

**CHB WORM GEARED MOTORS
AND WORM GEAR UNITS**

**ACCESSORIES FOR GEAR BOXES
AND ELECTRIC MOTORS**



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INTRODUCTION

The new CHB worm gearboxes of Chiaravalli Trasmissioni SPA 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 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 CHTPC 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 and the maintenance is 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

QUANTITY OF OIL IN LITRES

CHB	03	04	05	06	07	08
	0.035	0.055	0.090	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 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.

PAM	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

FEET ROTATION

Gears with feet can be rotated into the N and V positions by simply unscrewing the fixing screws. We recommend that some sealant is applied to the 4 screws close to the worm screw, as the holes are through holes.

CHB 03-04-05 GEARED MOTORS AND WORM GEAR UNITS

CHB...

CHB...P

CHBE...P

CHBE...

CHBR...

CHBR...P

CHBRE...

CHBRE...P

DESIGNATION CHB..P 03-04-05

TYPE (1)	SIZE	VERSION	FLANGE POS. (2)	i	MMF	MOUNT. POS.
CHB	03	PF	1	Ratio see page 5	63B5	UNIVERSALE
CHB..P		N	2		63B14	
CHBR		V			56B5	
CHBR..P					56B14	
CHBE						
CHBE..P						
CHBRE						
CHBRE..P						

TYPE (1)	SIZE	VERSION	FLANGE POS. (2)	i	MMF	MOUNT. POS.
CHB	04	PF	1	Ratio see page 6	71B5	UNIVERSALE
CHB..P		PFA	2		71B14	
CHBR		N			63B5	
CHBR..P		V			63B14	
CHBE						
CHBE..P						
CHBRE						
CHBRE..P						

TYPE (1)	SIZE	VERSION	FLANGE POS. (2)	i	MMF	MOUNT. POS.
CHB	05	PF	1	Ratio see page 7	80B5	UNIVERSALE
CHB..P		PFA	2		80B14	
CHBR		N			71B5	
CHBR..P		V			71B14	
CHBE					63B5	
CHBE..P					63B14	
CHBRE						
CHBRE..P						

EXAMPLE ORDER

CHB	04P	FA	2	35	63 B14
CHB	04			10	71 B5

If the motor is also required, please specify:

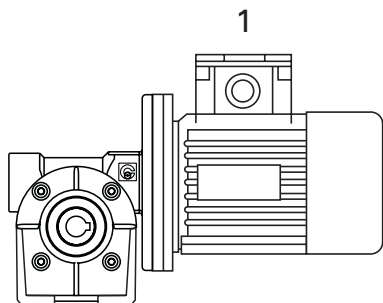
Size	es. 63 C4
Power	es. Kw 0.22
Poles	es. 4
Voltage	es. V230/400
Frequency	es. 50 Hz
Flange	es. B14

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

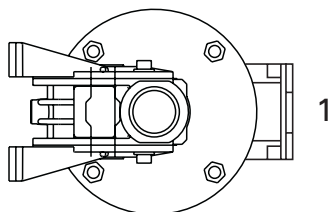
1) see page 2
2) see page 4

CHB 03-04-05 MOUNTING POSITION

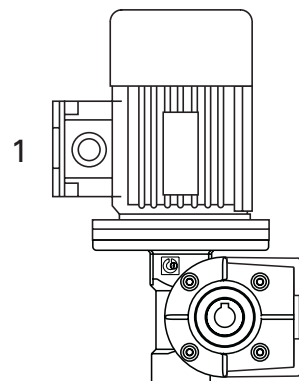
B3



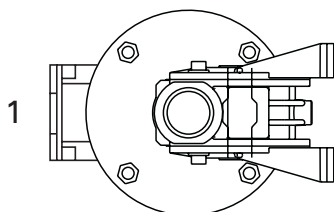
B6



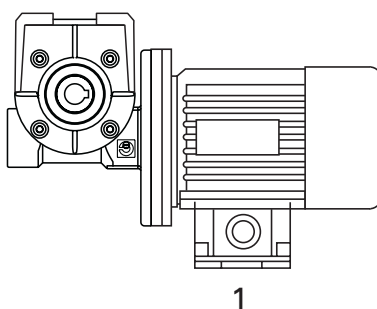
V5



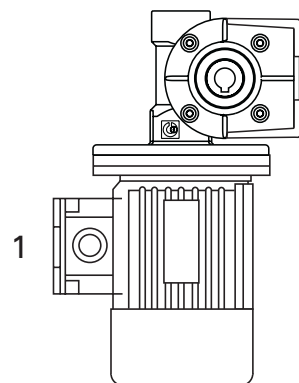
B7



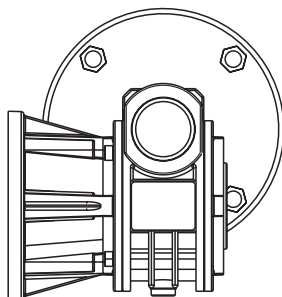
B8



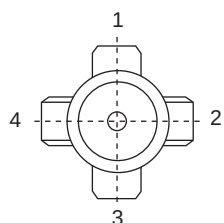
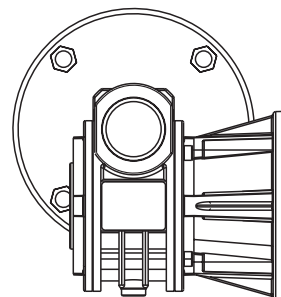
V6



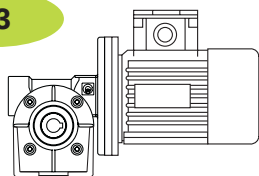
PF1



PF2



B3



POSITION OF TERMINAL BOX

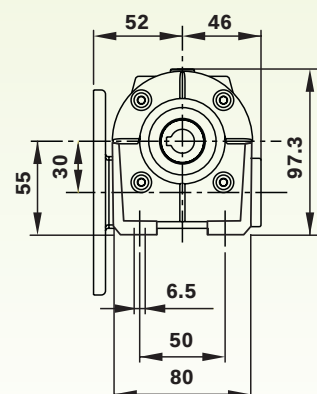
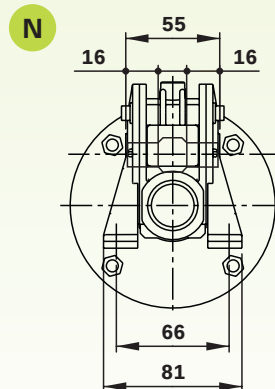
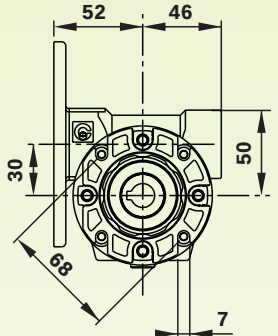
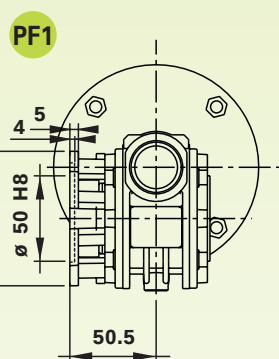
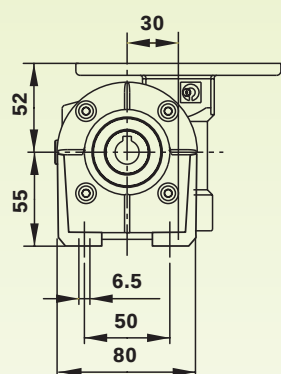
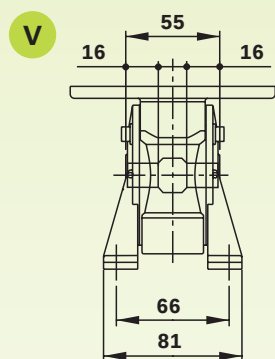
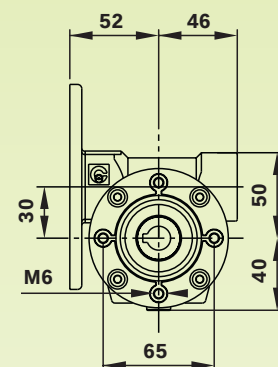
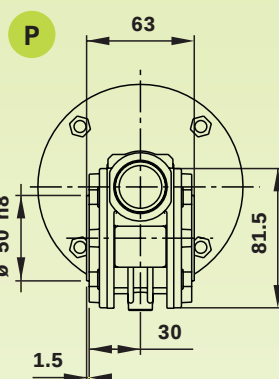
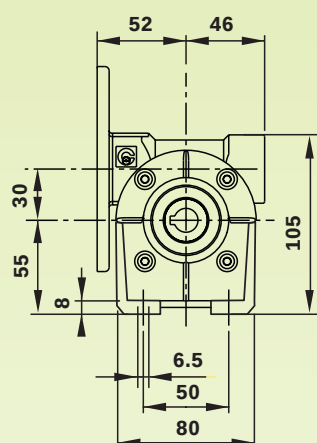
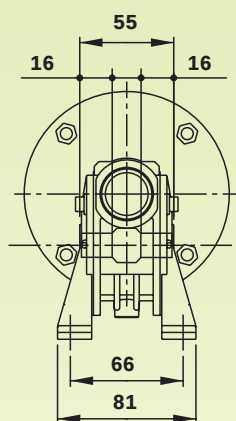
N.B. The position of the terminal box always refers to the B3 position.

CHB 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	
CHB 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

CHB 03 DIMENSIONS



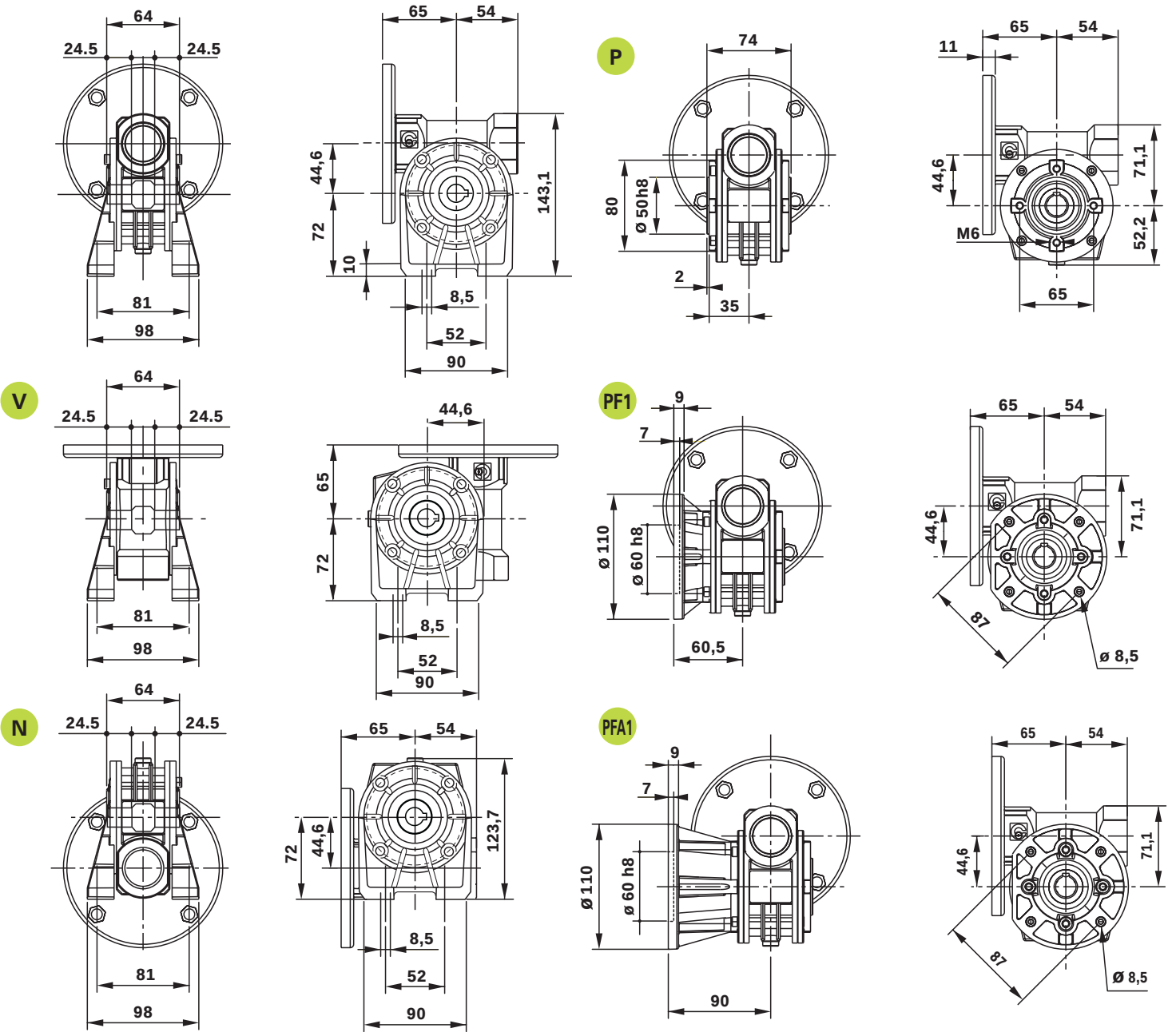
CHB 04 PERFORMANCE WITH 4-POLE MOTORS – 1400 REVS. INPUT

TIPO	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CHB 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	44	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

CHB 04 DIMENSIONS



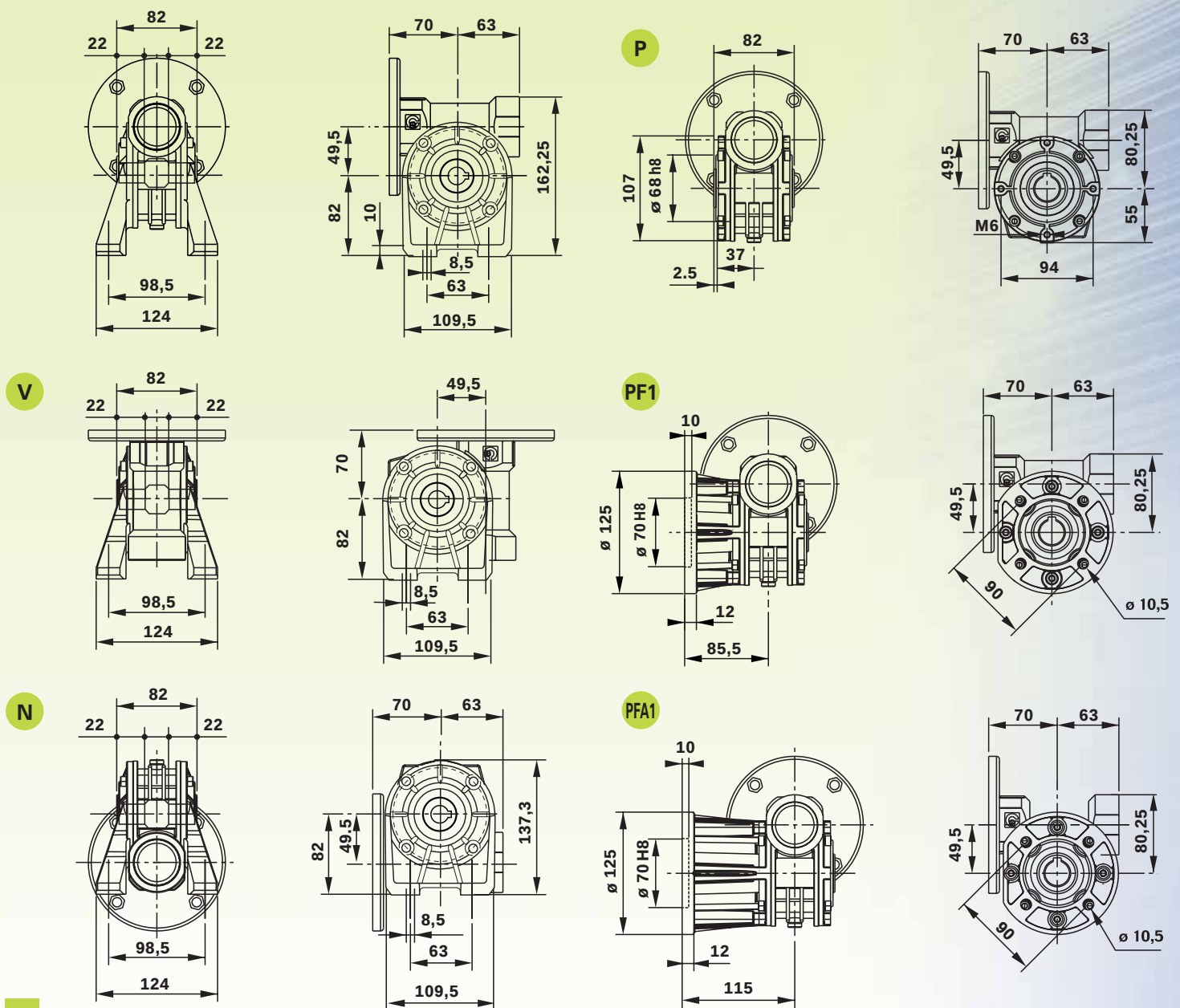
CHB 05 PERFORMANCE WITH 4-POLE MOTORS – 1400 REVS. INPUT

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CHB 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	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

CHB 05 DIMENSIONS





CHB 06/07/08 GEARED MOTORS AND WORM GEAR UNITS



CHB ..



CHBE ..



CHBR ..



CHBRE ..

DESIGNATION CHB 06 - 07 - 08

TYPE (1)	SIZE	VERSION	FLANGE POS. (2)	i	MMF	MOUNT. POS.
CHB	06	FC	1	Ratio see page 12-13-14	100B5	UNIVERSALE
CHBR	07	F	2		100B14	
CHBE	08	(3)			90B5	
CHBRE					90B14	
					80B5	
					80B14	
					71B5	
					71B14	

EXAMPLE ORDER

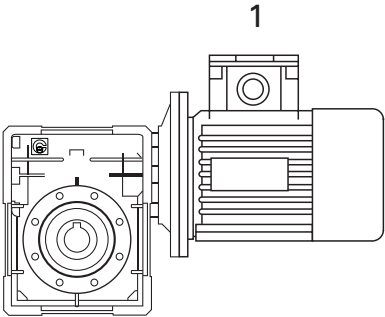
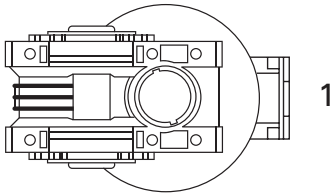
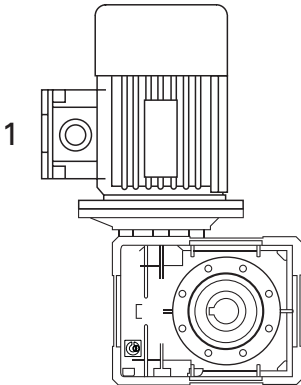
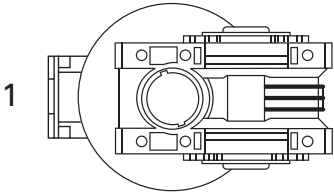
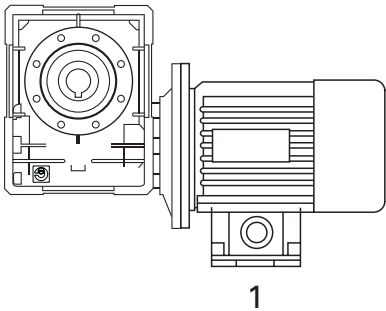
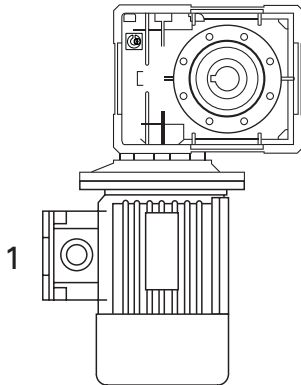
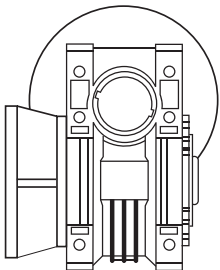
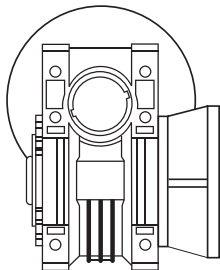
CHB	06	FC	1	19	90 B5
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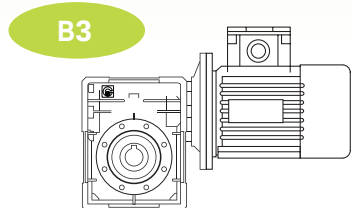
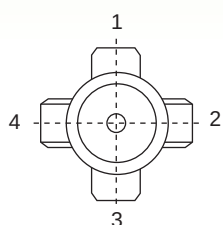
If the motor is also required, please specify:

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 9
 2) see page 11
 3) lack of instructions indicates that the gear is not equipped with an output flange

MOUNTING POSITION

B3 	B6 	V5 
B7 	B8 	V6 
F1 		F2 



POSITION OF TERMINAL BOX

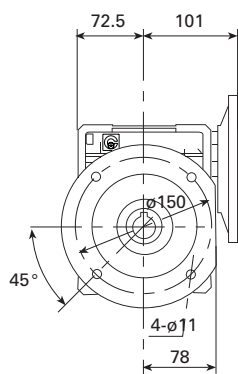
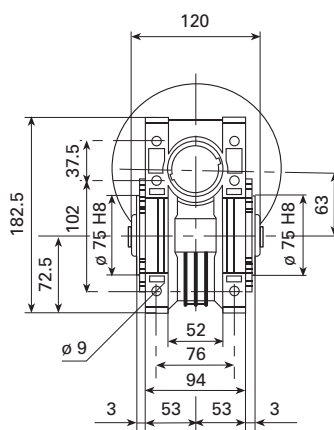
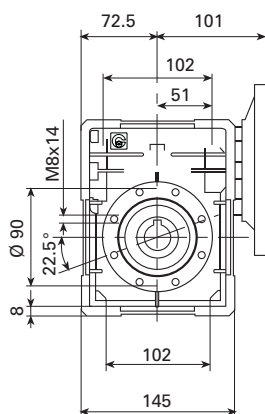
N.B. The position of the terminal box always refers to the B3 position.

CHB 06 PERFORMANCE WITH 4-POLE MOTORS – 1400 REVS. INPUT

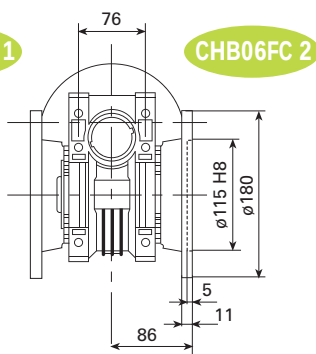
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CHB 06	7	200	1.85	75	1.5	90/80	B5/B14
	10	140	1.85	105	1.3	90/80	B5/B14
	12	117	1.85	129	1.1	90/80	B5/B14
	15	93	1.85	146	1.0	90/80	B5/B14
	19	74	1.50	150	1.0	90/80	B5/B14
	24	58	1.10	138	1.1	90/80	B5/B14
	30	47	1.10	155	1.0	90/80	B5/B14
	38	37	0.75	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

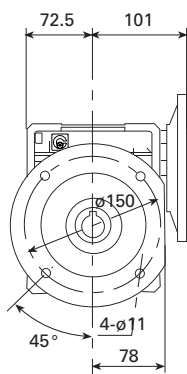
CHB 06 DIMENSIONS



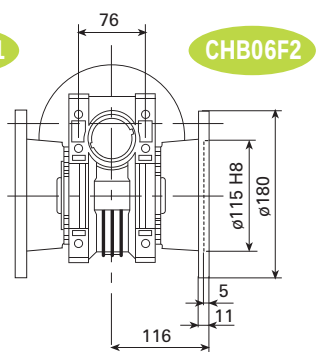
CHB06FC 1



CHB06FC 2



CHB06F1



CHB06F2

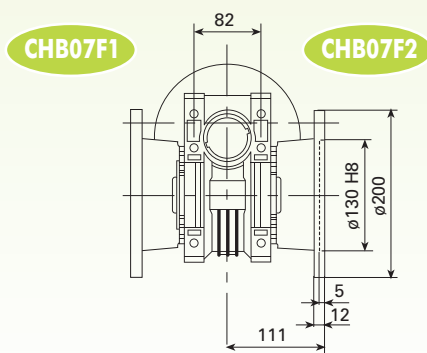
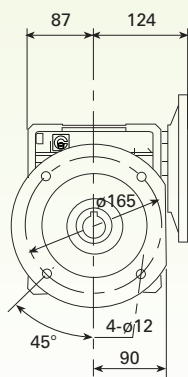
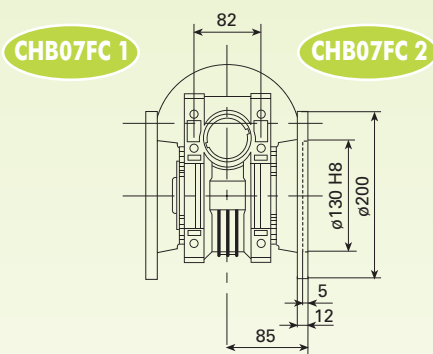
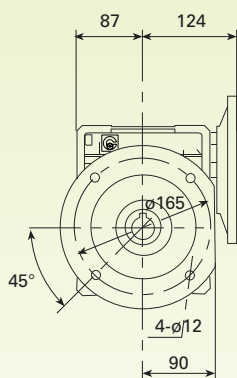
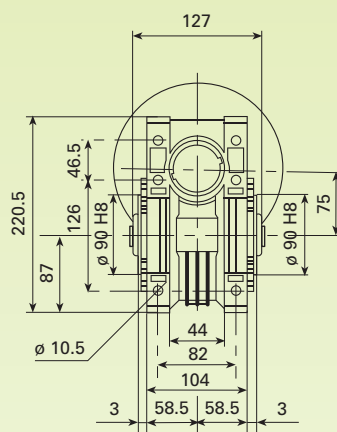
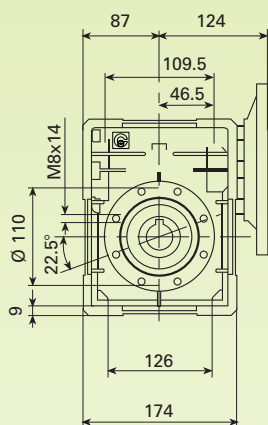
CHB 07 PERFORMANCE WITH 4-POLE MOTORS – 1400 REVS. INPUT

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CHB 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 only B5

Weight Kg 9,2

CHB 07 DIMENSIONS

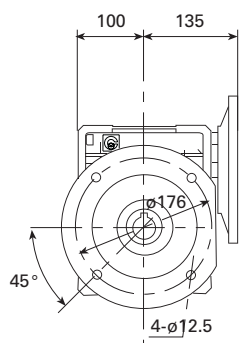
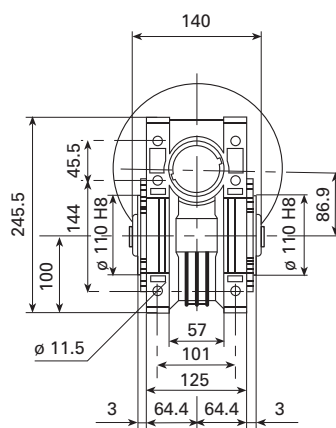
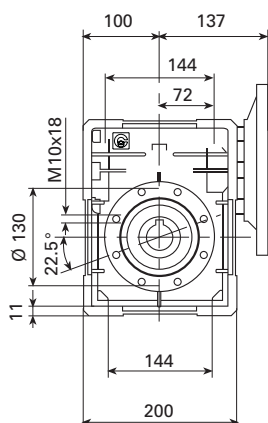


CHB 08 PERFORMANCE WITH 4-POLE MOTORS – 1400 REVS. INPUT

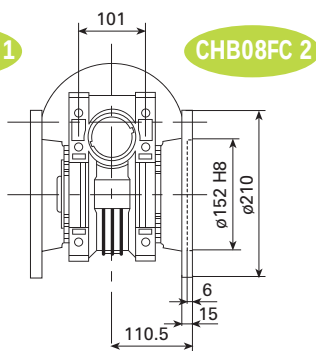
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2	f.s.	Possible types of motor connections	
CHB 08	7	200	4	170	1.5	112/100/90	B5/B14
	10	140	4	240	1.2	112/100/90	B5/B14
	15	93	4	350	0.9	112/100/90	B5/B14
	20	70	3.00	340	0.9	100/90	B5/B14
	23	61	2.20	280	1.1	100/90	B5/B14
	30	47	2.20	340	1.1	100/90	B5/B14
	40	35	1.85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

Weight Kg 12,2

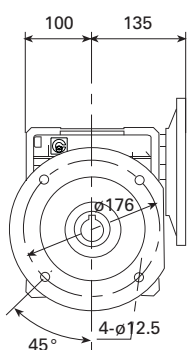
CHB 08 DIMENSIONS



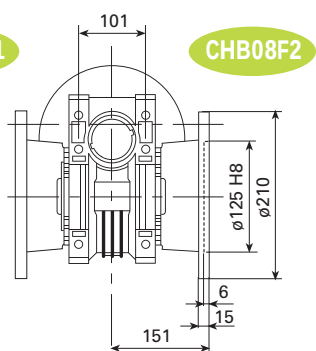
CHB08FC 1



CHB08FC 2



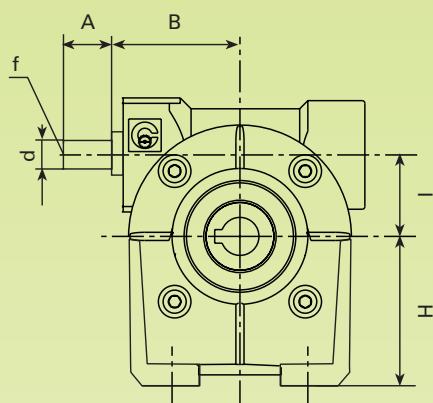
CHB08F1



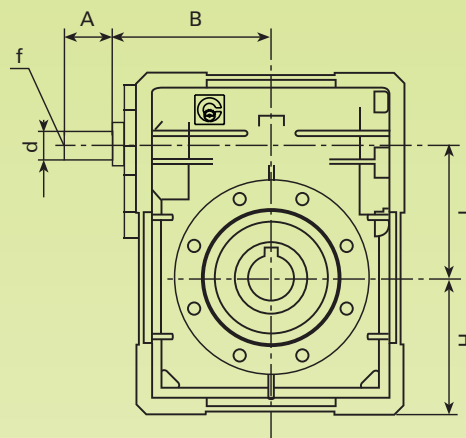
CHB08F2

CHBR – CHBRE – DIMENSIONS

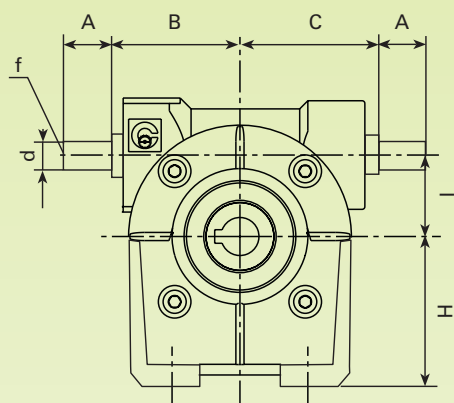
CHBR 03 - 04 - 05



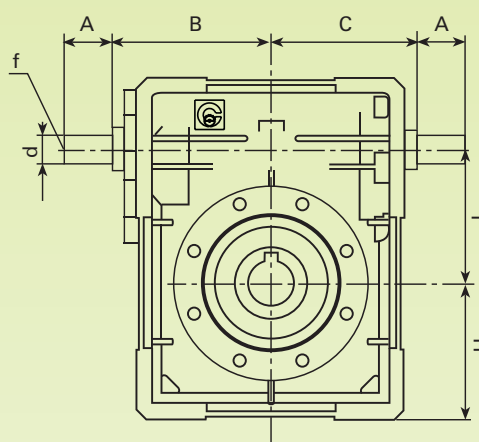
CHBR 06 - 07 - 08



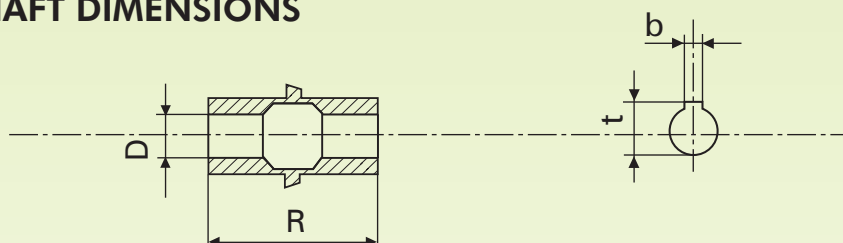
CHBRE 03 - 04 - 05



CHBRE 06 - 07 - 08

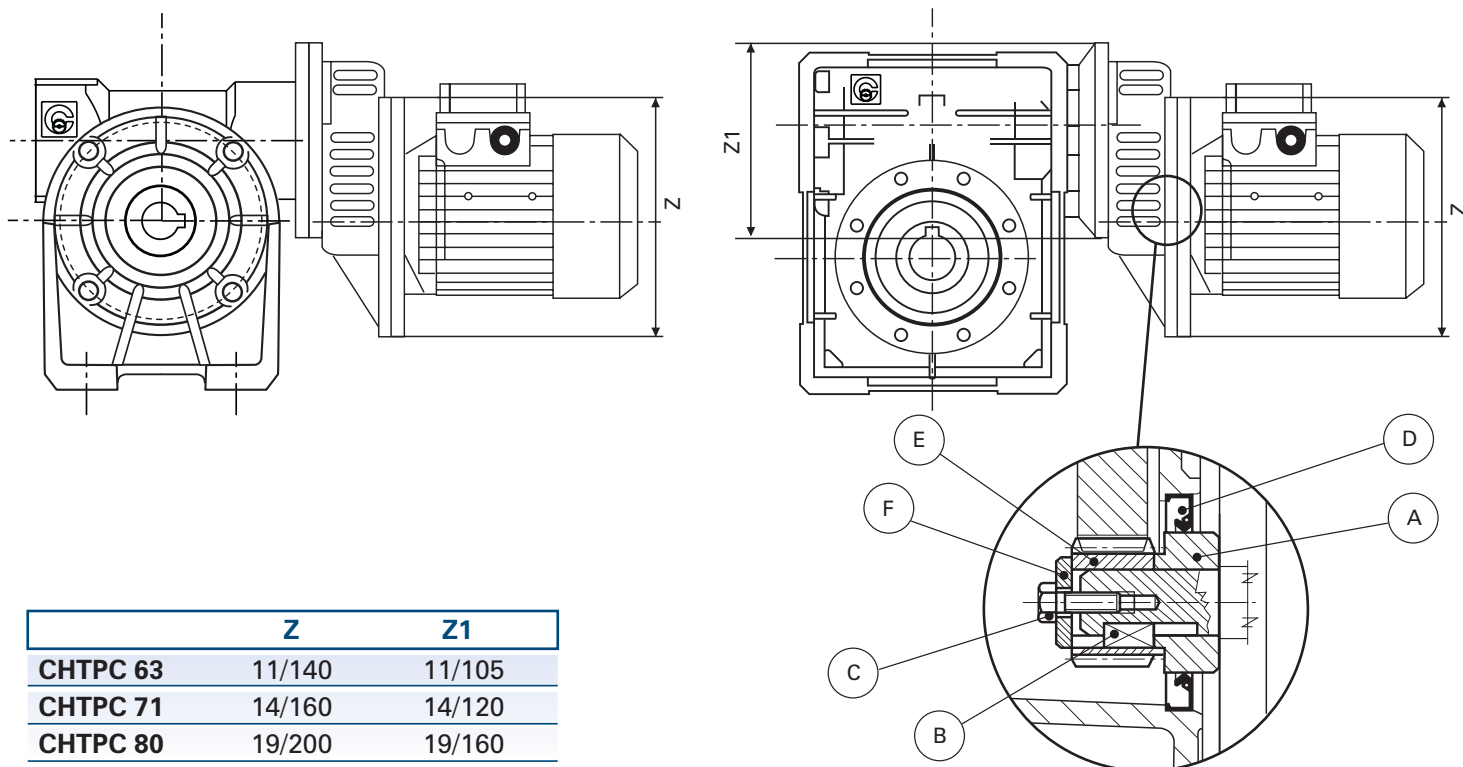


OUTPUT SHAFT DIMENSIONS



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

CHTPC WORM GEAR WITH PRE-STAGE MODULE



	Z	Z1
CHTPC 63	11/140	11/105
CHTPC 71	14/160	14/120
CHTPC 80	19/200	19/160

PINION ASSEMBLY INSTRUCTIONS

- 1) Assemble the spacer A (if necessary heat between 80° and 100° C) onto the driving shaft and block it with Loctite 638 for coaxial blockings
- 2) Insert the key B included in the kit
- 3) Assemble the pinion E (if necessary heat between 80° and 100° C) onto the driving shaft
- 4) Fix the washer F using the screw C
- 5) Assemble the oil seal D in the direction shown in the drawing
- 6) Insert the motor with the pinion, taking care not to damage the oil seal

Note: CHTPC pre-stage modul doesn't allow radial loads.

DESIGNATION CHTPC / CHB - CHB..P			CHTPC / CHBE - CHB..P
TYPE	SIZE	i =	MMF
CHTPC	63	3	63B5
	71	3	71B5
	80	3	80B5

EXAMPLE ORDER

CHTPC	71	CHB 05	i= 108(3x36) P.A.M. 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

CHTPC / CHB PERFORMANCE WITH 4-POLE MOTORS – 1400 REVS. INPUT

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHTPC63	105	13.3	0.12	42
CHB 04	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
CHTPC71	84	16.7	0.25	80
CHB 05	108	12.9	0.25	90
	135	10.4	0.25	90

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHTPC71	120	11.7	0.55	280
CHB 07	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
CHTPC71	168	8.3	0.55	350
CHB 08	192	7.3	0.37	280
	240	5.8	0.37	290
	300	4.7	0.37	275

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHTPC63	108	12.9	0.18	72
CHB 05	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

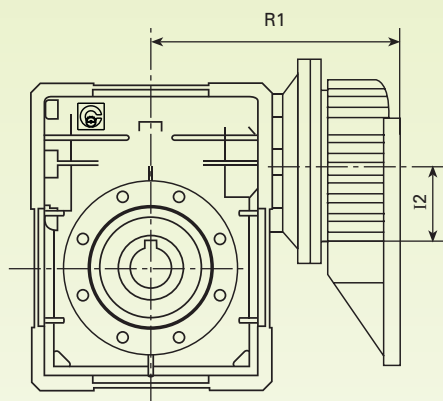
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHTPC71	114	12.3	0.37	170
CHB 06	135	10.4	0.37	176
	192	7.3	0.25	149
	240	5.8	0.25	130
	300	4.7	0.25	120

TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHTPC80	90	15.6	0.75	310
CHB 07	120	11.7	0.75	300
	150	9.3	0.55	260

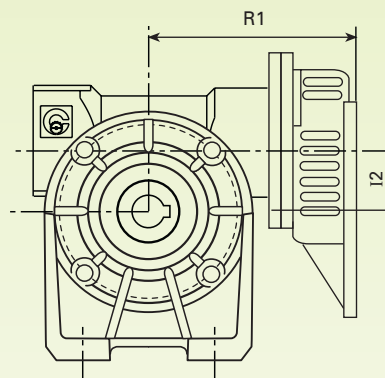
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHTPC80	120	11.7	0.75	390
CHB 08	138	10.1	0.75	360
	168	8.3	0.55	350
	192	7.3	0.55	330
	240	5.8	0.55	305

DIMENSIONS CHTPC/CHB

CHTPC.. / CHB 06-07-08



CHTPC.. / CHB 04 - 05



For other dimensions see pages 6 - 7 - 12 - 13 and 14 of the catalogue.

CHTPC - CHB	R1	I2
63 + 04	113	40
63 + 05	118	40
71 + 05	127	50
71 + 06	158	50
71 + 07	181	50
80 + 07	197	63
71 + 08	192	50
80 + 08	208	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.

CHB/CHB COMBINED WORM GEARS

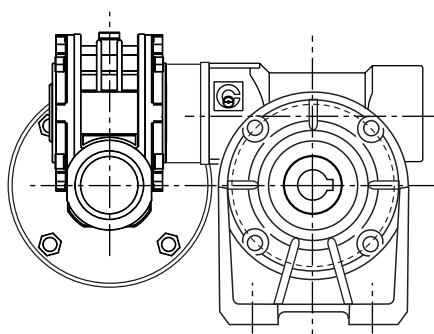
DESIGNATION CHB(R)/CHB – CHB(R)/CHB..P

TYPE	SIZE	VERSION	FLANGE POS. (1)	i	EXEC.	MMF
CHB/CHB	03/04	F	1	Ratio see page 20	OAD	63B5
CHB/CHB..P	03/05	FA	2		OAS	63B14
CHBR/CHB		(2)			OBD	56B5
CHBR/CHB..P					OBS	56B14
					VAD	
					VAS	
					VBD	
					VBS	

TYPE	SIZE	VERSION	FLANGE POS. (1)	i	EXEC.	MMF
CHB/CHB	03/06	FC	1	Ratio see page 20	OAD	71B5
CHB/CHB..P	04/07	F	2		OAS	71B14
CHBR/CHB	04/08	(3)			OBD	63B5
CHBR/CHB..P					OBS	63B14
					VAD	56B5
					VAS	56B14
					VBD	
					VBS	

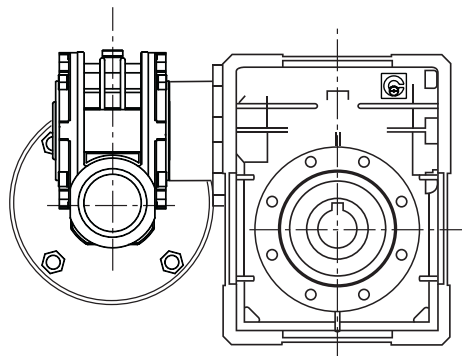
DIMENSIONS OF CHB/CHB COMBINED GEARS

CHB 03 / CHB 04 - 05



CHB 03 / CHB 06

CHB 04 / CHB 07-08



For the executions see the table with drawings on page 19, if not specified OBS would be supplied.

ESEMPIO ORDINE

CHB / CHB	03/05P	FA	2	315	OBS	56B14
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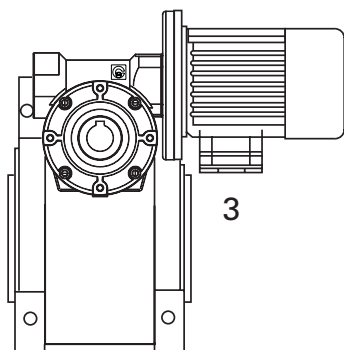
If the motor is also required, please specify:

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

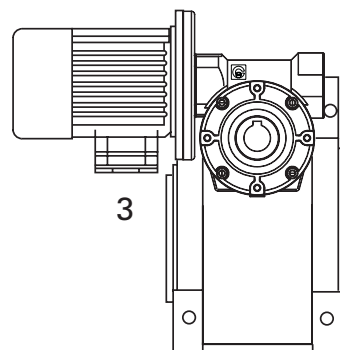
1. see page 4 and 11
2. lack of instructions indicates that the gear is not equipped with an output flange. In this case the group can be fixed on feet CHB/CHB or be swinging CHB/CHB..P
3. lack of instructions indicates that the gear is not equipped with an output flange.

EXECUTION

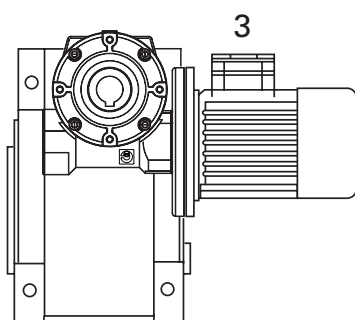
OAD



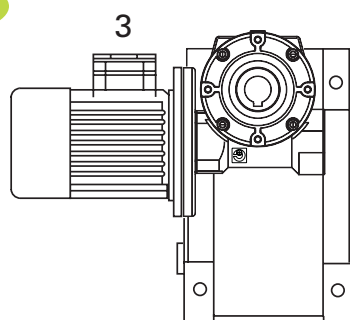
OAS



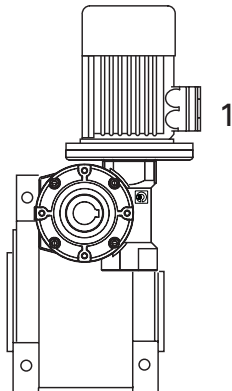
OBD



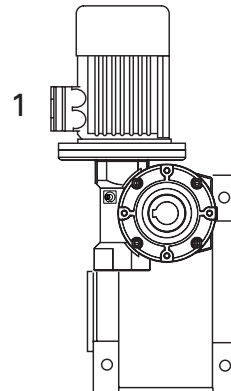
OBS



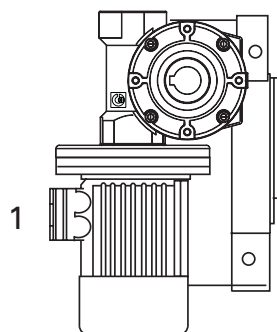
VAD



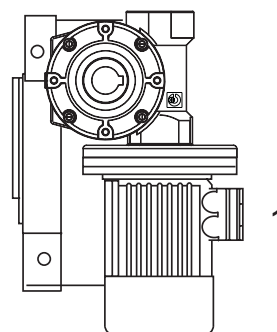
VAS



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.

CHB / CHB PERFORMANCE WITH 4-POLE MOTORS – 1400 REVS. INPUT

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

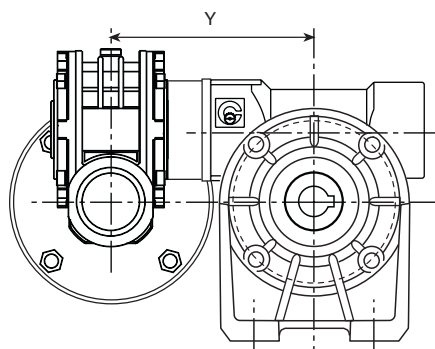
TYPE	i=ratio	n2 r/min	Kw=P1	Nm=T2
CHB 04/07	250	5.6	0.37	360
	300	4.7	0.37	360
	400	3.5	0.25	315
	525	2.7	0.25	360
	700	2.0	0.18	360
	920	1.5	0.18	360
	1200	1.2	0.12	360
	1500	0.93	0.12*	360
	2100	0.67	0.12*	360
	2800	0.5	0.12*	360

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

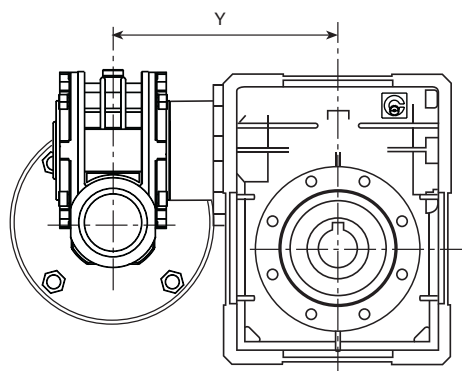
DIMENSIONS OF CHB/CHB COMBINED GEARS

CHB 03 / CHB 04 - 05



CHB 03 / CHB 06

CHB 04 / CHB 07-08



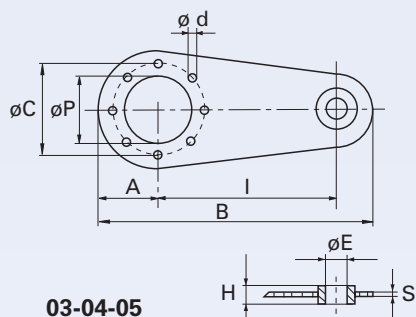
	Y
CHB 03 / 04	120.5
CHB 03 / 05	125.5
CHB 03 / 06	165
CHB 04 / 07	192
CHB 04 / 08	204.5

For other dimensions see pages 5 - 6 - 7 - 12 - 13 and 14 of the catalogue.

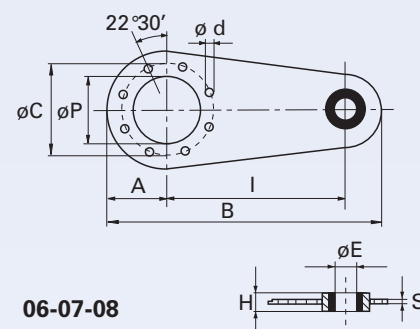
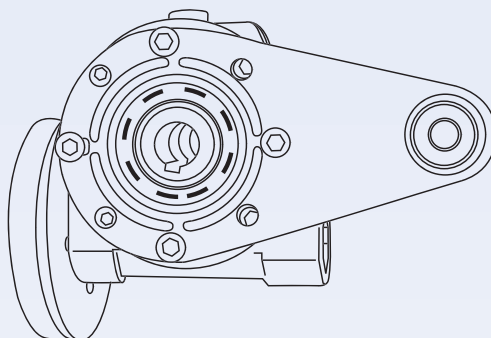
The gear ratios are those most frequently requested. It is possible to obtain multiple combinations using the various ratios of the two single gears.

TORQUE ARM

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



03-04-05



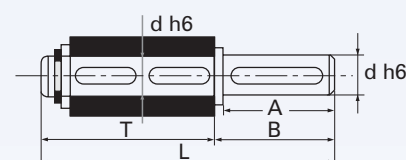
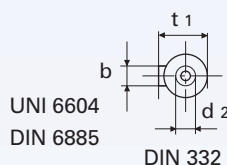
06-07-08

* Without anti vibration bush

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

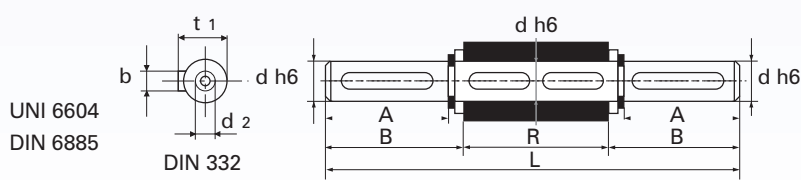
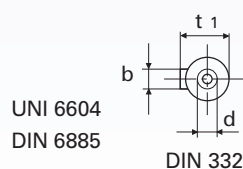
SINGLE OUTPUT SHAFT KIT

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



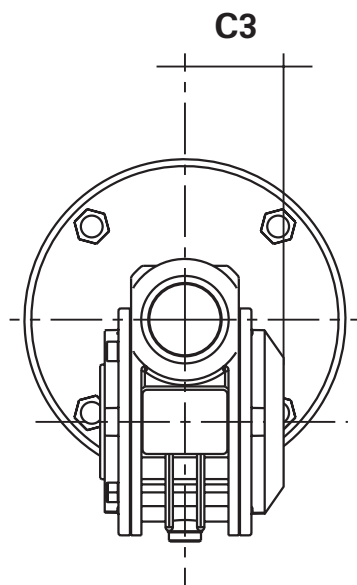
DOUBLE OUTPUT SHAFT KIT

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

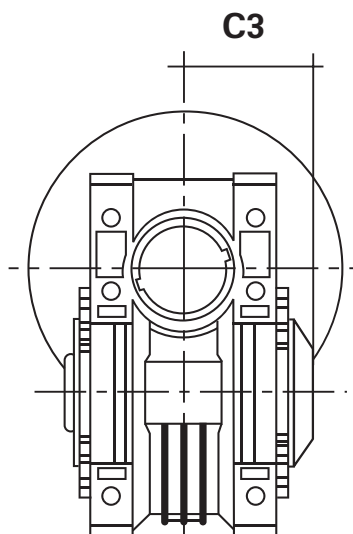


COVER

CHB 03 - 04 - 05



CHB 06 - 07 - 08



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

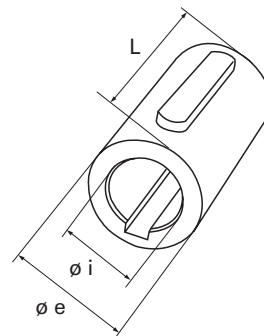
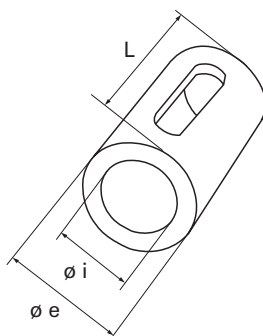
REDUCTION BUSHINGS KIT

SINGLE				
TYPE	$\phi i / \phi e$	L	tongues	Weight per 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	$\phi i / \phi e$	L	tongues	Weight per 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

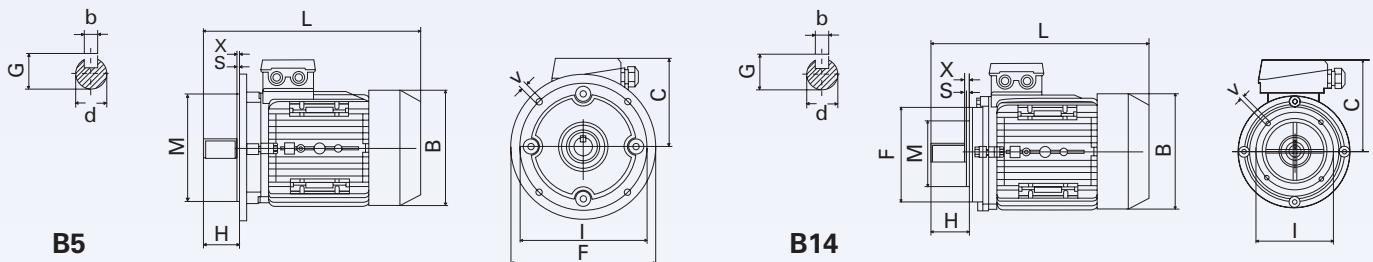


THREE-PHASE ELECTRIC MOTORS

TECHNICAL DATA FOR 4-POLE MOTORS

(1400 RPM)

TYPE	POWER kW	VOLTAGE V	CURRENT 400 V	TORQUE N/m	EFFICIENCY %	FACTOR COS. Ø	WEIGHT Kg.
CHT 56 B4	0.09	230/400	0.43	0.64	50	0.61	3.2
CHT 63 A4	0.12	230/400	0.47	0.86	57	0.64	3.9
CHT 63 B4	0.18	230/400	0.70	1.27	57	0.65	4.5
CHT 63 C4	0.22	230/400	0.92	1.77	59	0.67	4.8
CHT 71 A4	0.25	230/400	0.84	1.77	60	0.72	5.6
CHT 71 B4	0.37	230/400	1.12	2.58	65	0.74	6.2
CHT 71 C4	0.55	230/400	1.61	3.81	66	0.75	7.0
CHT 80 A4	0.55	230/400	1.59	3.81	67	0.75	8.9
CHT 80 B4	0.75	230/400	1.94	5.20	72	0.78	10.0
CHT 80 D4	1.10	230/400	2.67	7.60	76.2	0.78	11.0
CHT 90 S4	1.10	230/400	2.64	7.50	76.2	0.79	12.1
CHT 90 L4	1.50	230/400	3.46	10.20	78.5	0.80	14.3
CHT 90 LL4	1.85	230/400	4.30	9.24	79	0.78	16.0
CHT 100 L A4	2.20	230/400	4.86	14.80	79.6	0.80	21.0
CHT 100 L B4	3.00	230/400	6.50	20.20	80.5	0.81	24.7
CHT 112 M4	4.00	230/400	8.26	26.70	83.6	0.84	30.1
CHT 132 S4	5.50	230/400	11.00	36.22	87	0.85	44.0
CHT 132 M4	7.50	230/400	14.64	49.40	88	0.86	52.0



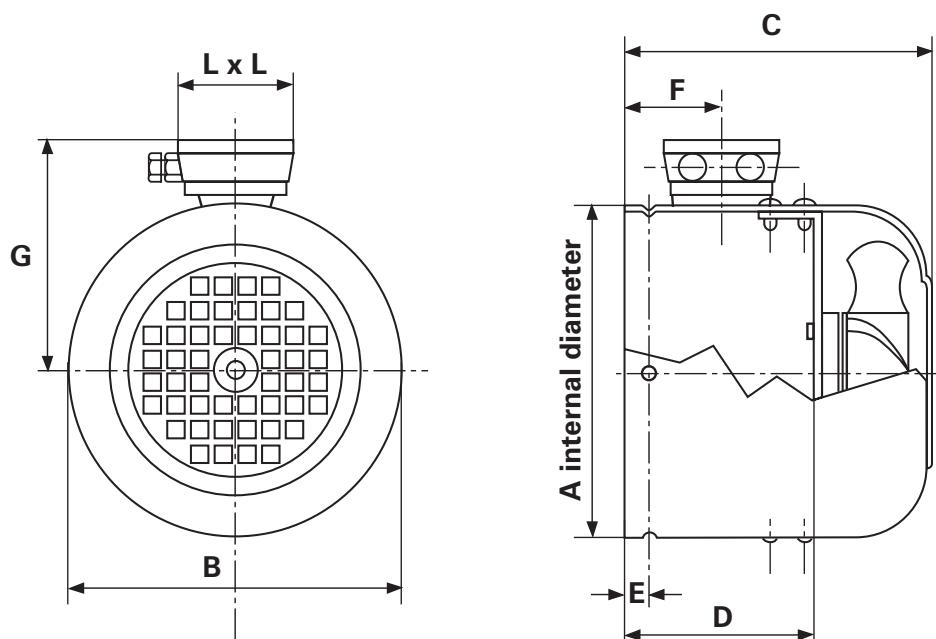
SIZES AND DIMENSIONS

Type	Mounting dimensions (mm)															Dimensions			
					B5						B14								
	d	H	b	G	I	M	F	X	V	S	I	M	F	X	V	S	B	C	L
56	9	20	3	10.2	98	80	120	0	7	3.0	65	50	80	0	M5	2.5	110	100	195
63	11	23	4	12.5	115	95	140	0	10	3.0	75	60	90	0	M5	2.5	123	110	215
71	14	30	5	16	130	110	160	0	10	3.5	85	70	105	0	M6	2.5	138	117	255
80	19	40	6	21.5	165	130	200	0	12	3.5	100	80	120	0	M6	3.0	155	137	290
90S	24	50	8	27	165	130	200	0	12	3.5	115	95	140	0	M8	3.0	176	145	310
90L/90LL	24	50	8	27	165	130	200	0	12	3.5	115	95	140	0	M8	3.0	176	145	335
100L	28	60	8	31	215	180	250	0	15	4.0	130	110	160	0	M8	3.5	197	152	386
112M	28	60	8	31	215	150	250	0	15	4.0	130	110	160	0	M8	3.5	220	180	395
132S	38	80	10	41	265	230	300	0	15	4.0	165	130	200	0	M10	4.0	257	195	436
132M	38	80	10	41	265	230	300	0	15	4.0	165	130	200	0	M10	4.0	257	195	475

- Motors with cage rotor, closed with external surface ventilation.
- Design, construction and testing in conformity with the standards IEC 2-3, international standards IEC 34-1 and the main foreign standards.
- Power-sizes in accordance with the standards IEC 72, national standards UNEL-MEC.
- Insulation class F
- Protection IP55
- S1 Continuous service

- European Directive ROHS 2002/95/CE
- Phase separators
- 2-pole and 6-pole motors available
- Kit of feet available
- Forced ventilation kit available for single-phase and three-phase models

FORCED VENTILATION KIT * SINGLE-PHASE MODELS



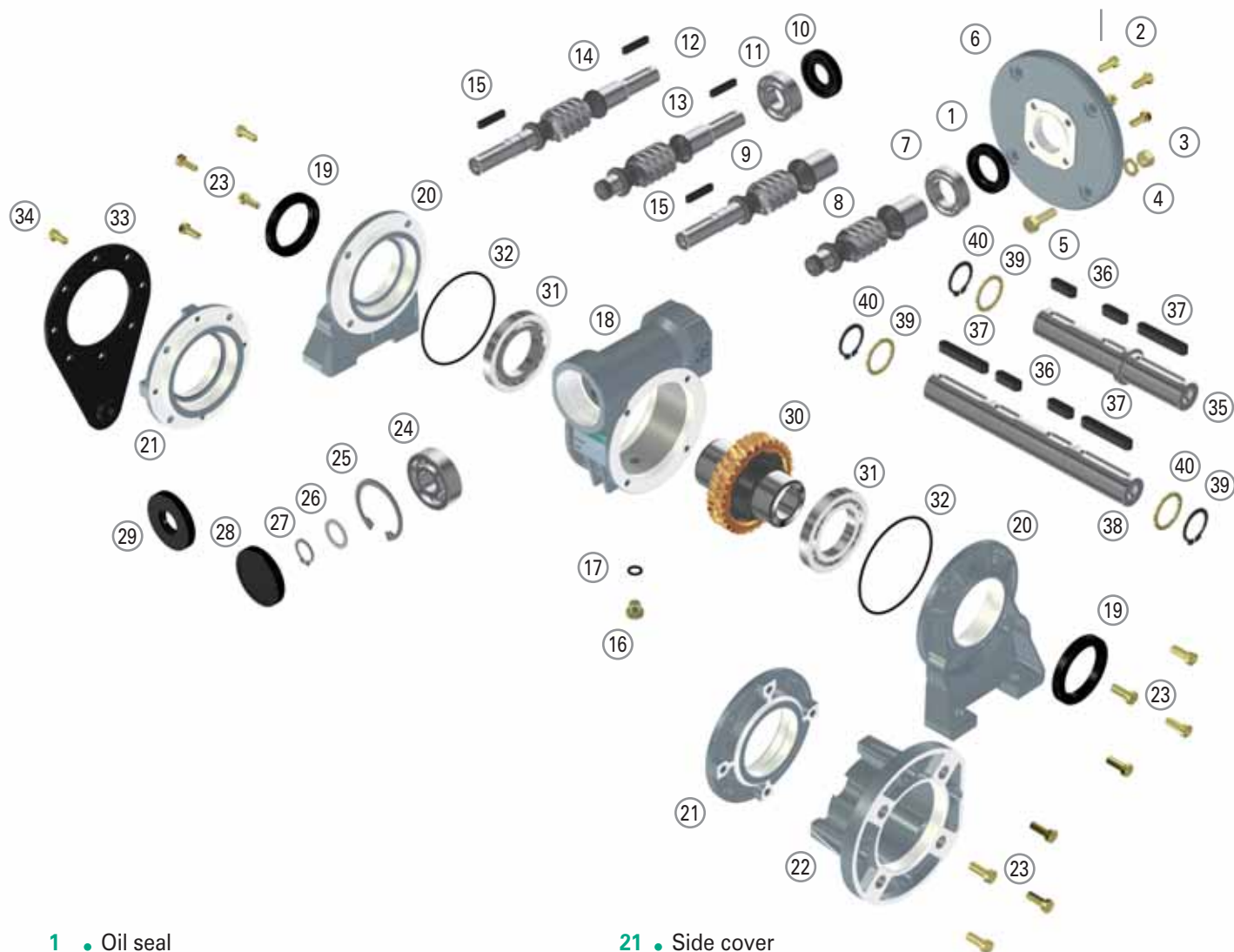
SINGLE-PHASE DIMENSIONS WITH IP55 TERMINAL BOX

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

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

* FORCED VENTILATION KIT THREE-PHASE MODELS
AVAILABLE ON REQUEST

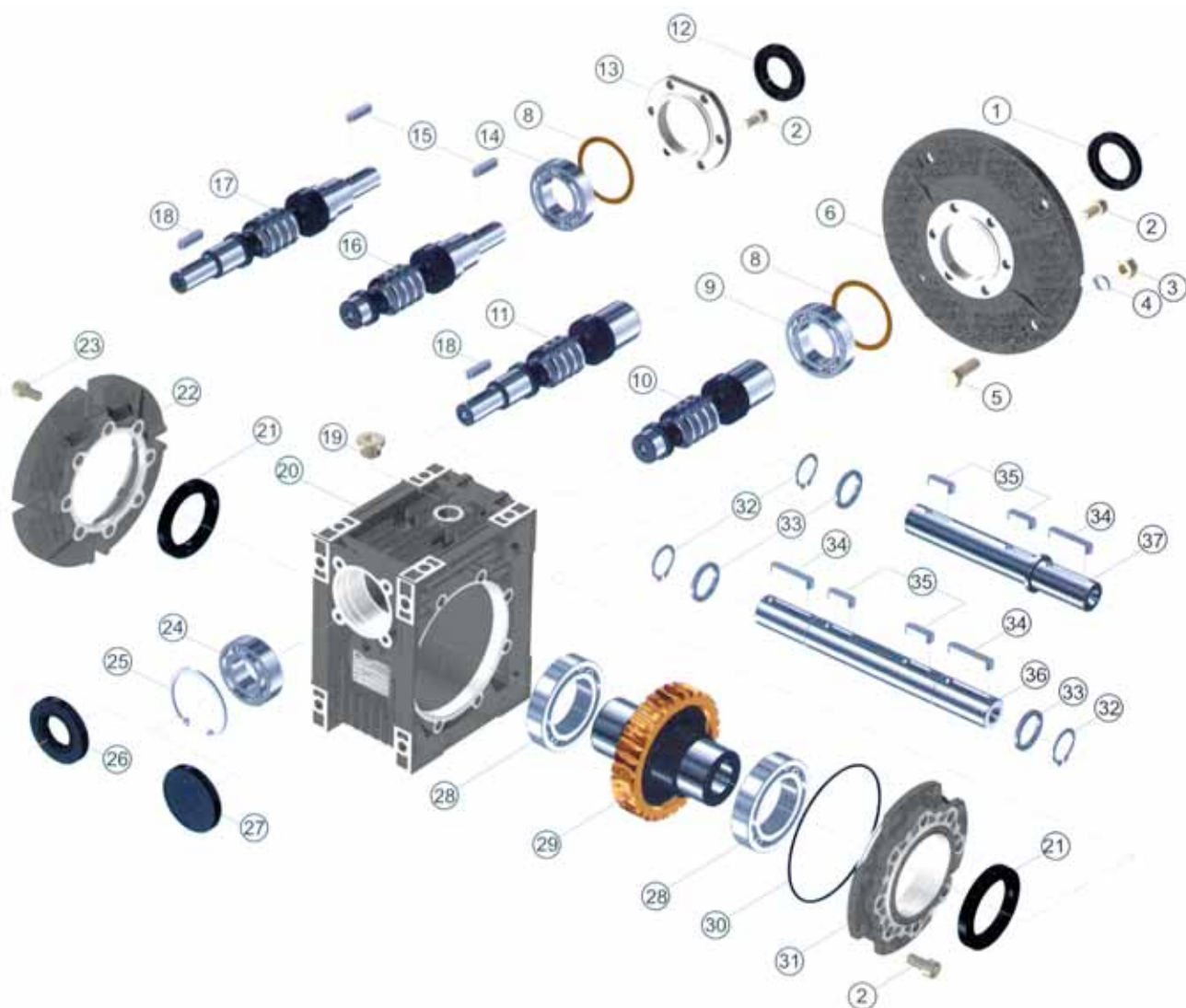
EXPLODED DRAWING AND SPARE PARTS LIST CHB 03 - 04 - 05



- 1 • Oil seal
- 2 • Screw
- 3 • Nut
- 4 • Washer
- 5 • Screw
- 6 • Flangia attacco motore
- 7 • Bearing
- 8 • Hole input worm
- 9 • Hole input and shaft output worm
- 10 • Oil seal
- 11 • Bearing
- 12 • Key
- 13 • Shaft input worm
- 14 • Double extended input shaft worm
- 15 • Key
- 16 • Oil plug
- 17 • Gasket
- 18 • Casing
- 19 • Oil seal
- 20 • Foot cover

- 21 • Side cover
- 22 • Output flange
- 23 • Screw
- 24 • Bearing
- 25 • Seeger
- 26 • Spacer
- 27 • Seeger
- 28 • Cap
- 29 • Oil seal
- 30 • Worm wheel
- 31 • Bearing
- 32 • O-ring
- 33 • Braccio di reazione
- 34 • Screw
- 35 • Single output shaft
- 36 • Key
- 37 • Key
- 38 • Double output shaft
- 39 • Spacer
- 40 • Seeger

EXPLODED DRAWING AND SPARE PARTS LIST CHB 06 - 07 - 08



- 1 • Oil seal
- 2 • Torx screw
- 3 • Nut
- 4 • Washer
- 5 • Hexagonal-head screw
- 6 • Motor connection flange
- 8 • Adjust spacer
- 9 • Bearing
- 10 • Hole input worm
- 11 • Hole input and shaft output worm
- 12 • Oil seal
- 13 • Input cover
- 14 • Bearing
- 15 • Key
- 16 • Shaft input worm
- 17 • Double extended input shaft worm
- 18 • Key
- 19 • Oil plug

- 20 • Casing
- 21 • Oil seal
- 22 • Output flange
- 23 • Embedded hexagonal-head screw
- 24 • Bearing
- 25 • Seeger
- 26 • Oil seal
- 27 • Cap
- 28 • Bearing
- 29 • Worm wheel
- 30 • O-ring
- 31 • Output cover
- 32 • Seeger
- 33 • Spacer
- 34 • Key
- 35 • Key
- 36 • Double output shaft
- 37 • Single output shaft

RADIAL LOADS ON THE OUTPUT SHAFT

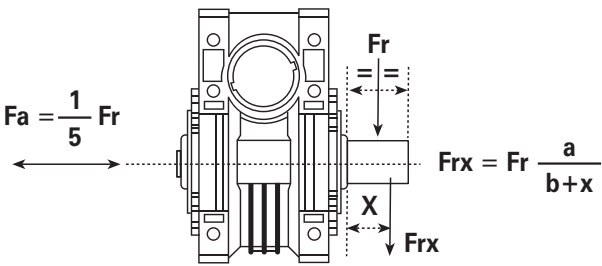
RADIAL LOADS ON THE OUTPUT SHAFT

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.

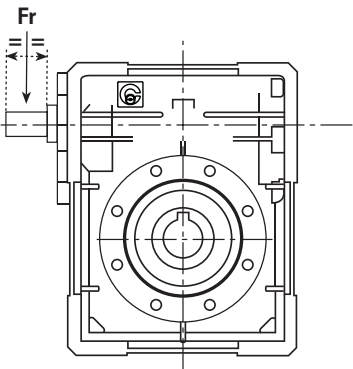
The radial loads related to the output speed (n2)=10 are the maximum loads supported by the gear.

- a** • Gear constant
- b** • Gear constant
- x** • Load distance from shaft shoulder in mm.
- Fr_x** • Radial load in position x (in N)
- Fr** • Radial load (N)
- Fa** • 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

RADIAL LOADS ON THE CENTRE LINE OF THE INPUT SHAFT



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

Use and maintenance instructions

INSTALLATION

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

OPERATION AND RUNNING-IN

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

MAINTENANCE

- The worm gears from size 03 to size 06 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.

GENERAL SALES CONDITIONS

1) **ORDERS** - Orders for special and standard material must always refer to offers made by CHIARAVALLI Trasmissioni SpA.

The orders are binding for the client. Once work has commenced no cancellations or order reductions will be accepted unless the client reimburses the costs of the material and the work carried out up to the moment in which the order was suspended. The quantity despatched can vary by $\pm 5\%$ compared to the quantity ordered.

2) **PRICES** - The prices are those in force at the date of order. All prices are for goods delivered ex-works Premazzo, packing excluded. If there should be any increase in production and material costs over the duration of the supply, CHIARAVALLI Trasmissioni SpA 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 Trasmissioni 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 Trasmissioni SpA 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 Trasmissioni SpA, 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 Trasmissioni SpA 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 Trasmissioni SpA, 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 Trasmissioni SpA and after their approval of the cost estimate. CHIARAVALLI Trasmissioni SpA 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 normal wear of the oil seals.

8) **RESPONSIBILITY** - CHIARAVALLI Trasmissioni SpA does not accept responsibility or pay any reimbursement for damages that occur during the use of their products, even if defective. CHIARAVALLI Trasmissioni SpA 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 Trasmissioni SpA 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 Trasmissioni SpA 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 Trasmissioni SpA until the invoice is fully paid.

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





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