz	RPM	POWER WATT	ASSORB. (400 V) A	ASSORB. (230/400 V) A	AIR m³/h
63	400	230/400	50/60	2900	104	0.26	0.45/0.26	250
71	400	230/400	50/60	2900	104	0.26	0.45/0.26	250
80	400	230/400	50/60	2900	104	0.26	0.45/0.26	300
90	400	230/400	50/60	2900	104	0.26	0.45/0.26	350
100	400	230/400	50/60	2900	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

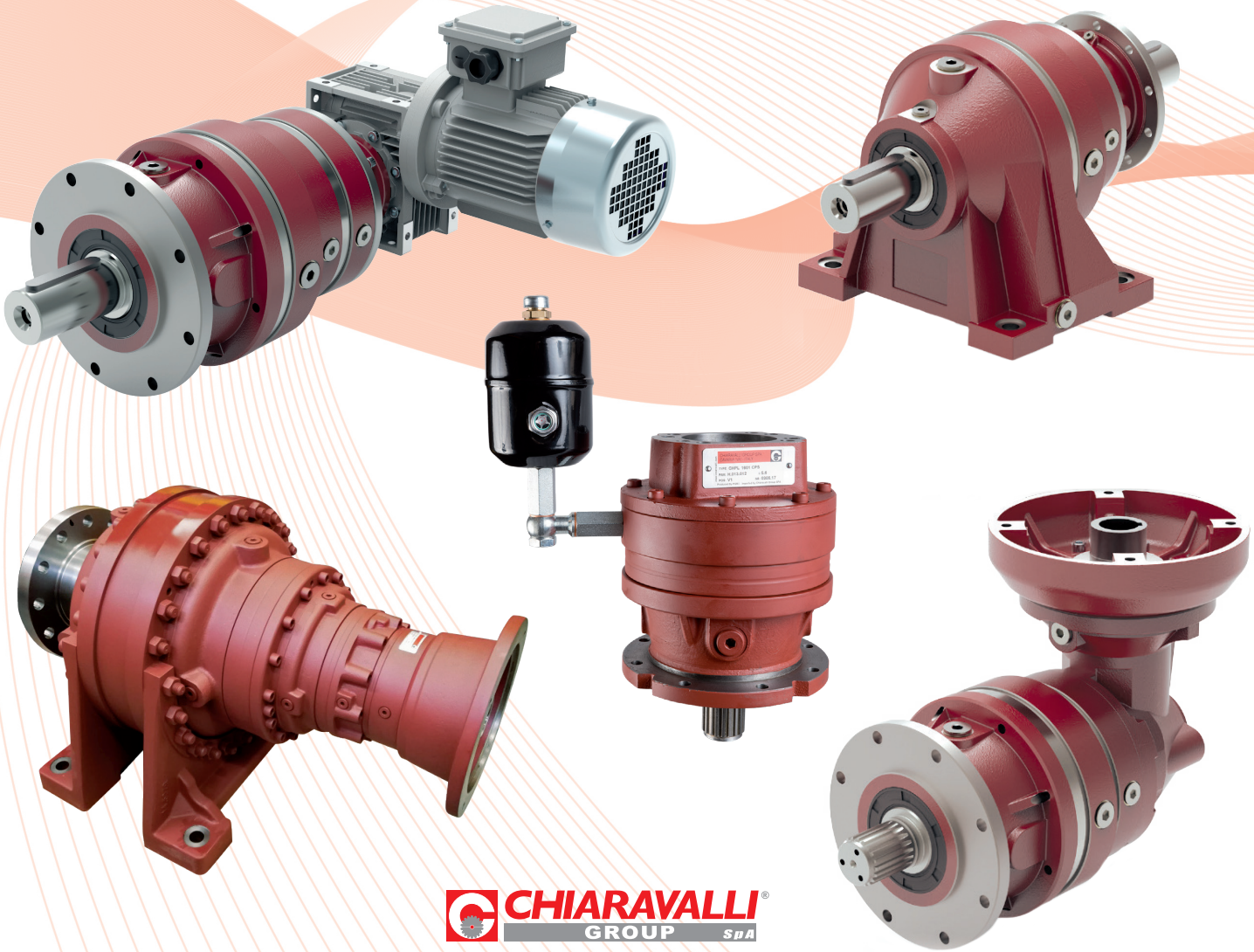
Quantities, prices and availability by B2B Chiaravalli

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.



CHIARAVALLI GROUP SpA

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 ± 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.

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V. 01.21

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