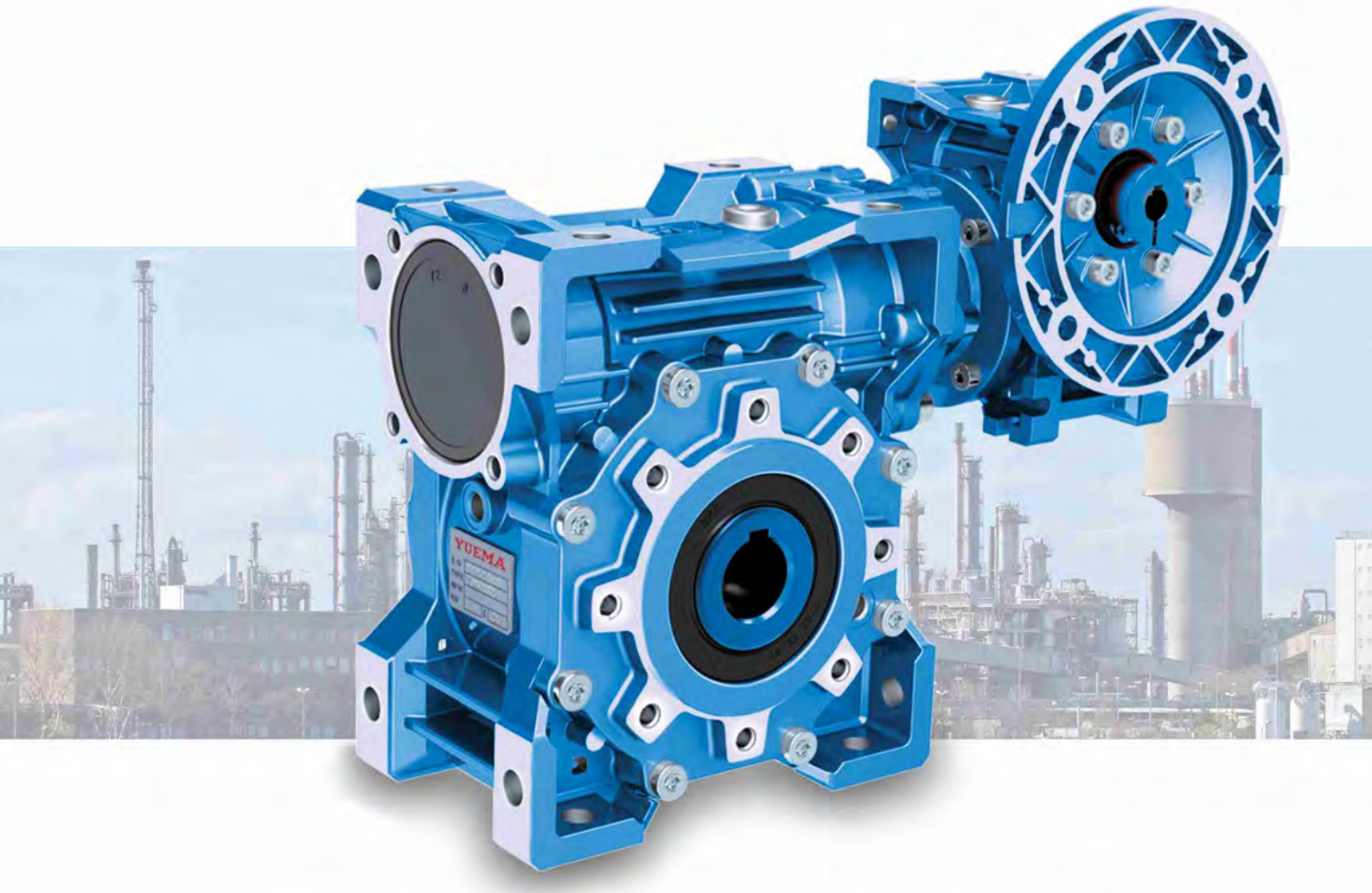
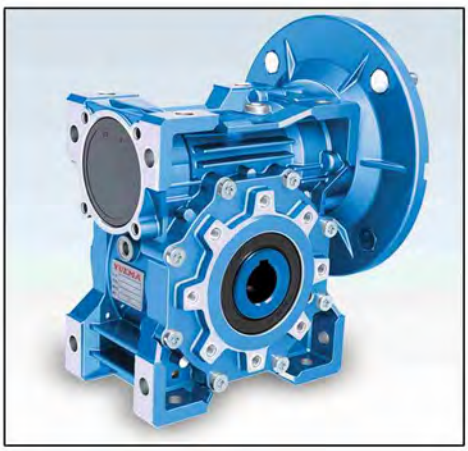
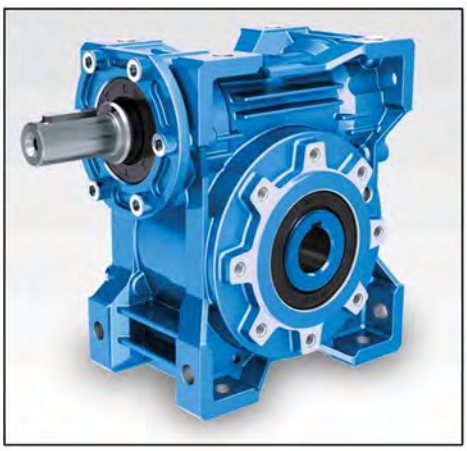
YUEMA

Worm Gear



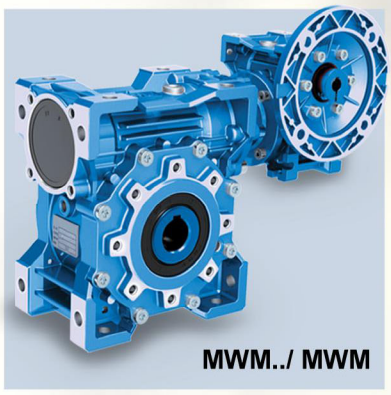




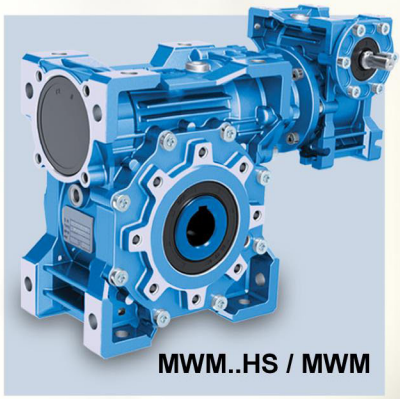
MWM SERIES WORM GEARED MOTORS AND WORM GEAR UNITS

WORM GEAR

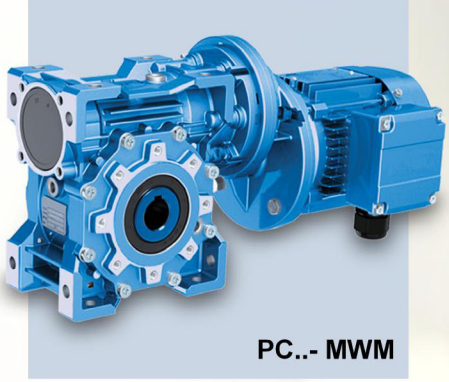
MWM...HS



MWM../ MWM



MWM..HS / MWM



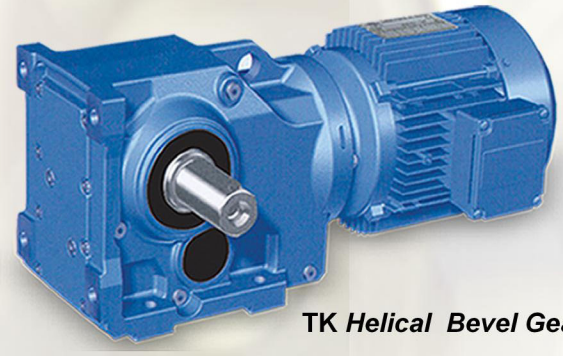
PC..- MWM

TKB / TKM...Series

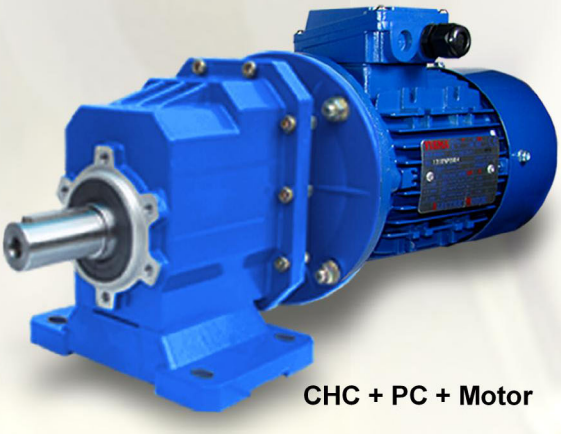
GEAR

TR *Helical Gear*

TRF *Helical Gear*



TK *Helical Bevel Gear*



CHC + PC + Motor

TRF *Helical Gear*

MOTOR

SA...B3

Y3A...B5

Y3...B3

YAL...B3

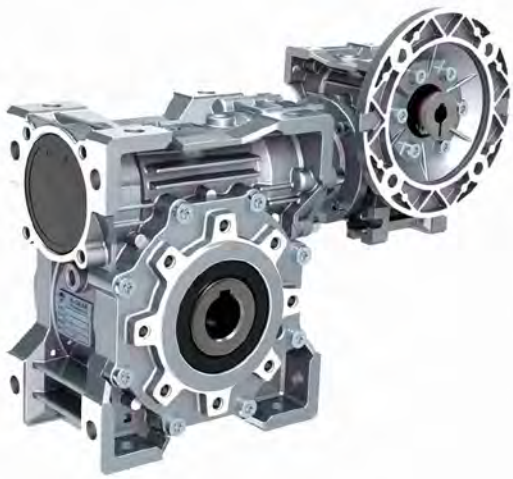
Y3A...B5

CONTENS

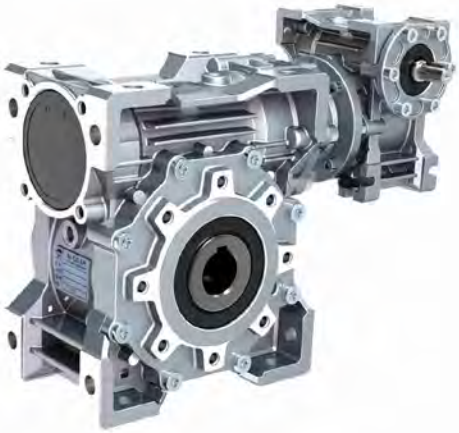
CONTENTS

MWM..

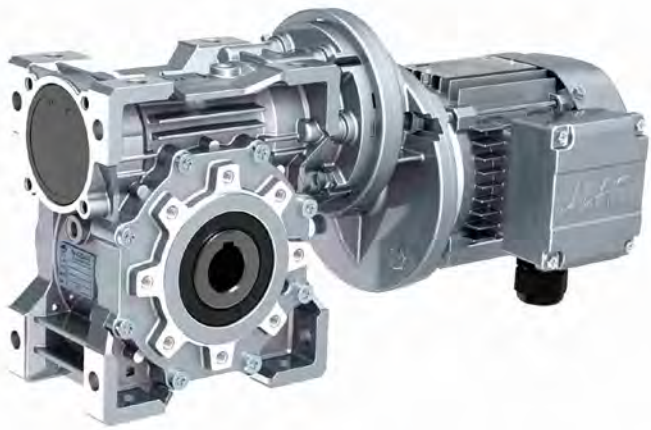
MWM..HS



MWM.. / MWM..

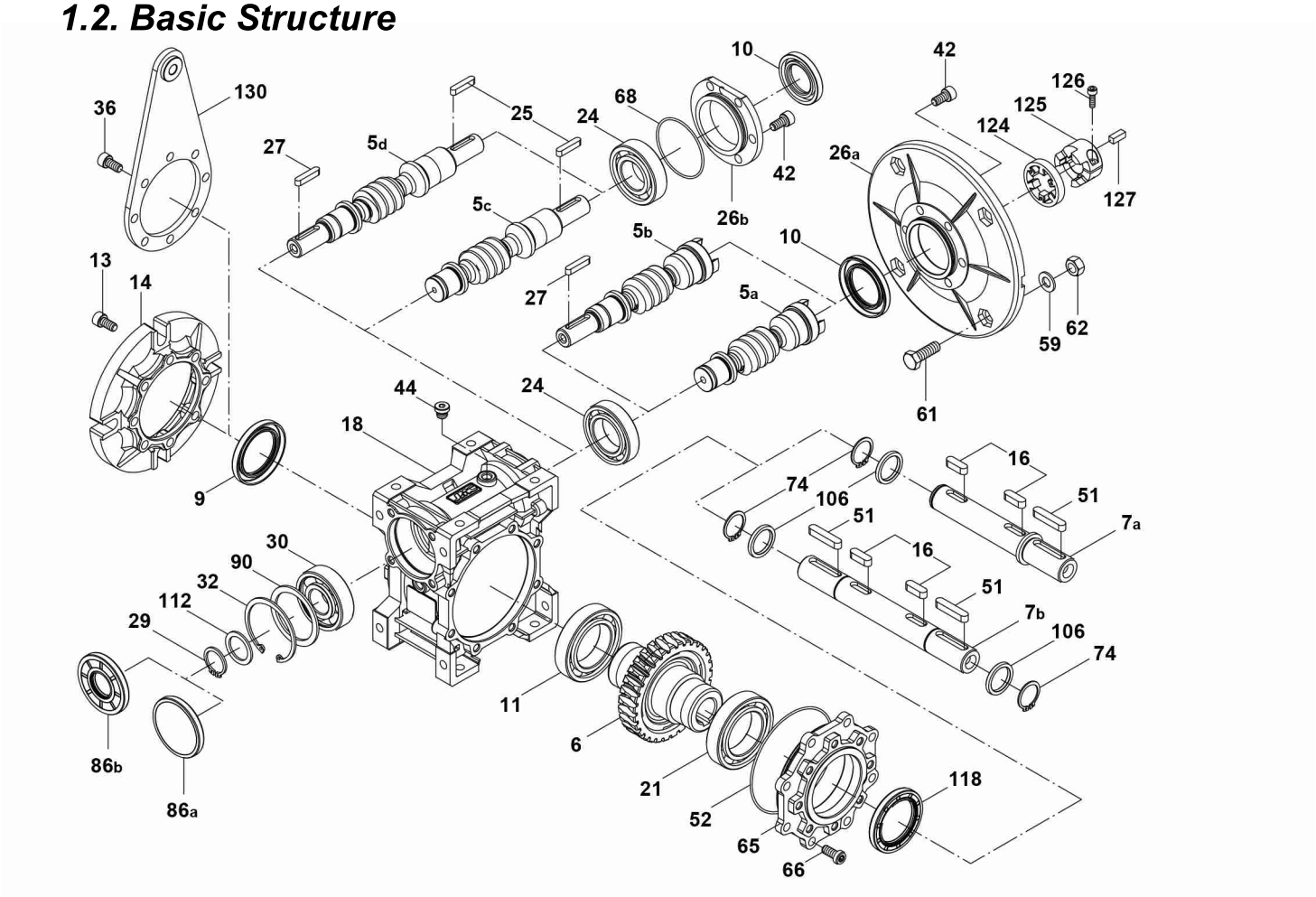


MWM..HS/MWM..



PC.. - MWM..

1.2. Basic Structure



5a	Hole input worm
5b	Hole input and shaft output worm
5c	Shaft input worm
5d	Shaft input and shaft output worm
6	Worm gear
7a	Unidirectional output shaft
7b	Bidirectional output shaft
9	Oil seal
10	Oil seal
11	Bearing
13	Inner hex screw
14	Output flange
16	Key
18	Gear housing
21	Bearing
24	Bearing
25	Key
26a	Input flange
26c	Input cover
27	Key
29	Circlips for shaft
30	Bearing
32	Circlip for hole

36	Inner six angle screw
42	Inner six angle screw
44	Oil plug
51	Key
52	O-ring
59	Plain washers
61	Hexagon head bolts
62	Nut
65	Output cover
66	Hexalobular socket head cap screws
68	O-ring
74	Circlips for shalt
86a	Cover
86b	Oil seal
90	Washer
106	Washer
112	Washer
118	Oil seal
124	Elastomer
125	Clamping sleeve
126	Inner six angle screw
127	Key
130	Torque arm

2. SUMMARIZE

2.1 Products characteristics

MWM series worm gear units is a new-generation of product developed by our company on tne basis of perfecting **MRV** series products witn a compromise of advanced tecnnology both at home and abroad, its main features are as follows:

1. Made of hign-duality aluminum alloy, light in weight and non-rusting.
2. Large in output torque.
3. Smooth in running and low in noise, can work long time in dreadful conditions.
4. High in radiating efficiency.
5. Good-looking in appearance, durable in service life and small in volume.
6. Suitable for omnibearing installation.
7. The mounting dimension of **MWM** series are compatible witn **MRV** series worm gear unit.
8. Modulaw and multistructure can meet tne demands of various conditions .

2.2 Main materials

1. Housing: die-cast aluminum alloy (frame size: 025 to 110).
2. worm: 20Cr, carbonize & quencher neat treatment make tne hardness of gear's surface up to 56~62 HRC. retain carburization layer's thickness between 0.3 and 0.5mm after precise grinding.
3. worm wheel: wearable stannum bronze alloy.

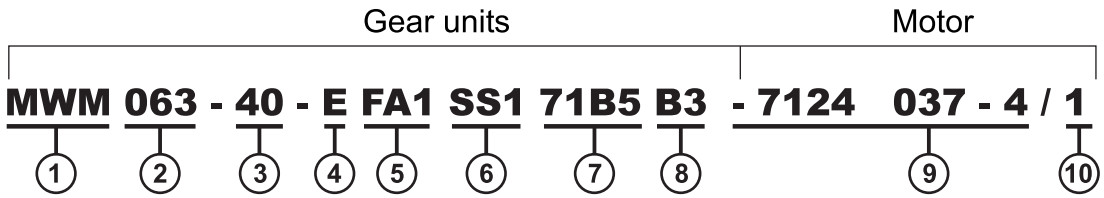
2.3 Surface painting

Aluminum alloy housing:

1. Snot blasting and special antiseptic treatment on tne aluminum alloy surface.
2. After pnospnating,spray tne paint RAL9022 in silver white.

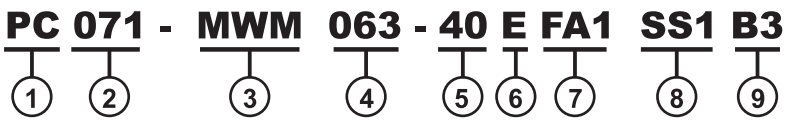
3. MODEL ILLUMINATE

3.1 ***MWM*** *Worm geared motors and worm gear units*



No	Comments
1	**MWM**: Code for gear units series
2	Central distance of worm gear units (spec)
3	Speed ratio of reducer (i = 5; 7.5; 10; 15; 20; 25; 30; 40; 50; 60; B0; 100)
4	**1).** No mark means single extension worm shaft **2). E**: Double extension worm shaft
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 shalt and position **3). DS**: Double output shaft
7	**1).** Normalized form of **IEC** input flange (without motor) **2). HS:** Shalt input
8	Installation position code
9	**1).** No mark means without motor **2).** Model motos (poles of power)
10	Position diagram for motor terminal box default position 1 not to write out is ok

3.2 ***PC-MWM*** *Worm gears with pre-stage helical units*



No	Comments
1	**PC:** Helical Pre-stage unit
2	Motor frame size
3	**MWM:** Code for gear units series
4	Central distance of worm gear units (spec)
5	Speed ratio of reducer (i =5; 7.5; 10; 15; 20; 25; 30; 40; 50; 60; 80; 100)
6	**1).** No mark means single extension worm shaft **2). E:** Double extension worm shaft
7	**1).** No mark means without output flange **2). FA,FB,FC,FD,FE(1/2):** output Flange and position
8	**1).** No mark means hole output **2). SS(1/2):** Single output shaft and position **3). DS:** Double output shaft
9	Installation position code

you should show whether the reducers are equipped with motors, otherwise reducers aren't supplied with motors.

3.3 MWM / MWM / Combinatio worm gear units

MWM 050 / 110 - 900 - E FA1 SS1 71B5 B3

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

No	Comments
1	Model code **1). MWM:** Hole input with flange **2). MRV:** Shaft input without flange
2	Central distance of worm gear units (spec)
3	Speed ratio of reducer
4	**1).** No mark means single extension worm shaft **2). E:** Double extension worm shaft
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	1). Normalized form of **IEC** input flange (without motor) **2). HS:** Shaft input
8	Installation position code

When ordering, you should show whether the reducers are equipped with motors, otherwise reducers aren't supplied with motors.

4. RELEVANT PARAMETER

4.1 Power P

$$P_1 = \frac{P_2}{\eta} \quad [kW]$$

$$P_{1n} \geqslant P_1 \bullet f_s \ [kW]$$

P_1	Input power
P_2	Output power
P_{1n}	Rated input motor power
f_s	Service factor
η	Transmission efficiency

The parameter can be found in the **MWM..HS** gearbox rating charts and represents the **KW** that can be safely transmitted to the gearbox, based on input speed n_1 and service factor **fs=1.**

Values of η_d are calculated for gearboxes after a sufficiently long running-in period. After the running-in period the surface temperature in operation reduces and finally stabilises. It may be w worth highlighting that values of rated torque M_{2n} given in the catalogue take the transmission efficiency η_d into consideration.

4.2 Rotation speed n

n_1 Gear units input speed

n_2 Gear units output speed

If driven by the external gearing,1400r/min or lower rotation speed is suggested so as to optimize the working conditions and prolong the service life.

4.3 Transmission ratio i

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

4.4 Torque M

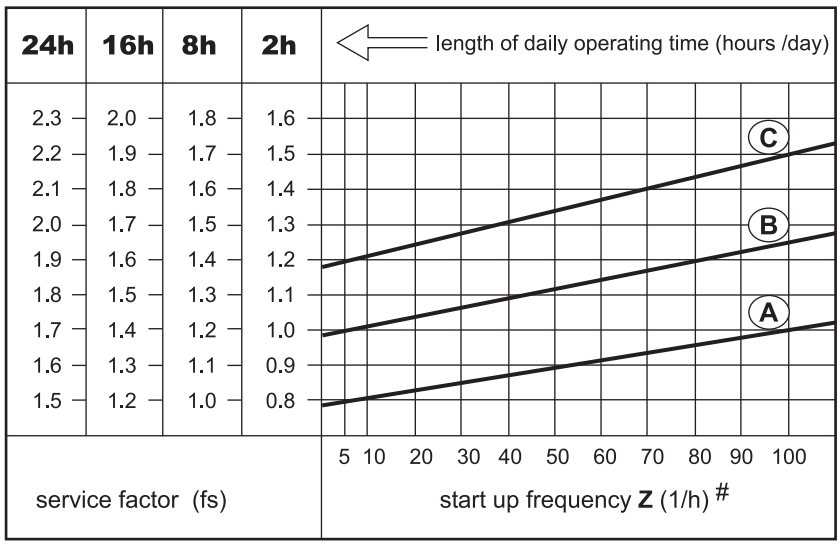
$$M_2 = \frac{9550 \bullet P_1 \bullet \eta}{n_2} \quad [Nm]$$

$$M_{2n} \geqslant M_2 \bullet f_s \ [Nm]$$

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

4.5 Service factor fs

The effect of the driven machine on the gear unit is taken into account to a sufficient level of accuracy using the service factor fs. The service factor is determined according to the daily operating time and the starting frequency Z. Three load classifications are considered depending on the mass acceleration factor. You can read off the service factor applicable to your application in following Figure.
The service factor selected using this diagram must be less than or equal to the service factor as given in the performance parameter table.



starting frequency **Z**: The cycles include all starting and braking procedures as well as change overs from low to high speed.

4.5.1 load classifications

Ⓐ Uniformshock load, permitted mass acceleration factor $f_a \leqslant 0.3$

Ⓑ Moderate shock load, permitted mass acceleration factor $f_a \leqslant 3$

Ⓒ Heavy shock load, permitted mass acceleration factor $f_a \leqslant 10$

Load classifications see the addendum

load classifications:

Screw feeders for light materials, fans, assemblylines, conveyor belts for light materials, small mixers,lifts, cleaning machines, fillers, control machines.

Winding devices, woodworking machine feeders, goods lifts, balancers,threading machines, medium mixers, conveyor belts for heavy materials, winches,sliding doors, fertilizer scrapers, packing machines, concrete mixers, crane mechanisms, milling cutters, folding machines, gear pumps.

Mixers for heavy materials, shears, presses, centrifuges, rotating supports, winches and lifts for heavy materials, grinding lathes, stone mills, bucket elevators, drilling machines, hammer mills, cam presses, folding machines, turntables, tumbling barrels, vibrators, shredders.

4.5.2 Mass acceleration factor

The mass acceleration factor is calculated as follows:

$$fa = \frac{Jc}{Jm}$$

fa Mass acceleration factor
Jc All external mass moments of inertia [kgm^2]
Jm Mass moment of inertia on the motor end [kgm^2]

If mass acceleration factors **fa**>10, please call our Technical Service.

Service factor f_s should be adjusted as followings:

1). ambient temperature is 30 ~ 40°C: f_s x (1.1~1.2)
2). ambient temperature is 40 ~ 50°C: f_s x (1.3~1 .4)
3). ambient temperature is 50 ~ 60°C: f_s x (1.5~1.6)
4). ambient temperature >60°C, please call our Technical Service.

To keep the service-life of gear units, the usefactor f_s selected from the catalogue must be equal or slightly higher than the calculated use factor fs.

4.6 Radial loads Fr

When determining the resulting radial loads, the type of transmission elements, mounted on the shaft end must be considered. Various transmission elements are corresponding with following transmission element factors f_z :

Transmission element	Transmission element factor Fz	Comments
Gears	**1.00**	⩾ 17 teeth
	1.15	< 17 teeth
Chain sprockets	**1.00**	⩾ 20 teeth
	1.25	< 20 teeth
	1.40	< 13 teeth
Narrow V-belt pulleys	**1.75**	Influence of the tensile force
Flat belt pulleys	**2.50**	Influence of the tensile force
Toothed belt pulleys	**2.50**	Influence of the tensile force

The overhung loads exerted on the motor or gear shaft is then calculated as follows:

$$\mathbf{Fr = \frac{M \cdot 2000 \cdot f_z}{d_0}\ [N]}$$

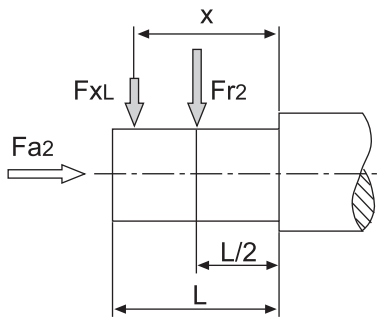
Fr Resulting radial load [N]
M Torque on the shaft [Nm]
d_0 Mean diameter of the mounted transmission element in [mm]
f_z Transmission element factor

The allowed radial load force on the shaft is calculated with the following formula :

$$FxL \leq \frac{Fr2.a}{(b+x)} [N]$$

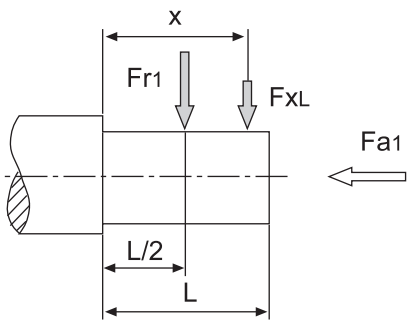
Fr2 Permitted overhung load (x = L/2) for foot-mounted gear units according to the selection tables in [N]
a, b Gear unit constant for overhung load conversion [mm]
x Distance from the shaft shoulder to the force apllication point in [mm]
The values of a , b , Fr2 are given in following tables:

Output shafts radial loads



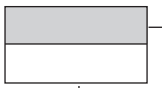
	MRV025	MWM030	MWM040	MWM050	MWM063	MWM075	MWM090	MRV110	MRV130	MRV150
a	50	65	84	101	120	131	162	176	188	215
b	38	50	64	76	95	101	122	136	148	174
Fr2 max	1350	1830	3490	4840	6270	7380	8180	12000	13500	18000

Input shafts radial loads



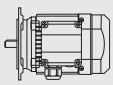
MWM..HS	030	040	050	063	075	090	110	130	150
a	86	106	129	159	192	227	266	314	350
b	76	94.5	114	139	167	202	236	274	310
Fr1 max	210	350	490	700	980	1270	1700	2100	2800

4.7 SELECTION TABLES COMMENTS



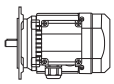
Combination with the IEC in the header row **is possible**

Combination with the IEC in the header row **is not possible**

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	fs			Page

P_{1n} Rated power driving motor **[kW];**
n_2 Output speed **[r/min];**
M_{2n} Rated output torque **[Nm];**
$M_{2\ max}$ Permissible output torque **[Nm];**
i Gear unit ratio
fs Service factor;

 Gear unit type;

 Motor type;

Page Dimension sheet page no;

5. SELECTION EXAMPLE

5.1 Gear motor

Example: The input power of driver machine is 0.5KW, n_1=1400r/min, uniform, start up frequency 20(1/h), continous running for 24 hours, the ambient temperature is +32°C, n_2=93.3r/min, B3 mounted SO:

$$i = \frac{n_1}{n_2} = \frac{1400}{93.3} = 15$$

Check mash table on P14, estimate when the i=15, $\eta_d \approx 0.82$

Check and adjust the service factor, will get

$f_s = 1.53 \times 1.12 = 1.714$

$$P_{1n} \geq \frac{P_2}{\eta_d} \cdot f_s = \frac{0.5}{0.82} \times 1.714 = 1.045[kW]$$

Choose type:

MWM075 - 15 - B3 - 1.1 - 4

Count output torque:

$$M_2 = \frac{9550 \cdot P_2}{n_2} = \frac{9550 \times 0.5}{93.3}$$

$$= 51.18[Nm]$$

$$M_{2n} = 95 \geq M_2 \cdot f_s = 51.18 \times 1.714 = 87.72[Nm]$$

5.1 Gear units

Example: Required torque 300Nm on driven machine continuous running for 8 hours, uniform loda, the ambient temperature is 30°C then choose the service factor f_S=1.2x1.1 =1.32, n_1=900r/min,n_2=22.5r/min.

$$M_{2n} \geq M_2 \cdot f_s = 300 \times 1.32 = 396[Nm]$$

$$i = \frac{n_1}{n_2} = \frac{900}{22.5} = 40$$

Choose type:

MWM090 - 40-HS

6. RELEVANT DATA

6.1 Gear unit preconfiguration table

MRV025.. n_1=1400r/min $f_{s=1}$ 13Nm

i ratio	n_2 [r/min]	M_2max [Nm]	Fr_2 [N]	56B14
60	23.3	10	1006	
50	28	11	946	
40	35	13	878	
30	46.7	13	798	
25	56	12	751	
20	70	12	697	
15	93.3	12	633	
10	140	12	553	
7.5	186.7	11	503	

MWM030.. n_1=1400r/min $f_{s=1}$ 21Nm

i ratio	n_2 [r/min]	M_2max [Nm]	Fr_2 [N]	56B5 56B14	63B5 63B14
80	17.5	13	1504		
60	23.3	16	1367		
50	28	17	1286		
40	35	18	1194		
30	46.7	20	1085		
25	56	21	1021		
20	70	18	948		
15	93.3	18	861		
10	140	18	752		
7.5	186.7	18	683		
5	280	18	597		

MWM040.. n_1=1400r/min $f_{s=1}$ 45Nm

i ratio	n_2 [r/min]	M_2max [Nm]	Fr_2 [N]	56B5	63B5 63b14	71B5 71B14
100	14	29	3118			
80	17.5	33	2895			
60	23.3	36	2630			
50	28	39	2475			
40	35	41	2298			
30	46.7	45	2087			
25	56	38	1964			
20	70	39	1824			
15	93.3	40	1657			
10	140	40	1447			
7.5	186.7	40	1315			
5	280	34	1149			

MWM050.. n_1=1400r/min $f_{s=1}$ 84Nm

i ratio	n_2 [r/min]	M_2max [Nm]	Fr_2 [N]	63B5	71B5 71B14	80B5 80B14
100	14	55	4280			
80	17.5	65	3973			
60	23.3	68	3610			
50	28	73	3397			
40	35	76	3153			
30	46.7	84	2865			
25	56	70	2696			
20	70	73	2503			
15	93.3	74	2274			
10	140	72	1987			
7.5	186.7	71	1805			
5	280	62	1577			

MWM063.. n_1=1400r/min $f_{s=1}$ 160Nm

i ratio	n_2 [r/min]	M_2max [Nm]	Fr_2 [N]	71B5 71B14	80B5 80B14	90B5 90B14
100	14	118	5595			
80	17.5	122	5193			
60	23.3	130	4719			
50	28	135	4440			
40	35	145	4122			
30	46.7	160	3745			
25	56	130	3524			
20	70	135	3272			
15	93.3	140	2973			
10	140	130	2597			
7.5	186.7	128	2359			

MWM075.. n_1=1400r/min $f_{s=1}$ 230Nm

i ratio	n_2 [r/min]	M_2max [Nm]	Fr_2 [N]	71B5	80B5 80B14	90B5 90B14	100B5 100B14	112B5 112B14
100	14	180	6603					
80	17.5	190	6130					
60	23.3	200	5569					
50	28	210	5241					
40	35	220	4865					
30	46.7	230	4421					
25	56	200	4160					
20	70	210	3862					
15	93.3	200	3509					
10	140	195	3065					
7.5	186.7	185	2785					

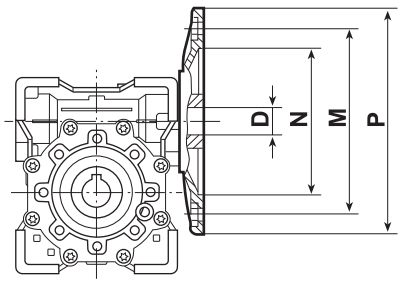
MRV090.. n_1=1400r/min $f_{s=1}$ **410Nm**

i ratio	n_2 [r/min]	M_2max [Nm]	Fr_2 [N]	80B5 80B14	90B5 90B14	100B5 100B14	112B5 112B14
100	14	270	7306				
80	17.5	285	6783				
60	23.3	320	6163				
50	28	340	5799				
40	35	360	5383				
30	46.7	410	4891				
25	56	340	4603				
20	70	355	4273				
15	93.3	360	3882				
10	140	310	3391				
7.5	186.7	290	3081				

MWM110.. n_1=1400r/min $f_{s=1}$ **725Nm**

i ratio	n_2 [r/min]	M_2max [Nm]	Fr_2 [N]	80B5	90B5	100B5	132B5
100	14	483	9232				
80	17.5	515	8571				
60	23.3	616	7787				
50	28	660	7328				
40	35	702	6803				
30	46.7	725	6181				
25	56	679	5816				
20	70	644	5399				
15	93.3	656	4905				
10	140	598	4285				
7.5	186.7	552	3893				

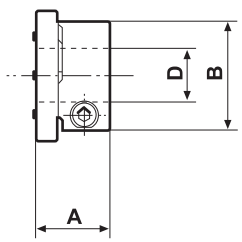
6.2 PAM (IEC) Input flange



PAM (IEC)	56B14	56B5	63B14	63B5	71B14	71B5	80B14	80B5	90B14	90B5	100B14 112B14	100B5 112B5	132B5
D	9		11		14		19		24		28		38
P	80	120	90	140	105	160	120	200	140	200	160	250	300
M	65	100	75	115	85	130	100	165	115	165	130	215	265
N	50	80	60	95	70	110	80	130	95	130	110	180	230

6.3 Clamping type flexible coupling

Coupling type	PAM (IEC)	D	A	B	MWM
TL03-09	56B5	9	21	30	MWM030, MWM040
TL03-11	63B5/14	11	21	30	MWM030, MWM040
TL03-14	71B5/14	14	21	35	MWM40
TL05-11	63B5/14	11	26	38.5	MWM050
TL05-14	71B5/B14	14	26	38.5	MWM050, MWM63
TL05-19	80B5/B14	19	26	38.5	MWM050, MWM63
TL05-24	90B5/B14	24	26	48	MWM063
TL07-14	71B5/B14	14	34	51	MWM075
TL07-19	80B5/B14	19	34	51	MWM075, MWM090
TL07-24	90B5/B14	24	34	58	MWM075, MWM090
TL07-28	100B5/B14, 112B5/B14	28	34	58	MWM075, MWM090
TL11-19	80B5	19	40	59	MWM110
TL11-24	90B5	24	40	59	MWM110
TL11-28	100B5, 112B5	28	40	59	MWM110
TL11-38	132B5	38	40	72	MWM110

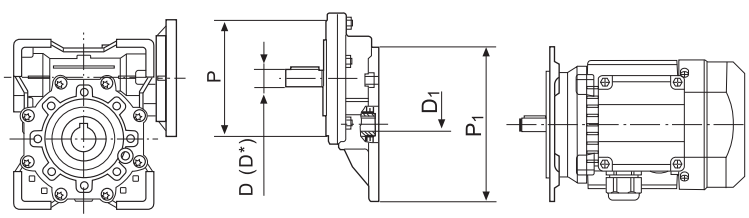


6.4 PC-MWM Combinations

	i	PC 063		PC 071		PC 080			PC 090		
		105 / 11 i = 2.93	105 / 14 i = 2.93	120 / 14 i = 2.93	120 / 19 i = 2.93	160 / 19 i = 3	160 / 24 i = 3	160 / 28 i = 3	160 / 19 i = 2.46	160 / 24 i = 2.46	160 / 28 i = 2.46
MWM040	25										
	30										
	40										
	50										
	60										
	80										
	100										
MWM050	25										
	30										
	40										
	50										
	60										
	80										
	100										
MWM063	25										
	30										
	40										
	50										
	60										
	80										
	100										
MWM075	25										
	30										
	40										
	50										
	60										
	80										
	100										
MWM090	25										
	30										
	40										
	50										
	60										
	80										
	100										
MRV105	25										
	30										
	40										
	50										
	60										
	80										
	100										
MRV110	25										
	30										
	40										
	50										
	60										
	80										
	100										
MRV130	25										
	30										
	40										
	50										
	60										
	80										
	100										
MRV150	25										
	30										
	40										
	50										
	60										
	80										
	100										

The PC construction is modular and therefore it can be as a separate unit mounted on any type of fitted geared motor (PAM), whose the various possibilities of flange/output shafts can be found on page 14.

Fitting the pre-stage helical module on the main reduction unit is easily done as for any motor of type B14.The prestage unit cannot be used by itself, but only coupled with another reduction unit.



	P	D	D*	P_1	D_1
PC 063	105	11	14	140 (63B5)	11
PC 071	120	14	19	160 (71B5)	14
PC 080	160	19	24 28	200 (80B5)	19
PC 090	160	24	19 28	200 (90B5)	24

* Only on request

6.5 MWM Assignment Table Of Combination Ratio

n1=1400r/min		MRV025/MWM030			MRV025/MWM040			MWM030/040			MWM030/050			MWM030/063		
i	n2	P1 [kW]	i025	i030	P1 [kW]	i025	i040	P1 [kW]	i025	i040	P1 [kW]	i030	i050	P1 [kW]	i030	i063
100	14	0.09	10	10	0.09	10	10	0.09	10	10	0.18	10	10	0.18	10	10
150	9.3	0.09	10	15	0.09	10	15	0.09	10	15	0.18	10	15	0.18	10	15
200	7	0.09	10	20	0.09	10	20	0.09	10	20	0.18	10	20	0.18	10	20
250	5.6	0.09	10	25	0.09	10	25	0.09	10	25	0.18	10	25	0.18	10	25
300	4.7	0.06	10	30	0.06	10	30	0.09	10	30	0.18	10	30	0.18	10	30
400	3.5	0.06	20	20	0.06	10	40	0.06	10	40	0.12	10	40	0.12	10	40
500	2.8	0.06	20	25	0.06	20	25	-	-	-	0.09	10	50	0.09	10	50
600	2.3	0.06	20	30	0.06	20	30	-	-	-	0.09	20	30	0.09	20	30
750	1.9	0.06	30	25	0.06	25	30	-	-	-	0.09	25	30	0.09	25	30
900	1.6	0.06	30	30	0.06	30	30	-	-	-	0.06	30	30	0.06	30	30
1200	1.2	0.06	40	30	0.06	40	30	-	-	-	0.06	40	30	0.06	40	30
1500	0.93	0.06	50	30	0.06	50	30	-	-	-	0.06	50	30	0.06	50	30
1800	0.78	0.06	60	30	0.06	60	30	-	-	-	-	-	-	0.06	60	30
2400	0.58	0.06	60	40	0.06	60	40	-	-	-	-	-	-	0.06	60	40
3000	0.47	0.06	60	50	0.06	60	50	-	-	-	-	-	-	0.06	60	50
4000	0.35	-	-	-	0.06	50	80	-	-	-	-	-	-	-	-	-
5000	0.28	-	-	-	0.06	50	100	-	-	-	-	-	-	-	-	-

n1=1400r/min		MWM040/050			MWM040/063			MWM040/075			MWM040/090			MWM050/90		
i	n2	P1 [kW]	i040	i050	P1 [kW]	i040	i063	P1 [kW]	i040	i075	P1 [kW]	i040	i090	P1 [kW]	i050	i090
100	14	0.37	10	10	0.37	10	10	0.37	10	10	0.37	10	10	0.75	10	10
150	9.3	0.25	10	15	0.37	10	15	0.37	10	15	0.37	10	15	0.75	10	15
200	7	0.18	10	20	0.37	10	20	0.37	10	20	0.37	10	20	0.75	10	20
250	5.6	0.12	10	25	0.25	10	25	0.37	10	25	0.37	10	25	0.75	10	25
300	4.7	0.18	10	30	0.25	10	30	0.37	10	30	0.37	10	30	0.75	10	30
400	3.5	0.12	20	40	0.25	10	40	0.25	10	40	0.37	10	40	0.55	10	40
500	2.8	0.09	20	50	0.18	10	50	0.25	10	50	0.37	10	50	0.37	10	50
600	2.3	-	-	-	0.18	20	30	0.18	20	30	0.37	20	30	0.37	20	30
750	1.9	-	-	-	0.12	25	30	0.18	25	30	0.25	25	30	0.37	25	30
900	1.6	0.06	30	30	0.12	30	30	0.18	30	30	0.25	30	30	0.25	30	30
1200	1.2	-	-	-	-	-	-	0.18	40	30	0.25	40	30	0.25	40	30
1500	0.93	-	-	-	0.09	50	30	0.12	50	30	0.18	50	30	0.18	50	30
1800	0.78	-	-	-	0.06	60	30	0.12	60	30	0.18	60	30	0.18	60	30
2400	0.58	-	-	-	0.06	60	40	0.09	60	40	0.12	60	40	0.12	60	40
3000	0.47	-	-	-	-	-	-	0.06	60	50	0.09	60	50	-	-	-
4000	0.35	-	-	-	-	-	-	0.06	80	50	0.09	80	50	-	-	-
5000	0.28	-	-	-	-	-	-	0.06	100	50	0.09	100	50	-	-	-

n1=1400r/min		MWM050/110			MWM063/110		
i	n2	P1 [kW]	i050	i110	P1 [kW]	i063	i110
100	14	0.75	10	10	1.5	10	10
150	9.3	0.75	10	15	1.5	10	15
200	7	0.75	10	20	1.5	10	20
250	5.6	0.75	10	25	1.5	10	25
300	4.7	0.75	10	30	1.5	10	30
400	3.5	0.75	10	40	0.75	10	40
500	2.8	0.75	20	25	0.75	20	25
600	2.3	0.55	20	30	0.75	20	30
750	1.9	0.55	25	30	0.55	25	30
900	1.6	0.55	30	30	0.55	30	30
1200	1.2	0.37	40	30	0.37	40	30
1500	0.93	0.37	50	30	0.37	50	30
1800	0.78	0.25	60	30	0.25	60	30
2400	0.58	0.25	60	40	0.25	60	40
3000	0.47	0.18	60	50	-	-	-
4000	0.35	0.12	80	50	-	-	-
5000	0.28	0.12	100	50	-	-	-

You can choose025,030,040,050,063,075,090,110 as combination unit to combine according to the fact your special needs.

6.6 Efficiency & Irreversibility Character

Efficiency is an important parameter of reducer, Efficiency η depends on tne following parameters: 1) helix angle of gearing, 2) driving speed, 3) running-in of gearing, 4) The performance of oil, oil seal and bearing. The mesh data table on page 15 shows dynamic efficiency (n_1=1400) and static efficiency values. Remember that these values are only achieved after the unit has been run in.Torque values Mn2 indicated in the catalogue are calculated by considering tne steady-state performance of the gearboxes. The actual values mentioned above may be nave deflection.

6.6.1 Dynamic Irreversibility

Dynamic irreversibility is achieved when the Output shaft stops instantly when drive is no longer transmitted through the worm shaft. This condition requires a dynamic efficiency of η_d **< 0.4** (see table on page 14).

6.6.1 Static Irreversibility

Static irreversibility is achieved vvhen the gear reducer at a standstill, the application of a load to the output shaft can't drive the worm shaft. This condition reduires a static efficiency of η_s **< 0.5** (see table on page 14)

ηd	>0.6	0.5 ~ 0.6	0.4 ~ 0.5	<0.4
DYNAMIC IRREVERSIBILITY	dynamic reversibility	low dynamic reversibility	good dynamic irreversiblity	dynamic irreversibility

ηd	>0.55	0.5 ~ 0.55	<0.5
STATIC IRREVERSIBILITY	Static reversibility	low static reversibility	static irreversibility

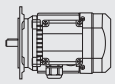
⚠ The table shows approximate irreversibility classes. Vibrations and shocks can affect a gear reducer's irreversibility. As it is virtually impossible to provide ahd guarantee total non reversing, We recommend the use of an external brake with sufficient capability to prevent vibrations ih duced starting, where these circumstances are required. For the irreversibility conditions of a combined geared unit one must consider that the efficiency of the group is giveh by the product of the efficiencies of each single reducer, i.e.: $\eta_{tot} = \eta_1 \times \eta_2$.

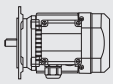
6.6.3 Mesh Data

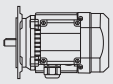
	i	5	7.5	10	15	20	25	30	40	50	60	80	100
MRV025	Z_1		4	3	2	2	2	1	1	1	1		
	m_n		1.18	1.23	1.27	0.98	0.79	1.29	0.99	0.8	0.67		
	y		25°18'	29°31'	13°18'	11°2'	9°5'	6°44'	5°34'	4°34'	3°55'		
	$\eta_{d\ (n1=1400r/min)}$		0.85	0.83	0.79	0.76	0.73	0.68	0.64	0.59	0.56		
	η_s		0.71	0.67	0.60	0.56	0.52	0.45	0.41	0.36	0.33		
MWM030	Z_1	6	4	3	2	2	1	1	1	1	1	1	1
	m_n	1.86	1.36	1.39	1.42	1.09	1.69	1.43	1.1	0.89	0.74	0.56	0.45
	y	27°13'	18°55'	14°25'	9°44'	7°50'	5°33'	4°54'	3°56'	3°17'	2°43'	2°7'	1°43'
	$\eta_{d\ (n1=1400r/min)}$	0.86	0.84	0.81	0.76	0.72	0.66	0.65	0.59	0.54	0.50	0.44	0.39
	η_s	0.71	0.66	0.62	0.54	0.49	0.41	0.39	0.33	0.29	0.26	0.21	0.18
MWM040	Z_1	4	4	3	2	2	2	1	1	1	1	1	1
	m_n	2.57	1.87	1.95	2	1.54	1.26	2.04	1.55	1.27	1.06	0.8	0.65
	y	23°48'	23°54'	18°23'	12°30'	10°3'	8°45'	6°19'	5°4'	4°24'	3°42'	2°52'	2°29'
	$\eta_{d\ (n1=1400r/min)}$	0.88	0.86	0.84	0.80	0.77	0.74	0.69	0.65	0.61	0.57	0.51	0.47
	η_s	0.73	0.70	0.66	0.59	0.54	0.51	0.44	0.39	0.36	0.32	0.27	0.24
MWM050	Z_1	5	4	3	2	2	2	1	1	1	1	1	1
	m_n	2.57	2.34	2.43	2.5	1.92	1.56	2.54	1.94	1.58	1.32	1	0.8
	y	29°20'	23°49'	18°19'	12°27'	10°3'	8°33'	6°18'	5°4'	4°18'	3°38'	2°52'	2°17'
	$\eta_{d\ (n1=1400r/min)}$	0.88	0.87	0.85	0.81	0.78	0.75	0.71	0.67	0.63	0.59	0.53	0.48
	η_s	0.73	0.70	0.66	0.59	0.54	0.51	0.44	0.39	0.36	0.32	0.27	0.24
MWM063	Z_1		4	3	2	2	2	1	1	1	1	1	1
	m_n		2.96	3.08	3.17	2.44	1.98	3.23	2.47	1.99	1.68	1.27	1.02
	y		24°31'	18°53'	12°51'	10°29'	8°45'	6°30'	5°17'	4°24'	3°49'	2°59'	2°26'
	$\eta_{d\ (n1=1400r/min)}$		0.88	0.86	0.82	0.80	0.77	0.73	0.69	0.65	0.62	0.56	0.51
	η_s		0.70	0.66	0.59	0.55	0.51	0.44	0.40	0.36	0.33	0.28	0.24
MWM075	Z_1		4	3	2	2	2	1	1	1	1	1	1
	m_n		3.53	3.7	3.83	2.94	2.39	3.92	2.99	2.41	2.02	1.54	1.24
	y		26°38'	20°37'	14°5'	11°19'	9°29'	7°9'	5°43'	4°46'	4°1'	3°17'	2°44'
	$\eta_{d\ (n1=1400r/min)}$		0.88	0.87	0.84	0.81	0.79	0.76	0.72	0.68	0.64	0.59	0.55
	η_s		0.71	0.68	0.61	0.57	0.53	0.47	0.41	0.37	0.34	0.29	0.26
MWM090	Z_1		4	3	2	2	2	1	1	1	1	1	1
	m_n		4.23	4.47	4.66	3.6	2.93	4.79	3.67	2.97	2.49	1.89	1.52
	y		29°5'	22°39'	15°33'	12°50'	10°53'	7°55'	6°30'	5°29'	4°46'	3°45'	3°6'
	$\eta_{d\ (n1=1400r/min)}$		0.89	0.88	0.85	0.83	0.81	0.78	0.74	0.71	0.68	0.63	0.59
	η_s		0.72	0.69	0.63	0.59	0.56	0.49	0.44	0.41	0.37	0.32	0.28
MRV110	Z_1		4	3	2	2	2	1	1	1	1	1	1
	m_n		5.18	5.45	5.67	4.47	3.64	5.82	4.58	3.71	3.12	2.36	1.91
	y		28°15'	21°57'	15°2'	14°42'	12°33'	7°39'	7°29'	6°21'	5°33'	4°27'	3°46'
	$\eta_{d\ (n1=1400r/min)}$		0.89	0.88	0.86	0.85	0.83	0.79	0.77	0.74	0.72	0.67	0.63
	η_s		0.72	0.69	0.62	0.62	0.59	0.48	0.48	0.44	0.41	0.36	0.32
MRV130	Z_1		4	4	2	2	2	1	1	1	1	1	1
	m_n		7	5.4	7	5.4	4.37	7	5.4	4.37	3.68	2.75	2.24
	y		28°46'	26°15'	15°21'	13°51'	11°49'	7°48'	7°01'	5°58'	5°12'	4°05'	3°25'
	$\eta_{d\ (n1=1400r/min)}$		0.9	0.88	0.86	0.85	0.83	0.79	0.77	0.74	0.71	0.67	0.63
	η_s		0.71	0.68	0.62	0.6	0.57	0.49	0.46	0.43	0.39	0.34	0.3
MRV150	Z_1		6	4	3	2	2	2	1	1	1	1	1
	m_n		5.5	6.155	5.5	6.155	5	4.193	6.155	5	4.193	3.17	2.55
	y		32°09'	24°35'	17°27'	12°53'	11°21'	9°50'	6°32'	5°43'	4°57'	3°55'	3°14'
	$\eta_{d\ (n1=1400r/min)}$		0.91	0.9	0.88	0.86	0.84	0.83	0.78	0.76	0.73	0.68	0.64
	η_s		0.73	0.71	0.66	0.6	0.57	0.54	0.45	0.42	0.39	0.33	0.29

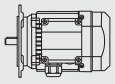
7. PERFORMANCE PARAMETERS

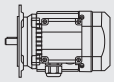
7.1 MWM..(IEC)../Performance parameter

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s				Page
	186.7	2.6	7.5	503	4.2	**YNRV025**	**56B14**	**5614**	**60**
0.06	140	3.4	10	553	3.5				
	93.3	4.9	15	633	2.5				
	70	6.2	20	697	1.9				
	56	7.5	25	751	1.7				
	46.7	8.3	30	798	1.6				
	35	10	40	878	1.2				
	28	12	50	946	0.9				
	23.3	14	60	1006	0.73				
	280	1.8	5	597	10.1	**MWM030**	**56B5/B14**	**5614**	**61**
	186.7	2.6	7.5	683	7.0				
	140	3.3	10	752	5.4				
	93.3	4.7	15	861	3.9				
	70	5.9	20	948	3.1				
	56	6.8	25	1021	3.1				
	46.7	7.9	30	1085	2.5				
	35	9.7	40	1194	1.9				
	28	11	50	1286	1.5				
	23.3	12	60	1367	1.3				
	17.5	14	80	1504	0.9				
	14	16	100	1618	0.75				
	28	13	50	2475	3.3	**MWM040**	**56B5**	**5614**	**62**
	23.3	14	60	2630	2.6				
	17.5	17	80	2895	1.9				
	14	20	100	3118	1.5				
	373.3	2.0	7.5	399	3.9	**YNRV025**	**56B14**	**5612**	**60**
0.09	280	2.6	10	439	3.4				
	186.7	3.8	15	503	2.4				
	140	4.9	20	553	1.8				
	112	5.9	25	590	1.5				
	93.3	6.7	30	633	1.3				
	70	8.5	40	697	1.1				
	56	10	50	751	0.9				
	46.7	11	60	798	0.7				
	186.7	3.9	7.5	503	2.8	**YNRV025**	**56B14**	**5624**	**60**
	140	5.1	10	553	2.4				
	93.3	7.3	15	633	1.6				
	70	9.3	20	697	1.3				
	56	11	25	751	1.2				
	46.7	13	30	798	1.0				
	35	16	40	878	0.8				
	560	1.4	5	474	8.8	**MWM030**	**56B5/B14**	**5612**	**61**
	373.3	2.0	7.5	542	6.5				
	280	2.6	10	597	5.0				
	186.7	3.7	15	683	3.5				
	140	4.7	20	752	2.5				
	112	5.5	25	810	2.9				
	93.3	6.4	30	861	2.3				
	70	8.0	40	948	1.8				
	56	9.4	50	1021	1.4				
	46.7	10.5	60	1085	1.1				
	35	12.5	80	1194	0.9				
	28	14.0	100	1281	0.85				

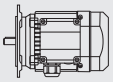
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
0.09	280	2.7	5	597	6.7	**MWM030**	**56B5/B14**	**5624**	**61**
	186.7	3.9	7.5	683	4.7				
	140	5.0	10	752	3.6				
	93.3	7.0	15	861	2.6				
	70	8.8	20	948	2.0				
	56	10	25	1021	2.1				
	46.7	12	30	1085	1.7				
	35	14	40	1194	1.2				
	28	17	50	1286	1.0				
	23.3	18	60	1367	0.9				
	180	4.0	5	692	4.9	**MWM030**	**56B5/B14**	**6316**	**61**
	120	6.0	7,5	792	3.5				
	90	8.0	10	871	2.7				
	60	11	15	997	2.0				
	45	14	20	1098	1.5				
	36	16	25	1183	1.5				
	30	18	30	1257	1.2				
	22.5	21	40	1383	1.0				
	18	25	50	1490	0.8				
	56	11	50	1964	2.8	**MWM040**	**56B5**	**5612**	**62**
	46.7	12	60	2087	2.3				
	35	15	80	2298	1.7				
	28	17	100	2475	1.4				
	28	19	50	2475	2.1	**MWM040**	**56B5**	**5624**	**62**
	23.3	21	60	2630	1.7				
	17.5	25	80	2895	1.3				
	14	29	100	3118	1.0				
	45	15	20	2113	3.3	**MWM040**	**63B5/B14**	**6316**	**62**
	36	17	25	2276	2.6				
	30	19	30	2419	2.8				
	22.5	24	40	2662	2.1				
	18	28	50	2868	1.7				
	15	32	60	3047	1.3				
	11.3	37	B0	3354	0.9				
	9	42	100	3490	0.8				
	18	29	50	3936	2.8	**MWM050**	**63B5**	**6316**	**63**
	15	32	60	4183	2.4				
	11.3	38	80	4604	1.8				
	9	43	100	4840	1.3				
0.12	373.3	2.7	7.5	399	3.0	**YNRV025**	**56B14**	**5622**	**60**
	280	3.5	10	439	2.6				
	186.7	5.1	15	503	1.8				
	140	6.5	20	553	1.4				
	112	7.9	25	590	1.1				
	93.3	9.0	30	633	1.0				
	70	11	40	697	0.8				
	186.7	5.0	15	683	2.6	**MWM030**	**56B5/B14**	**5622**	**61**
	140	6.0	20	752	1.9				
	112	8.0	25	810	2.1				
	93.3	9.0	30	861	1.7				
	70	11	40	948	1.3				
	56	13	50	1021	1.0				
	46.7	14	60	1085	0.8				
	280	3.6	5	597	5.1	**MWM030**	**63B5/B14**	**6314**	**61**
	186.7	5.2	7.5	683	3.5				
	140	6.6	10	752	2.7				
	93.3	9.3	15	861	1.9				

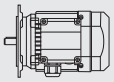
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
0.12	70	12	20	948	1.5	**MWM030**	**63B5/B14**	**6314**	**61**
	56	14	25	1021	1.6				
	46.7	16	30	1085	1.3				
	35	19	40	1194	0.9				
	28	22	50	1286	0.8				
	180	5.4	5	692	3.7	**MWM030**	**63B5/B14**	**6326**	**61**
	120	8.0	7,5	792	2.6				
	90	10	10	871	2.0				
	60	14	15	997	1.5				
	45	18	20	1098	1.1				
	36	21	25	1183	1.2				
	30	24	30	1257	0.9				
	22.5	29	40	1383	0.7				
	56	14	50	1964	2.1	**MWM040**	**56B5**	**5622**	**62**
	46.7	16	60	2087	1.7				
	35	20	80	2298	1.3				
	28	23	100	2475	1.0				
	70	13	20	1824	3.3	**MWM040**	**63B5/B14**	**6314**	**62**
	56	16	25	1964	2.5				
	46.7	17	30	2087	2.7				
	35	21	40	2298	1.9				
	28	25	50	2475	1.6				
	23.3	28	60	2630	1.3				
	17.5	33	80	2895	1.0				
	14	38	100	3118	0.8				
	60	15	15	1920	3.3	**MWM040**	**63B5/B14**	**6326**	**62**
	45	19	20	2113	2.5				
	36	23	25	2276	1.9				
	30	26	30	2419	2.1				
	22.5	32	40	2662	1.6				
	18	37	50	2868	1.2				
	15	42	60	3047	1.0				
	11.3	50	B0	3354	0.7				
	28	26	50	3397	2.9	**MWM050**	**63B5**	**6314**	**63**
	23.3	29	60	3610	2.3				
	17.5	35	80	3973	1.9				
	14	39	100	4280	1.4				
	22.5	33	40	3654	2.7	**MWM050**	**63B5/B14**	**6326**	**61**
	18	38	50	3936	2.1				
	15	43	60	4183	1.8				
	11.3	51	80	4604	1.3				
	9	57	100	4840	1.0				
0.18	560	2.7	5	474	4.4	**MWM030**	**63B5/B14**	**6312**	**61**
	373.3	4.0	7.5	542	3.2				
	280	5.2	10	597	2.5				
	186.7	7.4	15	683	1.8				
	140	9.5	20	752	1.3				
	112	11	25	810	1.4				
	93.3	13	30	861	1.2				
	70	16	40	948	0.9				
	280	5.3	5	597	3.4	**MWM030**	**63B5/B14**	**6324**	**61**
	186.7	7.7	7.5	683	2.3				
	140	10	10	752	1.8				
	93.3	14	15	861	1.3				
	70	18	20	948	1.0				
	56	20	25	1021	1.0				
	46.7	24	30	1085	0.8				

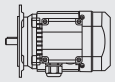
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s				Page
0.18	140	10	20	1447	2.8	**MWM040**	**63B5/B14**	**6312**	**62**
	112	12	25	1559	2.3				
	93.3	14	30	1657	2.5				
	70	17	40	1824	1.8				
	56	21	50	1964	1.4				
	46.7	24	60	2087	1.2				
	35	29	B0	2298	0.8				
	93.3	15	15	1657	2.9	**MWM040**	**63B5/B14**	**6324**	**62**
	70	19	20	1824	2.1				
	56	23	25	1964	1.7				
	46.7	25	30	2087	1.8				
	35	32	40	2298	1.3				
	28	37	50	2475	1.0				
	23.3	42	60	2630	0.9				
	90	16	10	1677	3.0	**MWM040**	**71B5/B14**	**7116**	**62**
	60	23	15	1920	2.2				
	45	28	20	2113	1.8				
	36	34	25	2276	1.3				
	30	38	30	2419	1.3				
	22.5	47	40	2662	1.0				
	70	18	40	2503	3.2	**MWM050**	**63B5**	**6312**	**63**
	56	21	50	2696	2.5				
	46.7	24	60	2865	2.1				
	35	30	B0	3153	1.5				
	28	34	100	3397	1.2				
	35	33	40	3153	2.3	**MWM050**	**63B5**	**6324**	**63**
	28	39	50	3397	1.9				
	23.3	43	60	3610	1.8				
	17.5	52	B0	3973	1.2				
	14	59	100	4280	0.9				
	45	29	20	2900	2.8	**MWM050**	**71B5/B14**	**7116**	**63**
	36	35	25	3124	2.1				
	30	40	30	3320	2.4				
	22.5	49	40	3654	1.8				
	18	56	50	3936	1.4				
	15	63	60	4183	1.1				
	11.3	75	B0	4604	0.9				
	22.5	50	40	4776	3.4	**MWM063**	**71B5/B14**	**7116**	**64**
	18	59	50	5145	2.7				
	15	66	60	5467	2.1				
	11.3	79	B0	6018	1.8				
	9	90	100	6270	1.4				
	15	66	60	5467	2.1	**MWM075**	**71B5**	**7116**	**65**
	11.3	79	B0	6018	1.8				
	9	90	100	6270	1.4				
0.25	560	3.8	5	474	3.2	**MWM030**	**63B5/B14**	**6322**	**61**
	373.3	5.6	7.5	542	2.3				
	280	7.2	10	597	1.8				
	186.7	10	15	683	1.3				
	140	13	20	752	0.9				
	112	15	25	810	1.0				
	93.3	18	30	861	0.8				
	186.7	11	15	1315	2.9	**MWM040**	**63B5/B14**	**6322**	**62**
	140	14	20	1447	2.0				
	112	17	25	1559	1.8				
	93.3	20	30	1657	1.7				
	70	25	40	1824	1.2				
	56	29	50	1964	1.0				
	46.7	34	60	2087	0.8				

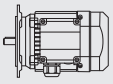
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_S			Page
0.25	280	7.6	5	1149	4.5	**MWM040**	**71B5/B14**	**7114**	**62**
	186.7	11	7.5	1315	3.6			
	140	15	10	1447	3.0			
	93.3	21	15	1657	2.1			
	70	27	20	1824	1.6			
	56	32	25	1964	1.2			
	46.7	36	30	2087	1.3			
	35	45	40	2298	1.0			
	180	11.5	5	1331	3.5	**MWM040**	**71B5/B14**	**7126**	**62**
	120	17	7.5	1524	2.6			
	90	22	10	1677	2.0			
	60	31	15	1920	1.4			
	45	39	20	2113	1.1			
	36	48	25	2276	0.9			
	30	53	30	2419	0.9			
	22.5	67	40	2662	0.7			
	70	25	40	2503	2.3	**MWM050**	**63B5/B14**	**6322**	**63**
	56	30	50	2696	1.8			
	46.7	34	60	2865	1.5			
	35	42	80	3153	1.1			
	28	48	100	3397	0.8			
	70	27	20	2503	2.7	**MWM050**	**71B5/B14**	**7114**	**63**
	56	32	25	2696	2.2			
	46.7	36	30	2865	2.3			
	35	46	40	3153	1.7			
	28	54	50	3397	1.4			
	23.3	60	60	3610	1.1			
	17.5	72	80	3973	0.9			
	60	32	15	2635	2.9	**MWM050**	**71B5/B14**	**7126**	**63**
	45	40	20	2900	1.9			
	36	48	25	3124	1.5			
	30	54	30	3320	1.7			
	22.5	67	40	3654	1.2			
	18	78	50	3936	1.0			
	15	88	60	4183	0.8			
	35	48	40	4122	3.1	**MWM063**	**71B5/B14**	**7114**	**64**
	28	55	50	4440	2.4			
	23.3	63	60	4719	2.0			
	17.5	76	80	5193	1.6			
	14	87	100	5595	1.4			
	36	50	25	4084	3.0	**MWM063**	**71B5/B14**	**7116**	**64**
	30	57	30	4339	3.1			
	22.5	70	40	4776	2.4			
	18	81	50	5145	1.8			
	15	92	60	5467	1.5			
	11.3	110	80	6018	1.2			
	9	125	100	6270	1.0			
	23.3	68	60	5569	3.2	**MWM075**	**71B5**	**7114**	**65**
	17.5	80	80	6130	2.4			
	14	94	100	6603	1.9			
	18	85	50	6073	3.0	**MWM075**	**71B5**	**7126**	**65**
	15	99	60	6453	2.5			
	11.3	117	80	7103	1.7			
	9	133	100	7380	1.4			

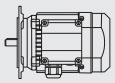
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_S				Page
	560	5.7	5	912	4.2	**MWM040**	**71B5/B14**	**7112**	**62**
0.37	373.3	8.0	7.5	1044	3.4				
	280	11	10	1149	2.8				
	186.7	16	15	1315	1.9				
	140	20	20	1447	1.4				
	112	25	25	1559	1.1				
	93.3	29	30	1657	1.2				
	70	37	40	1824	0.8				
	280	11	5	1149	3.0	**MWM040**	**71B5/B14**	**7124**	**62**
	186.7	16	7.5	1315	2.5				
	140	21	10	1447	2.1				
	93.3	31	15	1657	1.4				
	70	40	20	1824	1.1				
	56	48	25	1964	0.8				
	46.7	54	30	2087	0.9				
	112	25	25	2140	2.0	**MWM050**	**71B5/B14**	**7112**	**63**
	93.3	29	30	2274	2.2				
	70	37	40	2503	1.8				
	56	44	50	2696	1.2				
	46.7	50	60	2865	1.0				
	35	62	80	3153	0.7				
	140	21	10	1987	3.4	**MWM050**	**71B5/B14**	**7124**	**63**
	93.3	31	15	2274	2.4				
	70	39	20	2503	1.9				
	56	47	25	2696	1.5				
	46.7	54	30	2865	1.8				
	35	68	40	3153	1.1				
	28	80	50	3397	0.9				
	23.3	89	60	3610	0.8				
	180	17	5	1827	4.3	**MWM050**	**80B5/B14**	**8016**	**63**
	120	25	7.5	2091	3.4				
	90	33	10	2302	2.8				
	60	47	15	2635	1.8				
	45	59	20	2900	1.3				
	36	72	25	3124	1.0				
	30	80	30	3320	1.1				
	70	38	40	3272	2.9	**MWM063**	**71B5/B14**	**7112**	**64**
	56	45	50	3524	2.3				
	46.7	52	60	3745	1.9				
	35	65	80	4122	1.4				
	28	74	100	4440	1.1				
	56	50	25	3524	2.7	**MWM063**	**71B5/B14**	**7124**	**64**
	46.7	57	30	3745	2.8				
	35	70	40	4122	2.1				
	28	82	50	4440	1.8				
	23.3	94	60	4719	1.4				
	17.5	113	B0	5193	1.1				
	14	129	100	5595	0.9				
	45	60	20	3791	2.4	**MWM063**	**80B5/B14**	**8016**	**64**
	36	73	25	4084	1.9				
	30	82	30	4339	2.1				
	22.5	102	40	4776	1.8				
	18	120	50	5145	1.2				
	15	137	60	5467	1.0				
	11.3	167	80	6018	0.8				

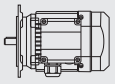
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
0.37	56	47	50	4160	3.5	**MWM075**	**71B5**	**7112**	**65**
	46.7	55	60	4421	2.9			
	35	68	80	4865	2.1			
	28	78	100	5241	1.7			
	35	74	40	4865	3.3	**MWM075**	**71B5**	**7124**	**65**
	28	88	50	5241	2.5			
	23.3	97	60	5569	2.1			
	17.5	119	80	6130	1.6			
	14	139	100	6603	1.3			
	36	77	25	4820	3.1	**MWM075**	**80B5/B14**	**8016**	**65**
	30	87	30	5122	3.3			
	22.5	108	40	5637	2.6			
	18	124	50	6073	1.8			
	15	141	60	6453	1.5			
	11.3	173	80	7103	1.2			
	9	196	100	7380	1.0			
	18	136	50	6719	3.2	**MWM090**	**80B5/B14**	**8016**	**66**
	15	153	60	7140	2.5			
	11.3	185	80	7859	1.7			
	9	212	100	8180	1.3			
	11.3	201	80	9931	2.8	**MWM 110**	**80B5**	**8016**	**67**
	9	232	100	10320	2.2			
0.55	560	8.4	5	912	2.8	**MWM040**	**71B5/B14**	**7122**	**62**
	373.3	12	7.5	1044	2.3			
	280	16	10	1149	1.8			
	186.7	24	15	1315	1.3			
	140	30	20	1447	1.0			
	112	37	25	1559	0.8			
	93.3	43	30	1657	0.8			
	280	16.7	10	1577	3.2	**MWM050**	**71B5/B14**	**7122**	**63**
	186.7	24	15	18.5	2.4			
	140	31	20	1987	1.7			
	112	38	25	2140	1.4			
	93.3	43	30	2274	1.5			
	70	55	40	2503	1.1			
	56	65	50	2696	0.8			
	46.7	74	60	2865	0.7			
	280	16.7	5	1577	3.7	**MWM050**	**80B5/B14**	**8014**	**63**
	186.7	24	7.5	1805	2.9			
	140	32	10	1987	2.3			
	93.3	46	15	2274	1.6			
	70	59	20	2503	1.2			
	56	70	25	2696	1.0			
	46.7	80	30	2865	1.1			
	180	26	5	1827	3.2	**MWM050**	**80B5/B14**	**8026**	**63**
	120	37	7.5	2091	2.3			
	90	48	10	2302	1.7			
	60	69	15	2635	1.2			
	45	88	20	2900	0.9			
	36	108	25	3124	0.7			
	30	121	30	3320	0.8			
	140	32	20	2597	3.3	**MWM063**	**71B5/B14**	**7122**	**64**
	112	39	25	2797	2.5			
	93.3	44	30	2973	2.7			
	70	56	40	3272	1.9			
	56	68	50	3524	1.5			
	46.7	78	60	3745	1.2			
	35	96	80	4122	0.9			
	28	111	100	4440	0.7			

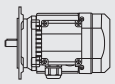
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_S			Page
0.55	93.3	47	15	2973	3.2	**MWM063**	**80B5/B14**	**8014**	**64**
	70	60	20	3272	2.2			
	56	72	25	3524	1.8			
	46.7	82	30	3745	1.9			
	35	104	40	4122	1.4			
	28	122	50	4440	1.1			
	23.3	140	60	4719	0.9			
	17.5	174	80	5193	0.7			
	90	50	10	3009	3.1	**MWM063**	**80B5/B14**	**8026**	**64**
	60	70	15	3444	2.2			
	45	90	20	3791	1.8			
	36	108	25	4084	1.3			
	30	123	30	4339	1.4			
	22.5	152	40	4776	1.1			
	18	181	50	5145	0.9			
	15	207	60	5467	0.7			
	70	59	40	3862	3.1	**MWM075**	**71B5**	**7122**	**65**
	56	70	50	4160	2.3			
	46.7	81	60	4421	2.0			
	35	99	80	4865	1.3			
	28	116	100	5241	1.0			
	56	76	25	4160	2.8	**MWM075**	**80B5/B14**	**8014**	**65**
	46.7	87	30	4421	2.9			
	35	108	40	4865	2.0			
	28	128	50	5241	1.8			
	23.3	144	60	5569	1.4			
	17.5	177	80	6130	1.1			
	14	206	100	6603	0.9			
	45	93	20	4474	2.9	**MWM075**	**80B5/B14**	**8026**	**65**
	36	124	25	4820	2.1			
	30	124	30	5122	2.1			
	22.5	156	40	5637	1.5			
	18	184	50	6073	1.2			
	15	210	60	6453	1.0			
	11.3	262	80	7103	0.8			
	35	114	40	5383	3.5	**MWM090**	**80B5/B14**	**8014**	**66**
	28	137	50	5799	2.7			
	23.3	158	60	6163	2.2			
	17.5	189	80	6783	1.5			
	14	221	100	7306	1.2			
	36	117	25	5333	3.5	**MWM090**	**80B5/B14**	**8026**	**66**
	22.5	168	40	6238	2.7			
	18	196	50	6719	2.0			
	15	224	60	7140	1.8			
	11.3	275	80	7859	1.1			
	9	315	100	8180	0.9			
	17.5	201	80	8571	2.8	**MWM110**	**80B5**	**8014**	**67**
	14	236	100	9232	2.0			
	15	242	60	9023	2.8	**MWM110**	**80B5**	**8026**	**67**
	11.3	294	80	9931	1.9			
	9	344	100	10320	1.5			
0.75	560	11.6	5	1251	3.9	**MWM050**	**80B5/B14**	**8012**	**63**
	373.3	17	7.5	1433	3.0			
	280	22	10	1577	2.4			
	186.7	31	15	1805	1.7			
	140	41	20	1987	1.3			
	112	49	25	2140	1.0			
	93.3	56	30	2274	1.1			

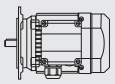
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
	280	22.8	5	1577	2.7	**MWM050**	**80B5/B14**	**8024**	**63**
0.75	186.7	33	7.5	1805	2.1			
	140	43	10	1987	1.7			
	93.3	62	15	2274	1.2			
	70	80	20	2503	0.9			
	56	99	25	2696	0.7			
	46.7	112	30	2865	0.8			
	186.7	33	15	2359	3.3	**MWM063**	**80B5/B14**	**8012**	**64**
	140	43	20	2597	2.3			
	112	52	25	2797	1.8			
	93.3	60	30	2973	2.0			
	70	77	40	3272	1.4			
	56	92	50	3524	1.1			
	46.7	106	60	3745	0.9			
	140	45	10	2597	3.0	**MWM063**	**80B5/B14**	**8024**	**64**
	93.3	63	15	2973	2.2			
	70	82	20	3272	1.8			
	56	98	25	3524	1.3			
	46.7	112	30	3745	1.4			
	35	141	40	4122	1.0			
	28	171	50	4440	0.8			
	120	51	7.5	2734	2.9	**MWM063**	**90B5/B14**	**90S6**	**64**
	90	67	10	3009	2.3			
	60	96	15	3444	1.8			
	45	123	20	3791	1.2			
	36	147	25	4084	0.9			
	30	167	30	4339	1.0			
	22.5	210	40	4776	0.8			
	112	54	25	3302	2.9	**MWM075**	**80B5/B14**	**8012**	**65**
	93.3	62	30	3509	3.0			
	70	80	40	3862	2.3			
	56	96	50	4160	1.7			
	46.7	107	60	4421	1.3			
	35	135	80	4865	1.0			
	28	159	100	5241	0.8			
	93.3	66	15	3509	3.5	**MWM075**	**80B5/B14**	**8024**	**65**
	70	85	20	3862	2.8			
	56	101	25	4160	2.0			
	46.7	117	30	4421	2.0			
	35	147	40	4865	1.5			
	28	174	50	5241	1.2			
	23.3	196	60	5569	1.0			
	17.5	250	B0	6130	0.8			
	90	68	10	3551	3.4	**MWM075**	**90B5/B14**	**90S6**	**65**
	60	97	15	4065	2.4			
	45	124	20	4474	1.9			
	36	149	25	4820	1.4			
	30	170	30	5122	1.5			
	22.5	213	40	5637	1.1			
	18	255	50	6073	1.0			
	15	296	60	6453	0.8			
	70	82	40	4273	3.4	**MWM090**	**80B5/B14**	**8012**	**66**
	56	99	50	4603	2.7			
	46.7	115	60	4891	2.1			
	35	143	B0	5383	1.8			
	28	169	100	5799	1.2			

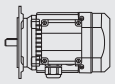
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
0.75	35	156	40	5383	2.5	**MWM090**	**80B5/B14**	**8024**	**66**
	28	182	50	5799	1.9			
	23.3	209	60	6163	1.5			
	17.5	258	B0	6783	1.1			
	14	302	100	7306	0.9			
	45	131	20	4951	3.3	**MWM090**	**90B5/B14**	**90S6**	**66**
	36	159	25	5333	2.6			
	30	179	30	5667	2.6			
	22.5	226	40	6238	1.8			
	18	267	50	6719	1.5			
	15	306	60	7140	1.1			
	35	152	B0	6803	2.6	**MWM110**	**80B5**	**8012**	**67**
	28	179	100	7328	2.1			
	28	194	50	7328	3.4	**MWM110**	**80B5**	**90S6**	**67**
	23.3	227	60	7787	2.7			
	17.5	274	B0	8571	1.9			
	14	322	100	9232	1.5			
	22.5	239	40	7882	3.3	**MWM110**	**90B5**	**90S6**	**67**
	18	287	50	8491	2.6			
	15	325	60	9023	1.9			
	11.3	401	80	9931	1.3			
	9	470	100	10320	1.0			
1.1	560	17.1	5	1251	2.6	**MWM050**	**80B5/B14**	**8022**	**63**
	373.3	25	7.5	1433	2.1			
	280	33	10	1577	1.7			
	186.7	48	15	1805	1.2			
	140	62	20	1987	0.9			
	93.3	87	30	2274	0.7			
	280	33	10	2061	3.0	**MWM063**	**80B5/B14**	**8022**	**64**
	186.7	46	15	2359	2.1			
	140	60	20	2597	1.6			
	112	72	25	2797	1.2			
	93.3	82	30	2973	1.4			
	70	104	40	3272	1.0			
	120	75	7.5	2734	2.0	**MWM063**	**90B5/B14**	**90L6**	**64**
	90	98	10	3009	1.6			
	60	140	15	3444	1.1			
	45	180	20	3791	0.8			
	30	249	30	4339	0.7			
	186.7	50	7.5	2359	2.6	**MWM063**	**90B5/B14**	**90S4**	**64**
	140	65	10	2597	2.0			
	93.3	92	15	2973	1.5			
	70	120	20	3272	1.1			
	56	144	25	3524	0.9			
	46.7	164	30	3745	1.0			
	186.7	50	15	2785	3.3	**MWM075**	**80B5/B14**	**8022**	**65**
	140	65	20	3065	2.7			
	112	77	25	3302	2.0			
	93.3	89	30	3509	1.9			
	70	114	40	3862	1.4			
	56	137	50	4160	1.1			
	46.7	158	60	4421	0.9			
	35	201	80	4865	0.7			

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
1.1	120	77	7.5	3227	2.8	**MWM075**	**90B5/B14**	**90L6**	**65**
	90	98	10	3551	2.3			
	60	142	15	4065	1.7			
	45	182	20	4474	1.3			
	36	219	25	4820	1.0			
	30	249	30	5122	1.0			
	22.5	322	40	5637	0.9			
	140	66	10	3065	3.0	**MWM075**	**90B5/B14**	**90S4**	**65**
	93.3	95	15	3509	2.1			
	70	122	20	3862	1.7			
	56	148	25	4160	1.3			
	46.7	171	30	4421	1.3			
	35	216	40	4865	1.0			
	28	263	50	5241	0.9			
	23.3	297	60	5569	0.7			
	112	81	25	3653	3.1	**MWM090**	**80B5/B14**	**8022**	**66**
	93.3	93	30	3882	3.3			
	70	120	40	4273	2.3			
	56	145	50	4603	1.8			
	46.7	169	60	4891	1.5			
	35	210	80	5383	1.1			
	28	248	100	5799	0.8			
	60	149	15	4498	3.1	**MWM090**	**90B5/B14**	**90L6**	**66**
	45	192	20	4951	2.2			
	36	228	25	5333	1.6			
	30	263	30	5667	1.8			
	22.5	331	40	6238	1.2			
	18	391	50	6719	1.0			
	15	448	60	7140	0.8			
	70	128	20	4273	3.1	**MWM090**	**90B5/B14**	**90S4**	**66**
	56	156	25	4603	2.4			
	46.7	178	30	4891	2.4			
	35	222	40	5383	1.6			
	28	266	50	5799	1.3			
	23.3	306	60	6163	1.0			
	17.5	384	80	6783	0.7			
	56	150	50	5816	3.3	**MWM110**	**80B5**	**8022**	**67**
	46.7	176	60	6181	2.7			
	35	222	80	6803	1.8			
	28	263	100	7328	1.4			
	36	239	25	6739	3.2	**MWM110**	**90B5**	**90L6**	**67**
	30	270	30	7161	3.1			
	22.5	345	40	7882	2.3			
	18	414	50	8491	1.8			
	15	476	60	9023	1.4			
	11.3	588	80	9931	1.0			
	9	689	100	10320	0.7			
	35	237	40	6803	3.0	**MWM110**	**90B5**	**90S4**	**67**
	28	278	50	7328	2.4			
	23.3	324	60	7787	1.9			
	17.5	402	80	8571	1.3			
	14	473	100	9232	1.0			

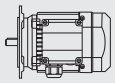
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_S			Page
1.5	560	23	5	1251	1.9	**MWM050**	**80B5/B14**	**80C2**	**63**
	373.3	34	7.5	1433	1.5				
	280	45	10	1577	1.2				
	186.7	65	15	1805	0.9				
	186.7	68	7.5	2359	1.9	**MWM063**	**90B5/B14**	**90L4**	**64**
	140	88	10	2597	1.5				
	93.3	126	15	2973	1.1				
	70	164	20	3272	0.8				
	373.3	35	7.5	1873	2.7	**MWM063**	**90B5/B14**	**90S2**	**64**
	280	45	10	2081	2.2				
	186.7	66	15	2359	1.8				
	140	86	20	2597	1.2				
	112	105	25	2797	0.9				
	93.3	120	30	2973	1.0				
	70	156	40	3272	0.7				
	120	103	7.5	3227	2.1	**MWM075**	**100B5/B14**	**100L6**	**65**
	90	134	10	3551	1.7				
	60	193	15	4085	1.2				
	45	255	20	4474	1.1				
	36	311	25	4820	0.8				
	30	354	30	5122	0.8				
	280	45	10	2433	3.2	**MWM075**	**90B5/B14**	**90S2**	**65**
	186.7	66	15	2785	2.3				
	140	86	20	3085	1.9				
	112	105	25	3302	1.4				
	93.3	121	30	3509	1.4				
	70	156	40	3882	1.1				
	56	187	50	4180	1.3				
	46.7	215	60	4421	1.1				
	186.7	68	7.5	2785	2.7	**MWM075**	**90B5/B14**	**90L4**	**65**
	140	89	10	3085	2.2				
	93.3	129	15	3509	1.8				
	70	166	20	3882	1.3				
	56	202	25	4180	1.0				
	46.7	233	30	4421	1.0				
	35	299	0.8	4885	0.8				
	90	137	10	3929	2.7	**MWM090**	**100B5/B14**	**100L6**	**66**
	60	198	15	4498	2.1				
	45	258	20	4951	1.5				
	36	310	25	5333	1.2				
	30	358	30	5887	1.3				
	22.5	459	40	8238	1.0				
	93.3	134	15	3882	3.0	**MWM090**	**90B5/B14**	**90L4**	**66**
	70	170	20	4273	2.1				
	56	207	25	4803	1.8				
	46.7	239	30	4891	1.7				
	35	303	40	5383	1.2				
	28	363	50	5799	0.9				
	23.3	417	60	8183	0.8				
	140	90	20	3391	2.9	**MWM090**	**90B5/B14**	**90S2**	**66**
	112	110	25	3853	2.3				
	93.3	127	30	3882	2.4				
	70	164	40	4273	1.7				
	56	197	50	4803	1.3				
	46.7	227	60	4891	1.1				
	35	287	80	5383	0.8				

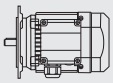
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
1.5	45	264	20	6256	2.7	**MWM110**	**100B5**	**100L6**	**67**
	36	322	25	6739	2.4				
	30	363	30	7161	2.3				
	22.5	471	40	7882	1.7				
	18	565	50	8491	1.3				
	15	649	60	9023	1.1				
	56	218	25	5816	3.1	**MWM110**	**90B5**	**90L4**	**67**
	46.7	246	30	6181	3.0				
	35	315	40	6803	2.2				
	28	379	50	7328	1.7				
	23.3	442	60	7787	1.4				
	17.5	548	80	8571	0.9				
	14	655	100	9232	0.7				
	70	170	40	5399	3.1	**MWM110**	**90B5**	**90S2**	**67**
	56	205	50	5816	2.4				
	46.7	236	60	6181	2.0				
	35	299	80	6803	1.3				
	28	358	100	7328	1.0				
2.2	373.3	51	7.5	1873	1.8	**MWM063**	**90B5/B14**	**90L2**	**64**
	280	66	10	2061	1.5				
	186.7	97	15	2359	1.1				
	140	128	20	2597	0.8				
	186.7	99	7.5	2785	1.9	**MWM075**	**100B5/B14**	**100LA4**	**65**
	140	131	10	3065	1.5				
	93.3	189	15	3509	1.1				
	70	249	20	3862	0.9				
	56	304	25	4160	0.7				
	46.7	347	30	4421	0.7				
	120	154	7,5	3227	1.4	**MWM075**	**112B5/B14**	**112M6**	**65**
	90	201	10	3551	1.1				
	60	291	15	4065	0.9				
	45	374	20	4474	0.7				
	373.3	50	7.5	2210	2.6	**MWM075**	**90B5/B14**	**90L2**	**65**
	280	66	10	2433	2.2				
	186.7	97	15	2785	1.5				
	140	126	20	3065	1.3				
	120	154	25	3302	1.0				
	93.3	178	30	3509	1.0				
	70	234	40	3862	0.8				
	186.7	100	7.5	3081	2.9	**MWM090**	**100B5/B14**	**100LA4**	**66**
	140	132	10	3391	2.3				
	93.3	191	15	3882	1.9				
	70	249	20	4273	1.4				
	56	304	25	4603	1.1				
	46.7	351	30	4891	1.2				
	30	456	40	5383	0.9				
	120	154	7.5	3570	2.2	**MWM090**	**112B5/B14**	**112M6**	**66**
	90	201	10	3929	1.8				
	60	291	15	4498	1.4				
	45	378	20	4951	1.0				
	36	467	25	5333	0.9				
	45	532	30	5667	0.9				
	280	68	10	2692	3.5	**MWM090**	**90B5/B14**	**90L2**	**66**
	186.7	100	15	3081	2.7				
	140	129	20	3391	2.0				
	112	159	25	3653	1.6				
	93.3	185	30	3882	1.7				
	70	237	40	4273	1.2				
	56	289	50	4603	0.9				

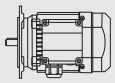
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
2.2	93.3	196	15	49.5	3.3	**MWM110**	**100B5**	**100LA4**	**67**
	70	255	20	5399	2.2				
	56	311	25	5816	2.2				
	46.7	356	30	6181	2.0				
	35	462	40	6803	1.5				
	28	555	50	7328	1.2				
	23.3	648	60	7787	1.0				
	90	203	10	4965	3.5	**MWM110**	**112B5**	**112M6**	**67**
	60	294	15	5684	2.6				
	45	388	20	6256	1.9				
	36	473	25	6739	1.6				
	30	532	30	7161	1.6				
	22.5	701	40	7882	1.1				
	18	841	50	8491	0.9				
	15	967	60	9023	0.7				
	112	161	25	4616	3.1	**MWM110**	**90B5**	**90L2**	**67**
	93.3	187	30	4905	3.0				
	70	243	40	5399	2.2				
	56	296	50	5816	1.7				
	46.7	347	60	6181	1.4				
	35	444	80	6803	0.9				
	28	525	100	7328	0.7				
3.0	373.3	68	7.5	2210	1.9	**MWM075**	**100B5/B14**	**100L2**	**65**
	280	90	10	2433	1.6				
	186.7	135	15	2785	1.2				
	140	176	20	3065	1.0				
	112	215	25	3302	0.7				
	93.3	249	30	3509	0.7				
	186.7	135	7.5	2785	1.4	**MWM075**	**100B5/B14**	**100LB4**	**65**
	140	178	10	3065	1.1				
	93.3	258	15	3509	0.8				
	373.3	70	7.5	2446	3.0	**MWM090**	**100B5/B14**	**100L2**	**66**
	280	92	10	2692	2.6				
	186.7	137	15	3081	2.0				
	140	180	20	3391	1.4				
	112	220	25	3653	1.1				
	93.3	255	30	3882	1.2				
	70	328	40	4273	0.8				
	186.7	137	7.5	3081	2.1	**MWM090**	**100B5/B14**	**100LB4**	**66**
	140	180	10	3391	1.7				
	93.3	261	15	3882	1.4				
	70	340	20	4273	1.0				
	56	414	25	4603	0.8				
	46.7	479	30	4891	0.9				
	140	182	20	4285	2.7	**MWM110**	**100B5**	**100L2**	**67**
	112	225	25	4616	2.2				
	93.3	258	30	4905	2.1				
	70	340	40	5399	1.6				
	56	409	50	5816	1.2				
	46.7	479	60	6181	1.0				
	140	182	10	4285	3.3	**MWM110**	**100B5**	**100LB4**	**67**
	93.3	264	15	4905	2.5				
	70	348	20	5399	1.9				
	56	425	25	5816	1.6				
	46.7	485	30	6181	1.5				
	35	630	40	6803	1.1				
	28	757	50	7328	0.9				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
3.0	120	210	7.5	4511	3.1	**MWM110**	**132B5**	**132S6**	**67**
	90	277	10	4965	2.6				
	60	401	15	5684	1.9				
	45	528	20	6256	1.4				
	36	653	25	6739	1.2				
	30	736	30	7161	1.1				
	22.5	955	40	7882	0.8				
4.0	373.3	91	7.5	2210	1.4	**MWM075**	**112B5/B14**	**112M2**	**65**
	280	120	10	2433	1.2				
	186.7	180	15	2785	0.9				
	140	235	20	3065	0.7				
	186.7	180	7.5	2785	1.0	**MWM075**	**112B5/B14**	**112M4**	**65**
	140	237	10	3065	0.8				
	373.3	93	7.5	2446	2.3	**MWM090**	**112B5/B14**	**112M2**	**66**
	280	123	10	2692	1.9				
	186.7	182	15	3081	1.5				
	140	240	20	3391	1.1				
	112	293	25	3653	0.9				
	93.3	340	30	3882	0.9				
	186.7	182	7.5	3081	1.6	**MWM090**	**112B5**	**112M4**	**66**
	140	240	10	3391	1.3				
	93.3	348	15	3882	1.0				
	70	453	20	4273	0.8				
	186.7	184	7.5	3893	3.0	**MWM110**	**112B5**	**112M4**	**67**
	140	240	10	4285	2.5				
	93.3	352	15	4905	1.9				
	70	464	20	5399	1.4				
	56	566	25	5816	1.2				
	46.7	647	30	6181	1.1				
	35	863	40	6803	0.8				
	120	280	7.5	4511	2.3	**MWM110**	**132B5**	**132MA6**	**67**
	90	369	10	4965	1.9				
	60	535	15	5684	1.4				
	56	580	25	5816	1.2				
	46.7	655	30	6181	1.1				
	35	863	40	6803	0.8				
5.5	186.7	250	7.5	3893	2.2	**MWM110**	**132B5**	**132S4**	**67**
	140	330	10	4285	1.8				
	93.3	484	15	4905	1.4				
	70	638	20	5399	1.0				
	56	798	25	5816	0.9				
	46.7	901	30	6181	0.8				
7.5	186.7	341	7.5	3893	1.6	**MWM110**	**132B5**	**132M4**	**67**
	140	450	10	4285	1.3				
	93.3	660	15	4905	1.0				
	70	880	20	5399	0.7				

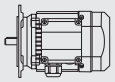
7.2 PC.. MWM.. / PERFORMANCE PARAMETER

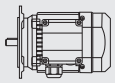
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
0.09	12,0	48	75	3283	1,3	**PC063 - MWM040**	**6316**	**68**
	10,0	52	90	3488	1,4			
	7,5	83	120	3490	1,1			
	6,0	73	150	3490	0,9			
	5,0	80	180	3490	0,7			
	12,0	48	75	4506	2,4	**PC063 - MWM050**	**6316**	**68**
	10,0	53	90	4788	2,8			
	7,5	84	120	4840	2,0			
	6,0	74	150	4840	1,7			
	5,0	82	180	4840	1,3			
	3,8	95	240	4840	0,9			
	3,0	107	300	4840	0,8			
0.12	18.7	42	75	2833	1.2	**PC063 - MWM040**	**6314**	**68**
	15.6	48	90	3011	1.2			
	11.7	57	120	3314	0.9			
	9.3	88	150	3490	0.7			
	7.8	74	180	3490	0.8			
	18,7	42	75	3889	2,2	**PC063 - MWM050**	**6314**	**68**
	15,6	47	90	4132	2,4			
	11,7	58	120	4548	1,8			
	9.3	88	150	4840	1.3			
	7.8	75	180	4840	1.1			
	5.8	88	240	4840	0.8			
	5.8	92	240	6270	1.5	**PC063 - MWM063**	**6314**	**68**
	4.7	103	300	6270	1.2			
0.18	18.7	84	75	2833	0.8	**PC063 - MWM040**	**6324**	**68**
	15.6	70	90	3011	0.8			
	11.7	85	120	3314	0.8			
	18.7	84	75	3889	1.4	**PC063 - MWM050**	**6324**	**68**
	15.6	71	90	4132	1.5			
	11.7	87	120	4548	1.1			
	9.3	101	150	4840	0.9			
	7.8	113	180	4840	0.7			
	5.8	133	240	4840	0.8			
	9.3	103	150	6270	1.7	**PC063 - MWM063**	**6324**	**68**
	7.8	117	180	6270	1.4			
	5.8	139	240	6270	1.0			
	4.7	155	300	6270	0.8			
	12.0	95	75	4506	1.2	**PC071 - MWM050**	**7116**	**69**
	10.0	105	90	4788	1.4			
	7.5	128	120	4840	1.0			
	6.0	148	150	4840	0.8			
	12.0	97	75	5889	2.2	**PC071 - MWM063**	**7116**	**69**
	10.0	107	90	6259	2.4			
	7.5	131	120	6270	1.8			
	6.0	152	150	6270	1.4			
	5.0	188	180	6270	1.2			
	3.8	197	240	6270	0.9			
	3.0	218	300	6270	0.7			
	5.0	179	180	7380	1.7	**PC071 - MWM075**	**7116**	**69**
	3.8	211	240	7380	1.2			
	3.0	235	300	7380	1.0			

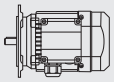
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
0.25	18.7	88	75	3889	1.0	PC071 - MWM050	7114	69
	15.6	98	90	4132	1.1			
	11.7	121	120	4548	0.8			
	18.7	91	75	5083	1.8	PC071 - MWM063	7114	69
	15.6	100	90	5401	2.0			
	11.7	125	120	5945	1.5			
	9.3	143	150	6270	1.2			
	7.8	183	180	6270	1.0			
	5.8	192	240	6270	0.7			
	4.7	215	300	6270	0.6			
	12.0	135	75	5889	1.6	PC071 - MWM063	7126	69
	10.0	148	90	6259	1.8			
	7.5	181	120	6270	1.3			
	6.0	211	150	6270	1.0			
	9.3	151	150	7380	1.7	PC071 -MWM075	7114	69
	7.8	172	180	7380	1.4			
	5.8	201	240	7380	1.1			
	4.7	230	300	7380	0.9			
	12.0	139	75	6952	2.4	PC071 - MWM075	7126	69
	10.0	155	90	7380	2.5			
	7.5	191	120	7380	1.9			
	6.0	219	150	7380	1.5			
	5.0	248	180	7380	1.2			
	5.0	283	180	8180	1.9	PC071 - MWM090	7126	70
	3.8	318	240	8180	1.4			
	3.0	358	300	8180	1.1			
	18.7	134	75	5083	1.2	PC071 - MWM063	7124	69
	15.6	148	90	5401	1.4			
	11.7	185	120	5945	1.0			
	9.3	212	150	6270	0.8			
0.37	18.7	138	75	6000	1.8	PC071 - MWM075	7124	69
	15.6	154	90	6375	1.9			
	11.7	191	120	7017	1.5			
	9.3	223	150	7380	1.1			
	7.8	254	180	7380	0.9			
	12.0	208	75	6952	1.6	PC080 - MWM075	8016	70
	10.0	230	90	7380	1.7			
	7.5	283	120	7380	1.3			
	6.0	324	150	7380	1.0			
	7.8	268	180	8180	1.5	PC071 - MWM090	7124	70
	5.8	321	240	8180	1.1			
	4.7	371	300	8180	0.9			
	6.0	347	150	8180	1.6	PC080 - MWM090	8016	70
	5.0	389	180	8180	1.3			
	3.8	471	240	8180	1.0			
	3.8	509	240	10320	1.6	PC080 - MWM110	8016	71
	3.0	577	300	10320	1.3			
0.55	18.7	205	75	6000	1.2	PC080 - MWM075	8014	70
	15.6	230	90	6375	1.3			
	11.7	284	120	7017	1.0			
	9.3	332	150	7380	0.8			
	12.0	308	75	6952	1.1	PC080 - MWM075	8026	70
	10.0	341	90	7380	1.1			
	15.6	240	90	7054	2.3	PC080 - MWM090	8014	70
	11.7	297	120	7764	1.6			
	9.3	355	150	8180	1.3			
	7.8	398	180	8180	1.0			

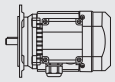
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
0.55	10.0	357	90	8174	2.0	PC080 - MWM090	8026	70
	7.5	441	120	8180	1.4			
	6.0	516	150	8180	1.1			
	5.0	578	180	8180	0.9			
	7.8	425	180	10320	1.8	PC080 - MWM110	8014	71
	5.8	513	240	10320	1.3			
	4.7	597	300	10320	1.0			
	7.5	462	120	10320	2.6	PC080 - MWM110	8026	71
	6.0	552	150	10320	2.0			
	5.0	620	180	10320	1.6			
	3.8	756	240	10320	1.1			
0.75	18.7	280	75	6000	0.9	PC080 - MRV075	8024	70
	15.6	313	90	6375	1.0			
	15.6	327	90	7054	1.7	PC080 - MWM090	8024	70
	11.7	405	120	7764	1.2			
	9.3	483	150	8180	0.9			
	7.8	543	180	8180	0.7			
	11.7	430	120	9811	2.2	PC080 - MWM110	8024	71
	9.3	506	150	10320	1.7			
	7.8	580	180	10320	1.3			
	5.8	700	240	10320	0.9			
	12.4	393	73	9614	3.2	PC090 - MWM110	90S6	71
	9.3	508	96.8	10320	2.3			
	7.4	607	121	10320	1.8			
	6.2	682	145.2	10320	1.5			
	4.6	832	193.6	10320	1.0			
1.1	12.4	576	73	9614	2.2	PC090 - MWM110	90L6	71
	9.3	746	96.8	10320	1.6			
	7.4	890	121	10320	1.2			
	6.2	1000	145.2	10320	1.0			
	19.3	392	73	8298	2.5	PC090 - MWM110	90S4	71
	14.5	508	96.8	9133	1.8			
	11.6	599	121	9838	1.5			
	9.6	686	145.2	10320	1.1			
	7.2	828	193.6	10320	0.8			
1.5	19.3	535	73	8298	1.9	PC090 - MWM110	90L4	71
	14.5	693	96.8	9133	1.3			
	11.6	817	121	9838	1.1			
	9.6	936	145.2	10320	0.8			
2.2	38.6	398	73	6586	2.1	PC090 - MWM110	90L2	71
	28.9	516	96.8	7249	1.5			
	23.1	617	121	7809	1.2			

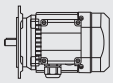
7.3 MWM.. /MWM.. PERFORMANCE PARAMETER

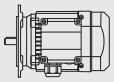
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page ⟷
0.06	14.0	25	100	1620	1.3	**YNRV025 / MWM030**	**5614**	**72**
	9.3	33	150	1830	0.9			
	7.0	41	200	1830	0.7			
	5.6	45	250	1830	0.8			
	4.7	56	300	3490	1.2	**YNRV025 / MWM040**	**5614**	**72**
	3.5	69	400	3490	0.9			
	2.8	94	500	3490	0.7			
	2.3	100	600	3490	0.6			
	1.9	115	750	3490	0.5			
	1.6	125	900	3490	0.5			
	1.2	153	1200	3490	0.4			
	0.9	185	1500	3490	0.3			
	0.8	198	1800	3490	0.3			
	0.6	247	2400	3490	0.2			
	0.5	280	3000	3490	0.2			
	0.4	295	4000	3490	0.1			
	0.3	348	5000	3490	0.1			
	14.0	26	100	2769	2.7	**MWM030 / 040**	**5614**	**72**
	9.3	37	150	3169	1.9			
	7.0	47	200	3488	1.4			
	5.6	55	250	3490	1.1			
	4.7	60	300	3490	1.2			
	3.5	72	400	3490	0.9			
	7.0	47	200	4788	2.6	**MWM030 / 050**	**5614**	**73**
	5.6	55	250	4840	2.0			
	4.7	61	300	4840	2.4			
	3.5	73	400	4840	1.7			
	2.8	85	500	4840	1.4			
	2.3	109	600	4840	1.3			
	1.9	127	750	4840	1.1			
	1.6	146	900	4840	1.0			
	1.2	177	1200	4840	0.8			
	0.9	206	1500	4840	0.7			
	3.5	76	400	6270	3.4	**MWM030 / 063**	**5614**	**73**
	2.8	88	500	6270	2.7			
	2.3	111	600	6270	2.4			
	1.9	129	750	6270	2.1			
	1.6	148	900	6270	1.8			
	1.2	180	1200	6270	1.5			
	0.9	210	1500	6270	1.3			
	0.8	234	1800	6270	1.2			
	0.6	286	2400	6270	0.9			
	0.5	332	3000	6270	0.7			
	2.8	102	500	3800	1.3	**MWM040 / 050**	**5614**	**73**
	1.6	159	900	4350	0.9			
	0.9	236	1500	6270	1.1	**MWM040 / 063**	**5614**	**74**
	0.8	265	1800	6270	1.0			
	0.6	325	2400	6270	0.8			
	0.9	248	1500	7380	1.8	**MWM040 / 075**	**5614**	**74**
	0.8	278	1800	7380	1.6			
	0.6	267	2400	7380	1.1			
	0.5	305	3000	7380	0.8			
	0.4	360	4000	7380	0.7			
	0.3	409	5000	7380	0.5			

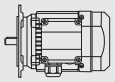
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
0.06	0.9	259	1500	8180	2.7	**MWM040 / 090**	**5614**	**74**
	0.8	291	1800	8180	2.4			
	0.6	359	2400	8180	1.7			
	0.5	329	3000	8180	1.4			
	0.4	393	4000	8180	1.3			
	0.3	430	5000	8180	1.0			
0.09	28.0	18	100	1288	1.6	**YNRV025 / MWM030**	**5612**	**72**
	18.7	25	150	1472	1.1			
	14.0	31	200	1820	0.9			
	14.0	37	100	1820	0.8	**YNRV025 / MWM030**	**5624**	**72**
	9.3	50	150	1830	0.6			
	7.0	61	200	1830	0.5			
	5.6	68	250	1830	0.5			
	4.7	77	300	1830	0.4			
	3.5	106	400	1830	0.3			
	2.8	117	500	1830	0.3			
	2.3	135	600	1830	0.2			
	1.9	149	750	1830	0.2			
	1.6	167	900	1830	0.2			
	1.2	201	1200	1830	0.1			
	0.9	231	1500	1830	0.1			
	0.8	264	1800	1830	0.1			
	0.6	311	2400	1830	0.1			
	0.5	347	3000	1830	0.1			
	14.0	39	100	2789	1.8	**YNRV025 / MWM040**	**5612**	**72**
	9.3	54	150	3488	1.2			
	7.0	70	200	3488	0.9			
	5.6	83	250	3490	0.7			
	9.3	43	300	3490	1.6			
	7.0	52	400	3490	1.2			
	5.6	71	500	3490	0.8			
	14.0	39	100	2789	1.8	**MWM030 / 040**	**5624**	**72**
	9.3	56	150	3189	1.3			
	7.0	70	200	3488	0.9			
	5.6	83	250	3490	0.7			
	4.7	82	300	3490	0.8			
	14.0	40	100	3800	3.4	**MWM030 / 050**	**5624**	**73**
	9.3	56	150	4350	2.4			
	7.0	70	200	4788	1.7			
	5.6	83	250	4840	1.3			
	4.7	92	300	4840	1.6			
	3.5	103	400	4840	1.2			
	2.8	120	500	4840	1.0			
	2.3	146	600	4840	0.9			
	1.9	158	750	4840	0.8			
	1.6	177	900	4840	0.7			
	5.6	85	250	8270	2.7	**MWM030 / 063**	**5624**	**73**
	4.7	88	300	8270	2.9			
	3.5	114	400	8270	2.2			
	2.8	132	500	8270	1.8			
	2.3	166	600	8270	1.6			
	1.9	194	750	8270	1.4			
	1.6	188	900	8270	1.0			
	1.2	222	1200	8270	0.9			
	0.9	259	1500	8270	0.7			
	0.8	351	1800	8270	0.8			

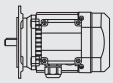
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_S			Page
	2.8	153	500	3800	0.9	**MWM040 / 050**	**5624**	**73**
0.09	0.9	354	1500	6270	0.8	**MWM040 / 063**	**5624**	**74**
	0.9	305	1500	7380	1.1	**MWM040 / 075**	**5624**	**74**
	0.8	331	1800	7380	1.0			
	0.6	400	2400	7380	0.7			
	0.5	494	3000	8180	0.9	**MWM040 / 090**	**5624**	**74**
	0.4	589	4000	8180	0.8			
	14.0	52	100	2769	1.4	**MWM030 / 040**	**6314**	**72**
0.12	9.3	74	150	3169	1.0			
	14.0	54	100	3800	2.6	**MWM030 / 050**	**6314**	**73**
	9.3	74	150	4350	1.8			
	7.0	94	200	4788	1.3			
	5.8	110	250	4840	1.0			
	4.7	112	300	4840	1.2			
	3.5	138	400	4840	0.9			
	2.8	160	500	4840	0.7			
	14.0	54	100	4967	2.8	**MWM030 / 063**	**6314**	**73**
	9.3	75	150	5686	2.8			
	7.0	95	200	6259	2.7			
	5.8	114	250	6270	2.0			
	4.7	117	300	6270	2.2			
	3.5	152	400	6270	1.7			
	2.8	168	500	6270	1.3			
	2.3	199	600	6270	1.1			
	1.9	217	750	6270	0.9			
	1.8	297	900	6270	0.9			
	1.2	360	1200	6270	0.8			
	14.0	55	100	3800	2.5	**MWM040 / 050**	**6314**	**73**
	9.3	76	150	4350	1.8			
	7.0	96	200	4788	1.2			
	5.8	113	250	4840	1.0			
	4.7	125	300	4840	1.2			
	3.5	150	400	4840	0.8			
	9.3	77	150	5686	3.4	**MWM040 / 063**	**6314**	**74**
	7.0	97	200	6259	2.6			
	5.8	117	250	6270	2.0			
	4.7	127	300	6270	2.1			
	3.5	156	400	6270	1.6			
	2.8	217	500	6270	1.1			
	2.3	237	600	6270	1.1			
	1.9	285	750	6270	1.0			
	1.6	319	900	6270	0.8			
	5.6	120	250	7380	3.2	**MWM040 / 075**	**6314**	**74**
	4.7	134	300	7380	3.3			
	3.5	164	400	7380	2.5			
	2.8	188	500	7380	2.0			
	2.3	248	600	7380	1.8			
	1.9	299	750	7380	1.5			
	1.8	335	900	7380	1.3			
	1.2	415	1200	7380	1.1			
	0.9	495	1500	7380	0.9			
	0.8	556	1800	7380	0.8			
	2.8	202	500	8180	2.8	**MWM040 / 090**	**6314**	**74**
	2.3	260	600	8180	2.7			
	1.9	313	750	8180	2.2			
	1.6	350	900	8180	2.0			

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
0.12	1.2	434	1200	8180	1.6	**MWM040 / 090**	**6314**	**74**
	0.9	518	1500	8180	1.4			
	0.8	470	1800	8180	0.9			
	0.6	593	2400	8180	0.9			
	1.2	448	1200	8180	1.6	**MWM050 / 090**	**6314**	**75**
	0.9	527	1500	8180	1.3			
	0.8	592	1800	8180	1.2			
	0.6	731	2400	8180	0.8			
	1.2	448	1200	10320	2.8	**MWM050 / 110**	**6314**	**75**
	0.9	527	1500	10320	2.4			
	0.8	592	1800	10320	2.1			
	0.6	766	2400	10320	1.5			
	0.5	731	3000	10320	1.2			
	0.4	884	4000	10320	1.0			
	0.3	1023	5000	10320	0.8			
0.18	14.0	78	100	2769	0.9	**MWM030 / 040**	**6324**	**72**
	14.0	81	100	3800	1.7	**MWM030 / 050**	**6324**	**73**
	9.3	112	150	4350	1.2			
	7.0	141	200	4788	0.9			
	4.7	183	300	4840	0.8			
	14.0	81	100	4967	1.9	**MWM030 / 063**	**6324**	**73**
	9.3	113	150	5686	1.9			
	7.0	143	200	6259	1.8			
	5.6	171	250	6270	1.4			
	4.7	175	300	6270	1.5			
	3.5	216	400	6270	1.0			
	2.8	252	500	6270	0.8			
	2.3	333	600	6270	0.8			
	14.0	82	100	3800	1.7	**MWM040 / 050**	**6324**	**73**
	9.3	114	150	4350	1.2			
	7.0	144	200	4788	0.8			
	4.7	188	300	4840	0.8			
	14.0	82	100	4967	3.1	**MWM040 / 063**	**6324**	**74**
	9.3	116	150	5686	2.2			
	7.0	146	200	6259	1.7			
	5.6	175	250	6270	1.3			
	4.7	191	300	6270	1.4			
	3.5	234	400	6270	1.1			
	2.8	325	500	6270	0.7			
	2.3	355	600	6270	0.8			
	7.0	150	200	7380	2.8	**MWM040 / 075**	**6324**	**74**
	5.6	180	250	7380	2.1			
	4.7	200	300	7380	2.2			
	3.5	246	400	7380	1.7			
	2.8	282	500	7380	1.3			
	2.3	336	600	7380	1.1			
	1.9	371	750	7380	0.9			
	1.6	419	900	7380	0.8			
	1.2	622	1200	7380	0.7			
	5.6	188	250	8180	3.0	**MWM040 / 090**	**6324**	**74**
	4.7	210	300	8180	3.3			
	3.5	259	400	8180	2.4			
	2.8	303	500	8180	1.9			
	2.3	390	600	8180	1.8			
	1.9	469	750	8180	1.5			
	1.6	526	900	8180	1.3			
	1.2	544	1200	8180	1.0			
	0.9	647	1500	8180	0.8			
	0.8	874	1800	8180	0.8			

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_S			Page
0.18	1.2	671	1200	8180	1.0	MWM050/ 090	6324	75
	0.9	790	1500	8180	0.9			
	0.8	888	1800	8180	0.8			
	1.2	671	1200	10320	1.9	MWM050/ 110	6324	75
	0.9	790	1500	10320	1.6			
	0.8	727	1800	10320	1.5			
	0.6	948	2400	10320	1.1			
	0.5	1370	3000	10320	0.8			
	7.0	150	400	6270	1.4	MWM030/ 063	6322	73
	5.6	175	500	6270	1.2			
0.25	14.0	115	100	3800	1.2	MWM040/ 050	7114	73
	9.3	159	150	4350	0.9			
	14.0	14.0	100	4967	2.2	MWM040/ 063	7114	74
	9.3	161	150	5686	1.6			
	7.0	203	200	6259	1.2			
	5.6	243	250	6270	1.0			
	4.7	265	300	6270	1.0			
	3.5	325	400	6270	0.8			
	14.0	116	100	5863	3.0	MWM040/ 075	7114	74
	9.3	165	150	6712	2.6			
	7.0	209	200	7380	2.0			
	5.6	250	250	7380	1.5			
	4.7	278	300	7380	1.6			
	3.5	321	400	7380	1.1			
	2.8	375	500	7380	0.8			
	2.3	517	600	7380	0.9			
	1.9	622	750	7380	0.7			
	14.0	119	100	6487	3.0	MWM040/ 090	7114	74
	9.3	170	150	7426	3.0			
	7.0	217	200	8174	2.8			
	5.6	261	250	8180	2.2			
	4.7	291	300	8180	2.4			
	3.5	359	400	8180	1.7			
	2.8	420	500	8180	1.3			
	2.3	488	600	8180	1.2			
	1.9	553	750	8180	0.9			
	1.6	612	900	8180	0.8			
	1.2	905	1200	8180	0.8			
	7.0	223	200	8174	2.7	MWM050/ 090	7114	75
	5.6	267	250	8180	2.1			
	4.7	298	300	8180	2.3			
	3.5	368	400	8180	1.7			
	2.8	491	500	8180	1.2			
	2.3	548	600	8180	1.3			
	1.9	660	750	8180	1.1			
	1.6	751	900	8180	0.9			
	1.2	932	1200	8180	0.8			
	3.5	386	400	10320	3.1	MWM050/ 110	7114	75
	2.8	512	500	10320	2.3			
	2.3	548	600	10320	2.3			
	1.9	660	750	10320	1.9			
	1.6	751	900	10320	1.7			
	1.2	776	1200	10320	1.3			
	0.9	924	1500	10320	1.2			
	0.8	1010	1800	10320	1.1			
	0.6	1596	2400	10320	0.7			

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s			Page
0.25	3.5	386	400	10320	3.1	**MWM063/ 110**	**7114**	**75**
	2.8	524	500	10320	2.2			
	2.3	562	600	10320	2.3			
	1.9	677	750	10320	1.9			
	1.6	771	900	10320	1.8			
	1.2	973	1200	10320	1.3			
	0.9	1148	1500	10320	1.1			
	0.8	1296	1800	10320	1.0			
	0.6	1676	2400	10320	0.7			
0.37	9.3	182	300	6270	1.3	**MWM030/ 063**	**7112**	**73**
	7.0	222	400	6270	1.0			
	14.0	169	100	3800	0.8	**MWM040/ 050**	**7124**	**73**
	14.0	169	100	4967	1.5	**MWM040/ 063**	**7124**	**74**
	9.3	238	150	5686	1.1			
	7.0	300	200	6259	0.8			
	14.0	172	100	5863	2.1	**MWM040/ 075**	**7124**	**74**
	9.3	245	150	6712	1.7			
	7.0	309	200	7380	1.4			
	5.6	370	250	7380	1.0			
	4.7	383	300	7380	1.0			
	3.5	474	400	7380	0.7			
	14.0	176	100	6487	2.1	**MWM040/ 090**	**7124**	**74**
	9.3	251	150	7426	2.1			
	7.0	322	200	8174	1.9			
	5.6	386	250	8180	1.5			
	4.7	406	300	8180	1.5			
	3.5	505	400	8180	1.2			
	2.8	593	500	8180	0.9			
	2.3	722	600	8180	0.8			
	2.3	722	600	8180	0.8			
	14.0	180	100	6487	3.3	**MWM050/ 090**	**7124**	**75**
	9.3	257	150	7426	2.6			
	7.0	329	200	8174	1.9			
	5.6	395	250	8180	1.4			
	4.7	441	300	8180	1.6			
	3.5	545	400	8180	1.1			
	2.8	727	500	8180	0.8			
	2.3	812	600	8180	0.9			
	1.9	977	750	8180	0.7			
	7.0	338	200	10320	3.4	**MWM050/ 110**	**7124**	**75**
	5.6	412	250	10320	2.8			
	4.7	441	300	10320	2.9			
	3.5	571	400	10320	2.1			
	2.8	757	500	10320	1.5			
	2.3	812	600	10320	1.8			
	1.9	837	750	10320	1.2			
	1.6	928	900	10320	1.0			
	1.2	1148	1200	10320	0.7			
	0.9	1623	1500	10320	0.8			
	7.0	338	200	10320	3.4	**MWM063/ 110**	**7124**	**75**
	5.6	412	250	10320	2.8			
	4.7	441	300	10320	2.9			
	3.5	571	400	10320	2.1			
	2.8	776	500	10320	1.5			
	2.3	832	600	10320	1.5			
	1.9	1002	750	10320	1.3			
	1.6	1141	900	10320	1.1			
	1.2	1441	1200	10320	0.9			
	0.9	1699	1500	10320	0.7			

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_S			Page
0.55	9.3	305	300	8180	2.0	**MWM040/ 090**	**7122**	**74**
	7.0	375	400	8180	1.5			
	5.6	441	500	8180	1.2			
	14.0	268	100	6487	2.2	**MWM050/ 090**	**8014**	**75**
	9.3	382	150	7426	1.7			
	7.0	490	200	8174	1.2			
	5.6	588	250	8180	1.0			
	4.7	656	300	8180	1.1			
	3.5	809	400	8180	0.8			
	14.0	268	100	8198	2.4	**MWM050 / 110**	**8014**	**75**
	9.3	387	150	9384	2.4			
	7.0	503	200	10320	2.3			
	5.6	612	250	10320	1.9			
	4.7	615	300	10320	1.7			
	3.5	810	400	10320	1.2			
	2.8	938	500	10320	1.0			
	2.3	1096	600	10320	0.9			
	1.9	1244	750	10320	0.8			
	1.6	1651	900	10320	0.8			
	9.3	387	150	9384	3.1	**MWM063 / 110**	**8014**	**75**
	7.0	503	200	10320	2.3			
	5.6	612	250	10320	1.9			
	4.7	656	300	10320	1.9			
	3.5	849	400	10320	1.4			
	2.8	1154	500	10320	1.0			
	2.3	1237	600	10320	1.0			
	1.9	1489	750	10320	0.8			
	1.6	1697	900	10320	0.7			
0.75	7.0	512	400	8180	1.1	**MWM040/ 090**	**8012**	**74**
	5.6	601	500	8180	0.9			
	14.0	365	100	6487	1.6	**MWM050/ 090**	**8024**	**75**
	9.3	521	150	7426	1.3			
	7.0	668	200	8174	0.9			
	5.6	801	250	8180	0.7			
	4.7	895	300	8180	0.8			
	9.3	424	300	10320	2.8	**MWM050 / 110**	**8012**	**75**
	7.0	553	400	10320	2.1			
	5.6	640	500	10320	1.8			
	14.0	365	100	8198	1.8	**MWM050 / 110**	**8024**	**75**
	9.3	527	150	9384	1.8			
	7.0	685	200	10320	1.7			
	5.6	835	250	10320	1.4			
	4.7	838	300	10320	1.3			
	3.5	1105	400	10320	0.9			
	2.8	1535	500	10320	0.8			
	2.3	1645	600	10320	0.8			
	14.0	365	100	8198	3.0	**MWM063/ 110**	**8024**	**75**
	9.3	527	150	9384	2.3			
	7.0	685	200	10320	1.7			
	5.6	835	250	10320	1.4			
	4.7	895	300	10320	1.4			
	3.5	1157	400	10320	1.0			
	2.8	1573	500	10320	0.7			
	2.3	1686	600	10320	0.8			

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_S			Page ⟷
1.1	9.3	621	300	10320	1.9	**MWM050/ 110**	**8022**	**75**
	7.0	810	400	10320	1.4			
	5.6	938	500	10320	1.1			
	14.0	535	100	8198	2.1	**MWM063/ 110**	**90S4**	**75**
	9.3	774	150	9384	1.5			
	7.0	1005	200	10320	1.1			
	5.6	1224	250	10320	1.0			
	4.7	1312	300	10320	1.0			
1.5	9.3	847	300	10320	1.4	**MWM050/ 110**	**90S2**	**75**
	7.0	1105	400	10320	1.0			
	5.6	1279	500	10320	0.8			
	14.0	730	100	8198	1.5	**MWM063/ 110**	**90L4**	**75**
	9.3	1055	150	9384	1.1			
	7.0	1371	200	10320	0.8			
	5.6	1669	250	10320	0.7			
	4.7	1789	300	10320	0.7			

7.4 MWM.. HS PERFORMANCE PARAMETER

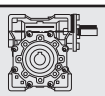
n_1=2800 r/min f_s=1

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
12	2800	5	0.79	560	474	115	**MWM030..HS**	**76**
13	2800	7.5	0.58	373.3	542	125		
13	2800	10	0.45	280	597	140		
13	2800	15	0.32	186.7	683	140		
12	2800	20	0.23	140	752	146		
16	2800	25	0.26	112	810	210		
15	2800	30	0.21	93.3	861	210		
14	2800	40	0.16	70	948	127		
13	2800	50	0.12	56	1021	128		
12	2800	60	0.10	46.7	1085	126		
11	2800	80	0.08	35	1194	130		
24	2800	5	1.56	560	912	200	**MWM040..HS**	**76**
28	2800	7.5	1.24	373.3	1044	233		
29	2800	10	0.98	280	1149	272		
31	2800	15	0.72	186.7	1315	291		
29	2800	20	0.52	140	1447	204		
28	2800	25	0.42	112	1559	236		
34	2800	30	0.44	93.3	1657	350		
31	2800	40	0.32	70	1824	350		
30	2800	50	0.26	56	1964	350		
28	2800	60	0.21	46.7	2087	350		
25	2800	B0	0.16	35	2298	350		
23	2800	100	0.12	28	2475	350		
45	2800	5	2.90	560	1251	280	**MWM050..HS**	**76**
52	2800	7.5	2.28	373.3	1433	324		
54	2800	10	1.82	280	1577	378		
57	2800	15	1.31	186.7	1805	399		
53	2800	20	0.95	140	1987	417		
51	2800	25	0.75	112	2140	482		
64	2800	30	0.81	93.3	2274	490		
59	2800	40	0.59	70	2503	490		
53	2800	50	0.45	56	2696	490		
50	2800	60	0.37	46.7	2865	490		
45	2800	80	0.27	35	3153	490		
40	2800	100	0.21	28	3397	490		
93	2800	7.5	4.04	373.3	1873	395	**MWM063..HS**	**76**
97	2800	10	3.23	280	2061	463		
103	2800	15	2.34	186.7	2359	492		
100	2800	20	1.75	140	2597	538		
92	2800	25	1.32	112	2797	593		
120	2800	30	1.50	93.3	2973	700		
108	2800	40	1.06	70	3272	700		
100	2800	50	0.81	56	3524	700		
95	2800	60	0.67	46.7	3745	700		
85	2800	80	0.49	35	4122	700		
74	2800	100	0.37	28	4440	700		
130	2800	7.5	5.71	373.3	2210	560	**MWM075..HS**	**76**
145	2800	10	4.83	280	2433	703		
150	2800	15	3.41	186.7	2785	727		
160	2800	20	2.79	140	3065	872		
150	2800	25	2.15	112	3302	980		
170	2800	30	2.10	93.3	3509	980		
165	2800	40	1.59	70	3862	980		
150	2800	50	1.20	56	4160	980		
145	2800	60	1.01	46.7	4421	980		
130	2800	80	0.72	35	4865	980		
120	2800	100	0.57	28	5241	980		

n_1=2800 r/min **f_s=1**

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
210	2800	7.5	9.02	373.3	2446	715	**MWM090..HS**	**76**
235	2800	10	7.66	280	2692	900		
270	2800	15	6.00	188.7	3081	1034		
260	2800	20	4.43	140	3391	1120		
250	2800	25	3.45	112	3653	1270		
310	2800	30	3.69	93.3	3882	1270		
275	2800	40	2.55	70	4273	1270		
265	2800	50	2.02	56	4603	1270		
245	2800	60	1.62	46.7	4891	1270		
225	2800	80	1.18	35	5383	1270		
200	2800	100	0.89	28	5799	1270		
391	2800	7.5	16.80	373.3	3090	950	**MWM110..HS**	**76**
437	2800	10	14.24	280	3401	1194		
489	2800	15	10.86	188.7	3893	1337		
483	2800	20	8.14	140	4285	1485		
506	2800	25	6.90	112	4616	1700		
552	2800	30	6.50	93.3	4905	1700		
529	2800	40	4.79	70	5399	1700		
495	2800	50	3.67	58	5816	1700		
473	2800	60	3.00	46.7	6181	1700		
399	2800	80	2.00	35	6803	1700		
368	2800	100	1.54	28	7328	1700		

n_1=1400 r/min **f_s=1**

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
18	1400	5	0.64	280	597	150	**MWM030..HS**	**76**
18	1400	7.5	0.42	186.7	683	150		
18	1400	10	0.33	140	752	169		
18	1400	15	0.23	93.3	861	169		
18	1400	20	0.18	70	948	190		
21	1400	25	0.19	56	1021	210		
20	1400	30	0.15	46.7	1085	210		
18	1400	40	0.11	35	1194	210		
17	1400	50	0.09	28	1286	210		
16	1400	60	0.08	23.3	1367	210		
13	1400	80	0.05	17.5	1504	210		
34	1400	5	1.10	280	1149	250	**MWM040..HS**	**76**
40	1400	7.5	0.91	186.7	1315	294		
40	1400	10	0.70	140	1447	331		
40	1400	15	0.49	93.3	1657	331		
39	1400	20	0.37	70	1824	350		
38	1400	25	0.30	56	1964	350		
45	1400	30	0.32	46.7	2087	350		
41	1400	40	0.23	35	2298	350		
39	1400	50	0.19	28	2475	350		
36	1400	60	0.15	23.3	2630	350		
33	1400	80	0.12	17.5	2895	350		
29	1400	100	0.09	14	3118	350		
62	1400	5	2.00	280	1577	350	**MWM050..HS**	**76**
71	1400	7.5	1.60	186.7	1805	401		
72	1400	10	1.24	140	1987	490		
74	1400	15	0.89	93.3	2274	490		

n_1=1400 r/min f_s=1

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
73	1400	20	0.69	70	2503	490	**MWM050..HS**	**76**
70	1400	25	0.55	56	2696	490		
84	1400	30	0.58	46.7	2865	490		
76	1400	40	0.42	35	3153	490		
73	1400	50	0.34	28	3397	490		
68	1400	60	0.28	23.3	3610	490		
65	1400	80	0.22	17.5	3973	490		
55	1400	100	0.17	14	4280	490		
128	1400	7.5	2.84	186.7	2359	500	**MWM063..HS**	**76**
130	1400	10	2.22	140	2597	571		
140	1400	15	1.67	93.3	2973	615		
135	1400	20	1.24	70	3272	667		
130	1400	25	0.99	56	3524	700		
160	1400	30	1.07	46.7	3745	700		
145	1400	40	0.77	35	4122	700		
135	1400	50	0.61	28	4440	700		
130	1400	60	0.51	23.3	4719	700		
122	1400	80	0.40	17.5	5193	700		
118	1400	100	0.34	14	5595	700		
185	1400	7.5	4.11	186.7	2785	700	**MWM075..HS**	**76**
195	1400	10	3.29	140	3065	830		
200	1400	15	2.33	93.3	3509	851		
210	1400	20	1.90	70	3862	980		
200	1400	25	1.48	56	4160	980		
230	1400	30	1.48	46.7	4421	980		
220	1400	40	1.12	35	4865	980		
210	1400	50	0.91	28	5241	980		
200	1400	60	0.76	23.3	5569	980		
190	1400	80	0.59	17.5	6130	980		
180	1400	100	0.48	14	6603	980		
290	1400	7.5	6.37	186.7	3081	900	**MWM090..HS**	**76**
310	1400	10	5.16	140	3391	1082		
360	1400	15	4.14	93.3	3882	1257		
355	1400	20	3.14	70	4273	1270		
340	1400	25	2.46	56	4603	1270		
410	1400	30	2.57	46.7	4891	1270		
360	1400	40	1.78	35	5383	1270		
340	1400	50	1.40	28	5799	1270		
320	1400	60	1.15	23.3	6163	1270		
285	1400	80	0.83	17.5	6783	1270		
270	1400	100	0.67	14	7306	1270		
552	1400	7.5	12.13	186.7	3893	1200	**MWM110..HS**	**76**
598	1400	10	9.96	140	4285	1463		
656	1400	15	7.45	93.3	4905	1604		
644	1400	20	5.55	70	5399	1700		
679	1400	25	4.80	56	5816	1700		
725	1400	30	4.49	46.7	6181	1700		
702	1400	40	3.34	35	6803	1700		
660	1400	50	2.61	28	7328	1700		
616	1400	60	2.09	23.3	7787	1700		
515	1400	80	1.41	17.5	8571	1700		
483	1400	100	1.12	14	9232	1700		

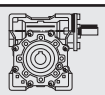
n_1=900 r/min f_s=1

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
20	900	5	0.47	180	692	175	**MWM030..HS**	**76**
20	900	7.5	0.30	120	792	175		
20	900	10	0.24	90	871	197		
20	900	15	0.17	80	997	197		
20	900	20	0.13	45	1098	210		
23	900	25	0.14	38	1183	210		
21	900	30	0.11	30	1257	210		
20	900	40	0.09	22.5	1383	210		
18	900	50	0.07	18	1490	210		
17	900	60	0.06	15	1583	210		
15	900	80	0.04	11.3	1743	210		
42	900	5	0.91	180	1331	290	**MWM040..HS**	**76**
44	900	7.5	0.66	120	1524	319		
44	900	10	0.51	90	1677	350		
45	900	15	0.36	80	1920	350		
44	900	20	0.28	45	2113	350		
43	900	25	0.23	38	2276	350		
49	900	30	0.23	30	2419	350		
45	900	40	0.17	22.5	2662	350		
42	900	50	0.14	18	2868	350		
39	900	60	0.11	15	3047	350		
35	900	80	0.09	11.3	3354	350		
32	900	100	0.07	9	3490	350		
84	900	5	1.60	180	1827	400	**MWM050..HS**	**76**
84	900	7.5	1.24	120	2091	448		
84	900	10	0.95	90	2302	490		
84	900	15	0.67	80	2635	490		
77	900	20	0.48	45	2900	490		
75	900	25	0.39	38	3124	490		
90	900	30	0.42	30	3320	490		
82	900	40	0.31	22.5	3654	490		
77	900	50	0.25	18	3936	490		
72	900	60	0.21	15	4183	490		
68	900	80	0.16	11.3	4604	490		
56	900	100	0.12	9	4840	490		
151	900	7.5	2.21	120	2734	580	**MWM063..HS**	**76**
153	900	10	1.72	90	3009	861		
155	900	15	1.22	80	3444	670		
148	900	20	0.91	45	3791	700		
137	900	25	0.70	38	4084	700		
175	900	30	0.79	30	4339	700		
160	900	40	0.58	22.5	4776	700		
145	900	50	0.45	18	5145	700		
138	900	60	0.37	15	5467	700		
128	900	80	0.29	11.3	6018	700		
124	900	100	0.25	9	6270	700		
215	900	7.5	3.14	120	3227	810	**MWM075..HS**	**76**
230	900	10	2.58	90	3551	975		
235	900	15	1.82	80	4065	980		
235	900	20	1.42	45	4474	980		
215	900	25	1.08	38	4820	980		
260	900	30	1.15	30	5122	980		
240	900	40	0.84	22.5	5637	980		
220	900	50	0.66	18	6073	980		
210	900	60	0.55	15	6453	980		
200	900	80	0.43	11.3	7103	980		
190	900	100	0.36	9	7380	980		

n_1=900 r/min **f_s=1**

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
340	900	7.5	4.85	120	3570	1040	**MWM090..HS**	**76**
370	900	10	4.05	90	3929	1270		
420	900	15	3.18	60	4498	1270		
390	900	20	2.27	45	4951	1270		
370	900	25	1.79	36	5333	1270		
460	900	30	1.93	30	5667	1270		
410	900	40	1.36	22.5	6238	1270		
390	900	50	1.10	18	6719	1270		
350	900	60	0.86	15	7140	1270		
315	900	80	0.63	11.3	7859	1270		
280	900	100	0.49	9	8180	1270		
650	900	7.5	9.28	120	4511	1390	**MWM110..HS**	**76**
713	900	10	7.72	90	4965	1700		
759	900	15	5.68	60	5684	1700		
725	900	20	4.12	45	6256	1700		
759	900	25	3.53	36	6739	1700		
840	900	30	3.47	30	7161	1700		
794	900	40	2.53	22.5	7882	1700		
748	900	50	1.99	18	8491	1700		
682	900	60	1.58	15	9023	1700		
567	900	80	1.06	11.3	9931	1700		
515	900	100	0.82	9	10320	1700		

n_1=500 r/min **f_s=1**

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
24	500	5	0.31	100	841	210	**MWM030..HS**	**76**
24	500	7.5	0.21	66.7	963	210		
24	500	10	0.16	50	1060	210		
24	500	15	0.12	33.3	1213	210		
23	500	20	0.09	25	1336	210		
29	500	25	0.10	20	1439	210		
26	500	30	0.08	16.7	1529	210		
23	500	40	0.06	12.5	1683	210		
21	500	50	0.05	10	1813	210		
19	500	60	0.04	8.3	1830	210		
17	500	80	0.03	6.3	1830	210		
49	500	5	0.63	100	1619	350	**MWM040..HS**	**76**
54	500	7.5	0.45	66.7	1853	350		
54	500	10	0.35	50	2040	350		
55	500	15	0.26	33.3	2335	350		
52	500	20	0.19	25	2570	350		
49	500	25	0.15	20	2769	350		
58	500	30	0.16	16.7	2942	350		
53	500	40	0.12	12.5	3238	350		
49	500	50	0.10	10	3488	350		
46	500	60	0.08	8.3	3490	350		
40	500	80	0.06	6.3	3490	350		
36	500	100	0.05	5	3490	350		
92	500	5	1.10	100	2222	490	**MWM050..HS**	**76**
103	500	7.5	0.87	66.7	2544	490		
103	500	10	0.67	50	2800	490		
103	500	15	0.47	33.3	3205	490		

n_1=500 r/min **f_s=1**

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
93	500	20	0.33	25	3528	490	**MWM050..HS**	**76**
91	500	25	0.27	20	3800	490		
108	500	30	0.30	16.7	4038	490		
98	500	40	0.22	12.5	4445	490		
91	500	50	0.17	10	4788	490		
83	500	60	0.14	8.3	4840	490		
75	500	80	0.11	6.3	4840	490		
65	500	100	0.09	5	4840	490		
184	500	7.5	1.53	66.7	3325	700	**MWM063..HS**	**76**
185	500	10	1.18	50	3660	700		
187	500	15	0.85	33.3	4190	700		
178	500	20	0.83	25	4611	700		
164	500	25	0.48	20	4967	700		
200	500	30	0.53	16.7	5279	700		
185	500	40	0.40	12.5	5810	700		
173	500	50	0.32	10	6259	700		
160	500	60	0.28	8.3	6270	700		
137	500	80	0.19	6.3	6270	700		
128	500	100	0.18	5	6270	700		
260	500	7.5	2.18	66.7	3925	980	**MWM075..HS**	**76**
270	500	10	1.72	50	4320	980		
280	500	15	1.25	33.3	4945	980		
285	500	20	0.99	25	5443	980		
255	500	25	0.74	20	5863	980		
300	500	30	0.77	16.7	6231	980		
280	500	40	0.58	12.5	6858	980		
250	500	50	0.44	10	7380	980		
240	500	60	0.38	8.3	7380	980		
215	500	80	0.28	6.3	7380	980		
210	500	100	0.24	5	7380	980		
410	500	7.5	3.33	66.7	4343	1270	**MWM090..HS**	**76**
435	500	10	2.71	50	4780	1270		
490	500	15	2.11	33.3	5472	1270		
470	500	20	1.58	25	6022	1270		
440	500	25	1.23	20	6487	1270		
550	500	30	1.35	16.7	6894	1270		
480	500	40	0.94	12.5	7588	1270		
450	500	50	0.75	10	8174	1270		
400	500	60	0.58	8.3	8180	1270		
365	500	80	0.45	6.3	8180	1270		
330	500	100	0.35	5	8180	1270		
794	500	7.5	8.45	66.7	5488	1700	**MWM110..HS**	**76**
851	500	10	5.24	50	6040	1700		
909	500	15	3.91	33.3	6914	1700		
863	500	20	2.82	25	7610	1700		
909	500	25	2.44	20	8198	1700		
1000	500	30	2.43	16.7	8711	1700		
932	500	40	1.74	12.5	9588	1700		
880	500	50	1.40	10	10320	1700		
781	500	60	1.08	8.3	10320	1700		
662	500	80	0.75	6.3	10320	1700		
599	500	100	0.58	5	10320	1700		

7.5 MWM.. HS / MWM.. PERFORMANCE PARAMETER

n_1=2800 r/min f_s=1

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
71	2800	100	0.31	28.0	2769	140	**MWM030..HS / MWM040**	**76**
72	2800	150	0.22	18.7	3169	140		
65	2800	200	0.16	14.0	3488	140		
61	2800	250	0.13	11.2	3490	140		
73	2800	300	0.14	9.3	3490	140		
65	2800	400	0.10	7.0	3490	140		
61	2800	500	0.07	5.8	3490	146		
73	2800	600	0.08	4.7	3490	146		
73	2800	750	0.06	3.7	3490	210		
73	2800	900	0.06	3.1	3490	210		
73	2800	1200	0.05	2.3	3490	127		
73	2800	1500	0.04	1.9	3490	128		
73	2800	1800	0.03	1.8	3490	126		
65	2800	2400	0.03	1.2	3490	126		
60	2800	3000	0.02	0.9	3490	126		
48	2800	4000	0.01	0.7	3490	128		
43	2800	5000	0.01	0.6	3490	128		
103	2800	100	0.44	28.0	3800	140	**MWM030..HS /MWM050**	**76**
135	2800	150	0.42	18.7	4350	140		
120	2800	200	0.30	14.0	4788	140		
110	2800	250	0.23	11.2	4840	140		
145	2800	300	0.27	9.3	4840	140		
124	2800	400	0.20	7.0	4840	140		
120	2800	500	0.16	5.8	4840	140		
145	2800	600	0.15	4.7	4840	146		
145	2800	750	0.13	3.7	4840	210		
145	2800	900	0.11	3.1	4840	210		
145	2800	1200	0.09	2.3	4840	127		
145	2800	1500	0.07	1.9	4840	128		
145	2800	1800	0.07	1.8	4840	126		
124	2800	2400	0.05	1.2	4840	126		
120	2800	3000	0.04	0.9	4840	126		
82	2800	4000	0.02	0.7	4840	128		
79	2800	5000	0.02	0.6	4840	128		
103	2800	100	0.44	28.0	4967	140	**MWM030..HS / MWM063**	**76**
144	2800	150	0.44	18.7	5686	140		
182	2800	200	0.44	14.0	6259	140		
218	2800	250	0.44	11.2	6270	140		
255	2800	300	0.51	9.3	6270	125		
255	2800	400	0.39	7.0	6270	140		
236	2800	500	0.31	5.8	6270	140		
220	2800	600	0.22	4.7	6270	146		
271	2800	750	0.23	3.7	6270	210		
271	2800	900	0.20	3.1	6270	210		
256	2800	1200	0.15	2.3	6270	127		
238	2800	1500	0.12	1.9	6270	128		
220	2800	1800	0.10	1.8	6270	126		
255	2800	2400	0.09	1.2	6270	126		
236	2800	3000	0.08	0.9	6270	126		
236	2800	4000	0.06	0.7	6270	130		
150	2800	5000	0.04	0.6	6270	128		
137	2800	100	0.58	28.0	3800	272	**MWM040..HS / MWM050**	**76**
135	2800	150	0.41	18.7	4350	272		
120	2800	200	0.29	14.0	4788	272		
110	2800	250	0.23	11.2	4840	272		
145	2800	300	0.27	9.3	4840	272		

n_1=2800 r/min **f_s=1**

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
124	2800	400	0.19	7.0	4840	272	**MWM040..HS / MWM050**	**76**
137	2800	500	0.15	5.6	3800	350		
145	2800	600	0.14	4.7	4840	204		
145	2800	750	0.12	3.7	4840	236		
135	2800	900	0.09	3.1	4350	350		
145	2800	1200	0.08	2.3	4840	350		
145	2800	1500	0.07	1.9	4840	350		
145	2800	1800	0.06	1.6	4840	350		
124	2800	2400	0.04	1.2	4840	350		
120	2800	3000	0.04	0.9	4840	350		
120	2800	4000	0.03	0.7	4840	350		
120	2800	5000	0.03	0.6	4840	350		
229	2800	100	0.97	28.0	4987	272	**MWM040..HS / MWM063**	**76**
260	2800	150	0.78	18.7	5888	272		
253	2800	200	0.60	14.0	8259	272		
231	2800	250	0.46	11.2	8270	272		
271	2800	300	0.49	9.3	8270	272		
255	2800	400	0.38	7.0	8270	272		
231	2800	500	0.24	5.6	8270	204		
271	2800	600	0.26	4.7	8270	204		
271	2800	750	0.22	3.7	8270	236		
271	2800	900	0.19	3.1	8270	350		
271	2800	1200	0.15	2.3	8270	350		
271	2800	1500	0.13	1.9	8270	350		
271	2800	1800	0.11	1.6	8270	350		
255	2800	2400	0.08	1.2	8270	350		
236	2800	3000	0.07	0.9	8270	350		
236	2800	4000	0.06	0.7	8270	350		
700	2800	300	1.15	9.3	8180	378	**MWM050..HS / MWM090**	**76**
610	2800	400	0.81	7.0	8180	378		
570	2800	500	0.56	5.6	8180	417		
700	2800	600	0.62	4.7	8180	417		
700	2800	750	0.50	3.7	8180	482		
700	2800	900	0.44	3.1	8180	490		
700	2800	1200	0.34	2.3	8180	490		
700	2800	1500	0.29	1.9	8180	490		
700	2800	1800	0.25	1.6	8180	490		
610	2800	2400	0.18	1.2	8180	490		
560	2800	3000	0.14	0.9	8180	490		
560	2800	4000	0.11	0.7	8180	490		
560	2800	5000	0.10	0.6	8180	490		
443	2800	100	1.78	28.0	8198	378	**MWM050..HS / MWM110**	**76**
640	2800	150	1.78	18.7	9384	378		
832	2800	200	1.78	14.0	10320	378		
1013	2800	250	1.78	11.2	10320	378		
1085	2800	300	1.78	9.3	10320	378		
1185	2800	400	1.50	7.0	10320	378		
994	2800	500	0.94	5.6	10320	417		
1065	2800	600	0.94	4.7	10320	417		
1025	2800	750	0.74	3.7	10320	482		
1265	2800	900	0.80	3.1	10320	490		
1186	2800	1200	0.58	2.3	10320	490		
1065	2800	1500	0.44	1.9	10320	490		
1005	2800	1800	0.36	1.6	10320	490		
1185	2800	2400	0.33	1.2	10320	490		
1100	2800	3000	0.26	0.9	10320	490		
1100	2800	4000	0.21	0.7	10320	490		
1100	2800	5000	0.18	0.6	10320	490		

n_1=2800 r/min **f_s=1**

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
815	2800	100	3.27	28.0	8198	471	**MWM063..HS / MWM110**	**76**
1178	2800	150	3.27	18.7	9384	471		
1139	2800	200	2.44	14.0	10320	471		
1173	2800	250	2.08	11.2	10320	471		
1265	2800	300	2.07	9.3	10320	471		
1185	2800	400	1.50	7.0	10320	471		
1173	2800	500	1.08	5.8	10320	556		
1265	2800	600	1.09	4.7	10320	556		
1265	2800	750	0.89	3.7	10320	613		
1265	2800	900	0.78	3.1	10320	700		
1265	2800	1200	0.81	2.3	10320	700		
1265	2800	1500	0.51	1.9	10320	700		
1265	2800	1800	0.45	1.8	10320	700		
1185	2800	2400	0.32	1.2	10320	700		
1100	2800	3000	0.25	0.9	10320	700		
1100	2800	4000	0.20	0.7	10320	700		
1100	2800	5000	0.18	0.8	10320	700		

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
71	1400	100	0.16	14.0	2769	169	**MWM030..HS /MWM040**	**76**
72	1400	150	0.12	9.3	3169	169		
65	1400	200	0.08	7.0	3488	169		
61	1400	250	0.07	5.6	3490	169		
73	1400	300	0.07	4.7	3490	210		
65	1400	400	0.06	3.5	3490	210		
61	1400	500	0.04	2.8	3490	210		
73	1400	600	0.05	2.3	3490	210		
73	1400	750	0.04	1.9	3490	210		
73	1400	900	0.04	1.6	3490	210		
65	1400	1200	0.03	1.2	3490	210		
73	1400	1500	0.03	0.9	3490	210		
73	1400	1800	0.02	0.8	3490	210		
65	1400	2400	0.02	0.6	3490	210		
60	1400	3200	0.01	0.5	3490	210		
48	1400	4000	0.01	0.4	3490	210		
43	1400	5000	0.01	0.3	3490	210		
137	1400	100	0.31	14.0	3800	169	**MWM030..HS / MWM050**	**76**
135	1400	150	0.22	9.3	4350	169		
120	1400	200	0.15	7.0	4788	169		
110	1400	250	0.12	5.6	4840	169		
145	1400	300	0.14	4.7	4840	169		
124	1400	400	0.10	3.5	4840	169		
120	1400	500	0.08	2.8	4840	169		
145	1400	600	0.08	2.3	4840	180		
145	1400	750	0.07	1.9	4840	210		
145	1400	900	0.06	1.6	4840	210		
145	1400	1200	0.05	1.2	4840	210		
145	1400	1500	0.04	0.9	4840	210		
145	1400	1800	0.04	0.8	4840	210		
124	1400	2400	0.03	0.6	4840	210		
120	1400	3000	0.02	0.5	4840	210		
82	1400	4000	0.01	0.4	4840	210		
79	1400	5000	0.01	0.3	4840	210		

n_1=1400 r/min f_s=1

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
137	1400	100	0.30	14.0	3800	344	**MWM040..HS / MWM050**	**76**
135	1400	150	0.21	9.3	4350	344		
120	1400	200	0.15	7.0	4788	344		
110	1400	250	0.12	5.6	4840	344		
145	1400	300	0.14	4.7	4840	344		
124	1400	400	0.10	3.5	4840	344		
137	1400	500	0.08	2.8	3800	350		
145	1400	600	0.07	2.3	4840	350		
145	1400	750	0.06	1.9	4840	350		
135	1400	900	0.05	1.6	4350	350		
145	1400	1200	0.04	1.2	4840	350		
145	1400	1500	0.04	0.9	4840	350		
145	1400	1800	0.03	0.8	4840	350		
124	1400	2400	0.02	0.6	4840	350		
120	1400	3000	0.02	0.5	4840	350		
120	1400	4000	0.02	0.4	4840	350		
120	1400	5000	0.01	0.3	4840	350		
150	1400	100	0.34	14.0	4967	169	**MWM030..HS / MWM063**	**76**
211	1400	150	0.34	9.3	5686	169		
253	1400	200	0.32	7.0	6259	169		
231	1400	250	0.24	5.6	6270	169		
255	1400	300	0.26	4.7	6270	150		
255	1400	400	0.20	3.5	6270	169		
236	1400	500	0.16	2.8	6270	169		
271	1400	600	0.15	2.3	6270	180		
271	1400	750	0.13	1.9	6270	210		
271	1400	900	0.11	1.6	6270	210		
271	1400	1200	0.09	1.2	6270	210		
271	1400	1500	0.08	0.9	6270	210		
271	1400	1800	0.07	0.8	6270	210		
255	1400	2400	0.05	0.6	6270	210		
236	1400	3000	0.04	0.5	6270	210		
236	1400	4000	0.04	0.4	6270	210		
150	1400	5000	0.02	0.3	6270	210		
257	1400	100	0.56	14.0	4967	344	**MWM040..HS / MWM063**	**76**
260	1400	150	0.40	9.3	5686	344		
253	1400	200	0.31	7.0	6259	344		
231	1400	250	0.24	5.6	6270	344		
271	1400	300	0.26	4.7	6270	344		
255	1400	400	0.20	3.5	6270	344		
231	1400	500	0.13	2.8	6270	350		
271	1400	600	0.14	2.3	6279	350		
271	1400	750	0.11	1.9	6270	350		
271	1400	900	0.10	1.6	6270	350		
271	1400	1200	0.08	1.2	6270	350		
271	1400	1500	0.07	0.9	6270	350		
271	1400	1800	0.06	0.8	6270	350		
255	1400	2400	0.05	0.6	6270	350		
236	1400	3000	0.04	0.5	6270	350		
236	1400	4000	0.03	0.4	6270	350		
390	1400	300	0.38	4.7	7380	350	**MWM040..HS / MWM075**	**76**
360	1400	400	0.28	3.5	7380	350		
320	1400	500	0.21	2.8	7380	350		
390	1400	600	0.21	2.3	7380	350		
390	1400	750	0.19	1.9	7380	350		
390	1400	900	0.17	1.6	7380	350		

n_1=1400 r/min **f_s=1**

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
360	1400	1200	0.13	1.2	7380	350	**MWM040..HS / MWM075**	**76**
390	1400	1500	0.12	0.9	7380	350		
390	1400	1800	0.11	0.8	7380	350		
360	1400	2400	0.08	0.8	7380	350		
320	1400	3000	0.06	0.5	7380	350		
250	1400	4000	0.04	0.4	7380	350		
230	1400	5000	0.03	0.3	7380	350		
610	1400	300	0.56	4.7	8180	350	**MWM040..HS / MWM090**	**76**
610	1400	400	0.45	3.5	8180	350		
560	1400	500	0.35	2.8	8180	350		
610	1400	600	0.31	2.3	8180	350		
560	1400	750	0.25	1.9	8180	350		
505	1400	900	0.21	1.8	8180	350		
610	1400	1200	0.20	1.2	8180	350		
560	1400	1500	0.16	0.9	8180	350		
505	1400	1800	0.13	0.8	8180	350		
610	1400	2400	0.12	0.8	8180	350		
560	1400	3000	0.10	0.5	8180	350		
460	1400	4000	0.07	0.4	8180	350		
410	1400	5000	0.05	0.3	8180	350		
700	1400	300	0.59	4.7	8180	490	**MWM050..HS /MWM090**	**76**
610	1400	400	0.41	3.5	8180	490		
570	1400	500	0.29	2.8	8180	490		
700	1400	600	0.32	2.3	8180	490		
700	1400	750	0.27	1.9	8180	490		
700	1400	900	0.23	1.8	8180	490		
700	1400	1200	0.19	1.2	8180	490		
700	1400	1500	0.16	0.9	8180	490		
700	1400	1800	0.14	0.8	8180	490		
610	1400	2400	0.10	0.6	8180	490		
560	1400	3000	0.08	0.5	8180	490		
560	1400	4000	0.07	0.4	8180	490		
560	1400	5000	0.05	0.3	8180	490		
648	1400	100	1.33	14.0	8198	490	**MWM040..HS / MWM110**	**76**
936	1400	150	1.33	9.3	9384	490		
1139	1400	200	1.25	7.0	10320	490		
1173	1400	250	1.05	5.8	10320	490		
1265	1400	300	1.06	4.7	10320	490		
1185	1400	400	0.77	3.5	10320	490		
1173	1400	500	0.57	2.8	10320	490		
1265	1400	600	0.58	2.3	10320	490		
1265	1400	750	0.48	1.9	10320	490		
1265	1400	900	0.42	1.8	10320	490		
1265	1400	1200	0.34	1.2	10320	490		
1265	1400	1500	0.29	0.9	10320	490		
1265	1400	1800	0.26	0.8	10320	490		
1185	1400	2400	0.19	0.8	10320	490		
1100	1400	3000	0.14	0.5	10320	490		
1100	1400	4000	0.12	0.4	10320	490		
1100	1400	5000	0.10	0.3	10320	490		
1110	1400	100	2.28	14.0	8198	595	**MWM063..HS / MWM110**	**76**
1196	1400	150	1.70	9.3	9384	595		
1139	1400	200	1.25	7.0	10320	595		
1173	1400	250	1.05	5.8	10320	595		
1265	1400	300	1.06	4.7	10320	595		
1185	1400	400	0.77	3.5	10320	595		

n_1=1400 r/min **f_s=1**

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
1173	1400	500	0.56	2.8	10320	700	**MWM063..HS / MWM110**	**76**
1265	1400	600	0.56	2.3	10320	700		
1265	1400	750	0.47	1.9	10320	700		
1265	1400	900	0.41	1.6	10320	700		
1265	1400	1200	0.32	1.2	10320	700		
1265	1400	1500	0.28	0.9	10320	700		
1265	1400	1800	0.24	0.8	10320	700		
1185	1400	2400	0.18	0.6	10320	700		
1100	1400	3000	0.14	0.5	10320	700		
1100	1400	4000	0.11	0.4	10320	700		
1100	1400	5000	0.10	0.3	10320	700		

n_1=900 r/min **f_s=1**

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
71	900	100	0.11	9.0	2769	197	**MWM030..HS / MWM040**	**76**
72	900	150	0.08	6.0	3169	197		
65	900	200	0.05	4.5	3488	197		
61	900	250	0.04	3.6	3490	197		
73	900	300	0.05	3.0	3490	197		
65	900	400	0.04	2.3	3490	197		
61	900	500	0.02	1.8	3490	210		
73	900	600	0.03	1.5	3490	210		
73	900	750	0.02	1.2	3490	210		
73	900	900	0.02	1.0	3490	210		
73	900	1200	0.02	0.8	3490	210		
73	900	1500	0.01	0.6	3490	210		
73	900	1800	0.01	0.5	3490	210		
65	900	2400	0.01	0.4	3490	210		
60	900	3000	0.01	0.3	3490	210		
48	900	4000	0.01	0.2	3490	210		
43	900	5000	0.00	0.2	3490	210		
137	900	100	0.20	9.0	3800	197	**MWM030..HS / MWM050**	**76**
135	900	150	0.14	6.0	4350	197		
120	900	200	0.10	4.5	4788	197		
110	900	250	0.08	3.6	4840	197		
145	900	300	0.09	3.0	4840	197		
124	900	400	0.07	2.3	4840	197		
120	900	500	0.06	1.8	4840	197		
145	900	600	0.05	1.5	4840	210		
145	900	750	0.05	1.2	4840	210		
145	900	900	0.04	1.0	4840	210		
145	900	1200	0.03	0.8	4840	210		
145	900	1500	0.03	0.6	4840	210		
145	900	1800	0.03	0.5	4840	210		
124	900	2400	0.02	0.4	4840	210		
120	900	3000	0.02	0.3	4840	210		
82	900	4000	0.01	0.2	4840	210		
79	900	5000	0.01	0.2	4840	210		
166	900	100	0.24	9.0	4967	197	**MWM030..HS / MWM063**	**76**
233	900	150	0.24	6.0	5686	197		
253	900	200	0.21	4.5	6259	197		
231	900	250	0.16	3.6	6270	197		
255	900	300	0.17	3.0	6270	175		
255	900	400	0.13	2.3	6270	197		

n_1=900 r/min f_s=1

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
236	900	500	0.11	1.8	6270	197	**MWM030..HS / MWM063**	**76**
271	900	600	0.10	1.5	6270	210		
271	900	750	0.09	1.2	6270	210		
271	900	900	0.08	1.0	6270	210		
271	900	1200	0.06	0.8	6270	210		
271	900	1500	0.05	0.6	6270	210		
271	900	1800	0.05	0.5	6270	210		
255	900	2400	0.04	0.4	6270	210		
236	900	3000	0.03	0.3	6270	210		
236	900	4000	0.03	0.2	6270	210		
150	900	5000	0.01	0.2	6270	210		
137	900	100	0.20	9.0	3800	350	**MWM040..HS / MWM050**	**76**
135	900	150	0.14	6.0	4350	350		
120	900	200	0.10	4.5	4788	350		
110	900	250	0.08	3.6	4840	350		
145	900	300	0.09	3.0	4840	350		
124	900	400	0.07	2.3	4840	350		
137	900	500	0.06	1.8	3800	350		
145	900	600	0.05	1.5	4840	350		
145	900	750	0.04	1.2	4840	350		
135	900	900	0.04	1.0	4350	350		
145	900	1200	0.03	0.8	4840	350		
145	900	1500	0.03	0.6	4840	350		
145	900	1800	0.02	0.5	4840	350		
124	900	2400	0.02	0.4	4840	350		
120	900	3000	0.01	0.3	4840	350		
120	900	4000	0.01	0.2	4840	350		
120	900	5000	0.01	0.2	4840	350		
257	900	100	0.37	9.0	4967	350	**MWM040..HS / MWM063**	**76**
260	900	150	0.27	6.0	5686	350		
253	900	200	0.21	4.5	6259	350		
231	900	250	0.16	3.6	6270	350		
271	900	300	0.17	3.0	6270	350		
255	900	400	0.13	2.3	6270	350		
231	900	500	0.09	1.8	6270	350		
271	900	600	0.09	1.5	6270	350		
271	900	750	0.08	1.2	6270	350		
271	900	900	0.07	1.0	6270	350		
271	900	1200	0.06	0.8	6270	350		
271	900	1500	0.05	0.6	6270	350		
271	900	1800	0.04	0.5	6270	350		
255	900	2400	0.03	0.4	6270	350		
236	900	3000	0.03	0.3	6270	350		
236	900	4000	0.02	0.2	6270	350		
700	900	300	0.39	3.0	8180	490	**MWM050..HS / MWM090**	**76**
610	900	400	0.27	2.3	8180	490		
570	900	500	0.19	1.8	8180	490		
700	900	600	0.21	1.5	8180	490		
700	900	750	0.18	1.2	8180	490		
700	900	900	0.16	1.0	8180	490		
700	900	1200	0.13	0.8	8180	490		
700	900	1500	0.11	0.6	8180	490		
700	900	1800	0.10	0.5	8180	490		
610	900	2400	0.07	0.4	8180	490		
560	900	3000	0.05	0.3	8180	490		
560	900	4000	0.05	0.2	8180	490		
560	900	5000	0.04	0.2	8180	490		

n_1=900 r/min f_s=1

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
754	900	100	1.02	9.0	8198	490	**MWM050..HS / MWM110**	**76**
1090	900	150	1.02	6.0	9384	490		
1139	900	200	0.82	4.5	10320	490		
1173	900	250	0.89	3.6	10320	490		
1265	900	300	0.70	3.0	10320	490		
1185	900	400	0.51	2.3	10320	490		
1173	900	500	0.38	1.8	10320	490		
1265	900	600	0.39	1.5	10320	490		
1265	900	750	0.32	1.2	10320	490		
1265	900	900	0.29	1.0	10320	490		
1265	900	1200	0.23	0.8	10320	490		
1265	900	1500	0.20	0.6	10320	490		
1265	900	1800	0.18	0.5	10320	490		
1185	900	2400	0.13	0.4	10320	490		
1100	900	3000	0.10	0.3	10320	490		
1100	900	4000	0.08	0.2	10320	490		
1100	900	5000	0.07	0.2	10320	490		
1127	900	100	1.52	9.0	8198	661	**MWM063..HS / MWM110**	**76**
1196	900	150	1.12	6.0	9384	661		
1139	900	200	0.82	4.5	10320	661		
1173	900	250	0.89	3.6	10320	661		
1265	900	300	0.70	3.0	10320	661		
1185	900	400	0.51	2.3	10320	661		
1173	900	500	0.38	1.8	10320	700		
1265	900	600	0.38	1.5	10320	700		
1265	900	750	0.31	1.2	10320	700		
1265	900	900	0.28	1.0	10320	700		
1265	900	1200	0.22	0.8	10320	700		
1265	900	1500	0.19	0.6	10320	700		
1265	900	1800	0.17	0.5	10320	700		
1185	900	2400	0.12	0.4	10320	700		
1100	900	3000	0.09	0.3	10320	700		
1100	900	4000	0.08	0.2	10320	700		
1100	900	5000	0.07	0.2	10320	700		

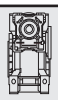
n_1=500 r/min f_s=1

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
71	500	100	0.06	5.0	2769	210	**MWM030..HS / MWM040**	**76**
72	500	150	0.04	3.3	3169	210		
65	500	200	0.03	2.5	3488	210		
61	500	250	0.03	2.0	3490	210		
73	500	300	0.03	1.7	3490	210		
65	500	400	0.02	1.3	3490	210		
61	500	500	0.01	1.0	3490	210		
73	500	600	0.02	0.8	3490	210		
73	500	750	0.01	0.7	3490	210		
73	500	900	0.01	0.6	3490	210		
73	500	1200	0.01	0.4	3490	210		
73	500	1500	0.01	0.3	3490	210		
73	500	1800	0.01	0.3	3490	210		
65	500	2400	0.01	0.2	3490	210		
60	500	3000	0.00	0.2	3490	210		
48	500	4000	0.00	0.1	3490	210		
43	500	5000	0.00	0.1	3490	210		

n_1=500 r/min f_s=1

M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
137	500	100	0.12	5.0	3800	210	**MWM030..HS / MWM050**	**76**
135	500	150	0.08	3.3	4350	210		
120	500	200	0.06	2.5	4788	210		
110	500	250	0.05	2.0	4840	210		
145	500	300	0.05	1.7	4840	210		
124	500	400	0.04	1.3	4840	210		
120	500	500	0.03	1.0	4840	210		
145	500	600	0.03	0.8	4840	210		
145	500	750	0.03	0.7	4840	210		
145	500	900	0.02	0.8	4840	210		
145	500	1200	0.02	0.4	4840	210		
145	500	1500	0.02	0.3	4840	210		
145	500	1800	0.02	0.3	4840	210		
124	500	2400	0.01	0.2	4840	210		
120	500	3000	0.01	0.2	4840	210		
82	500	4000	0.01	0.1	4840	210		
79	500	5000	0.00	0.1	4840	210		
137	500	100	0.11	5.0	3800	350	**MWM040..HS / MWM050**	**76**
135	500	150	0.08	3.3	4350	350		
120	500	200	0.06	2.5	4788	350		
110	500	250	0.04	2.0	4840	350		
145	500	300	0.05	1.7	4840	350		
124	500	400	0.04	1.3	4840	350		
137	500	500	0.03	1.0	3800	350		
145	500	600	0.03	0.8	4840	350		
145	500	750	0.02	0.7	4840	350		
135	500	900	0.02	0.8	4350	350		
145	500	1200	0.02	0.4	4840	350		
145	500	1500	0.02	0.3	4840	350		
145	500	1800	0.01	0.3	4840	350		
124	500	2400	0.01	0.2	4840	350		
120	500	3000	0.01	0.2	4840	350		
120	500	4000	0.01	0.1	4840	350		
120	500	5000	0.01	0.1	4840	350		
198	500	100	0.17	5.0	4967	210	**MWM030..HS / MWM063**	**76**
260	500	150	0.16	3.3	5686	210		
253	500	200	0.12	2.5	6259	210		
231	500	250	0.09	2.0	6270	210		
255	500	300	0.10	1.7	6270	210		
255	500	400	0.08	1.3	6270	210		
236	500	500	0.06	1.0	6270	210		
271	500	600	0.06	0.8	6270	210		
271	500	750	0.05	0.7	6270	210		
271	500	900	0.04	0.8	6270	210		
271	500	1200	0.04	0.4	6270	210		
271	500	1500	0.03	0.3	6270	210		
271	500	1800	0.03	0.3	6270	210		
255	500	2400	0.02	0.2	6270	210		
236	500	3000	0.02	0.2	6270	210		
236	500	4000	0.02	0.1	6270	210		
150	500	5000	0.01	0.1	6270	210		
257	500	100	0.21	5.0	4967	350	**MWM040..HS / MWM063**	**76**
260	500	150	0.15	3.3	5686	350		
253	500	200	0.12	2.5	6259	350		
231	500	250	0.09	2.0	6270	350		
271	500	300	0.10	1.7	6270	350		
255	500	400	0.07	1.3	6270	350		

n_1=500 r/min f_s=1

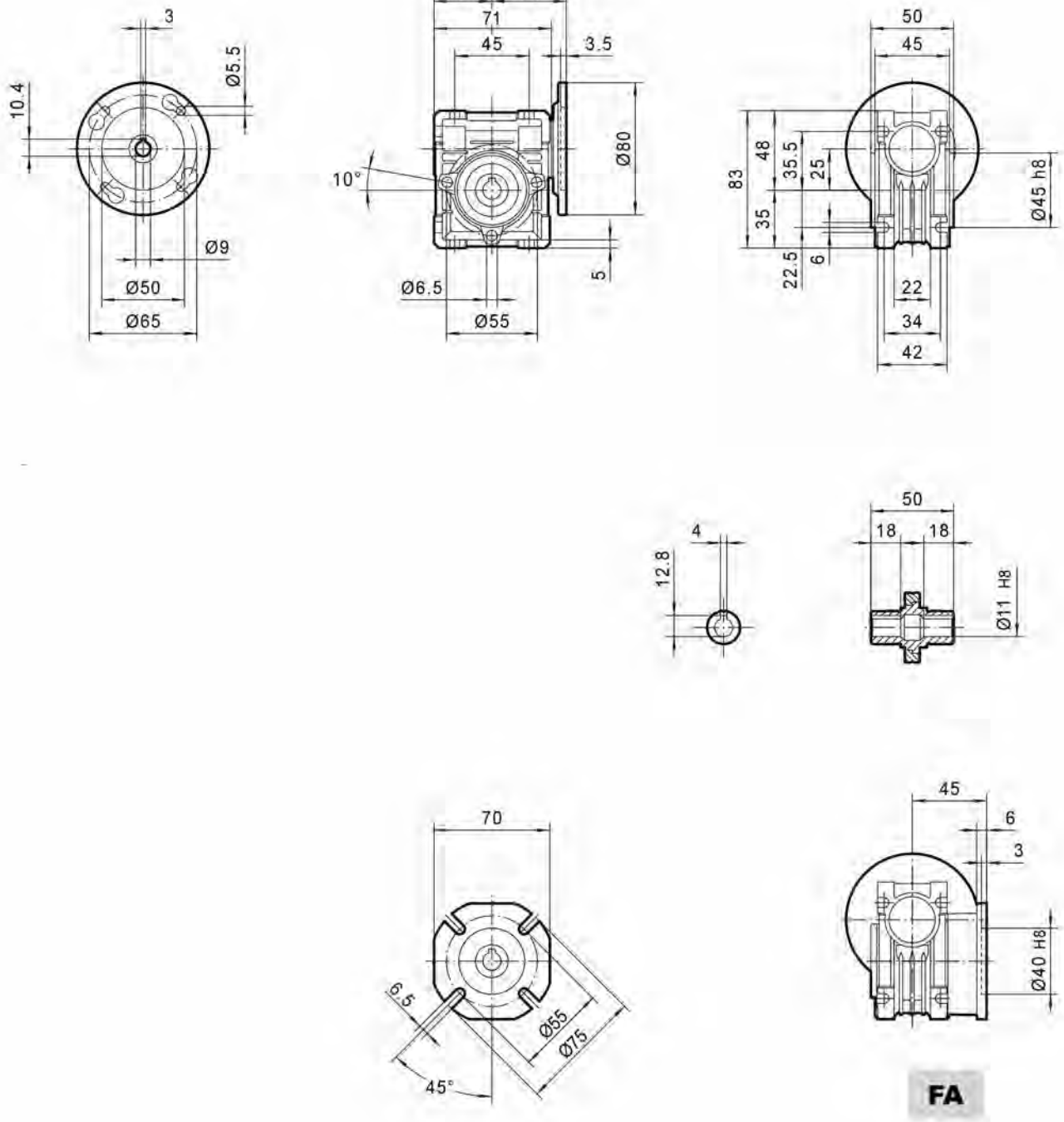
M_{2n} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]	F_{r2} [N]	F_{r1} [N]		Page
231	500	500	0.05	1.0	6270	350	**MWM040..HS / MWM063**	**76**
271	500	600	0.05	0.8	6270	350		
271	500	750	0.04	0.7	6270	350		
271	500	900	0.04	0.6	6270	350		
271	500	1200	0.03	0.4	6270	350		
271	500	1500	0.03	0.3	6270	350		
271	500	1800	0.03	0.3	6270	350		
255	500	2400	0.02	0.2	6270	350		
236	500	3000	0.02	0.2	6270	350		
236	500	4000	0.01	0.1	6270	350		
700	500	300	0.22	1.7	8180	490	**MWM050..HS / MWM090**	**76**
610	500	400	0.16	1.3	8180	490		
570	500	500	0.11	1.0	8180	490		
700	500	600	0.12	0.8	8180	490		
700	500	750	0.10	0.7	8180	490		
700	500	900	0.09	0.6	8180	490		
700	500	1200	0.08	0.4	8180	490		
700	500	1500	0.07	0.3	8180	490		
700	500	1800	0.06	0.3	8180	490		
610	500	2400	0.04	0.2	8180	490		
560	500	3000	0.03	0.2	8180	490		
560	500	4000	0.03	0.1	8180	490		
560	500	5000	0.02	0.1	8180	490		
927	500	100	0.72	5.0	8198	490	**MWM050..HS / MWM110**	**76**
1196	500	150	0.64	3.3	9384	490		
1139	500	200	0.47	2.5	10320	490		
1173	500	250	0.40	2.0	10320	490		
1265	500	300	0.40	1.7	10320	490		
1185	500	400	0.29	1.3	10320	490		
1173	500	500	0.22	1.0	10320	490		
1265	500	600	0.22	0.8	10320	490		
1265	500	750	0.19	0.7	10320	490		
1265	500	900	0.17	0.6	10320	490		
1265	500	1200	0.14	0.4	10320	490		
1265	500	1500	0.12	0.3	10320	490		
1265	500	1800	0.11	0.3	10320	490		
1185	500	2400	0.08	0.2	10320	490		
1100	500	3000	0.06	0.2	10320	490		
1100	500	4000	0.05	0.1	10320	490		
1100	500	5000	0.05	0.1	10320	490		
1127	500	100	0.88	5.0	8198	700	**MWM063..HS / MWM110**	**76**
1196	500	150	0.64	3.3	9384	700		
1139	500	200	0.47	2.5	10320	700		
1173	500	250	0.40	2.0	10320	700		
1265	500	300	0.40	1.7	10320	700		
1185	500	400	0.29	1.3	10320	700		
1173	500	500	0.22	1.0	10320	700		
1265	500	600	0.22	0.8	10320	700		
1265	500	750	0.18	0.7	10320	700		
1265	500	900	0.17	0.6	10320	700		
1265	500	1200	0.13	0.4	10320	700		
1265	500	1500	0.12	0.3	10320	700		
1265	500	1800	0.10	0.3	10320	700		
1185	500	2400	0.07	0.2	10320	700		
1100	500	3000	0.06	0.2	10320	700		
1100	500	4000	0.05	0.1	10320	700		
1100	500	5000	0.04	0.1	10320	700		

8. OUTLINE DIMENSION SHEET

8.1 **MWM** /Outline dimension

MRV025..(IEC)

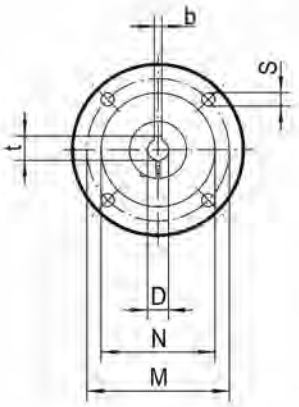
Input adapters

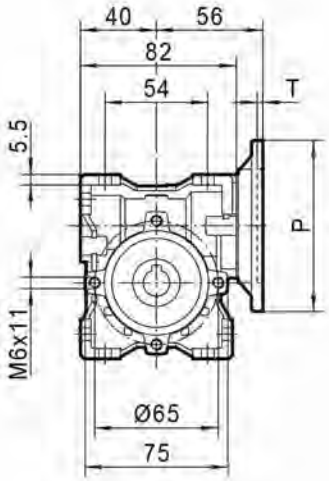


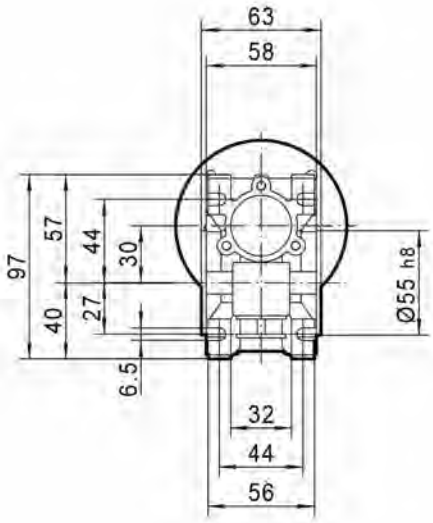
Weight without motor ≈ 0.7kg

MWM030..(IEC)

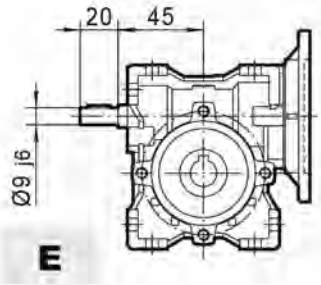
Input adapters

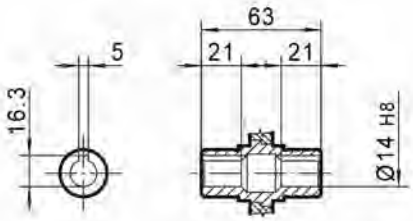


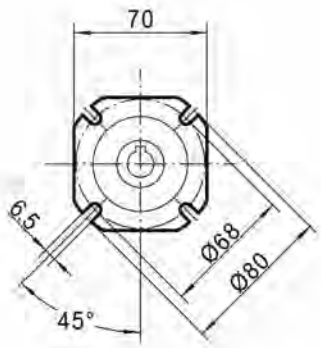


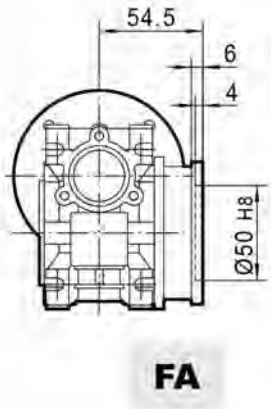


Worm output shaft







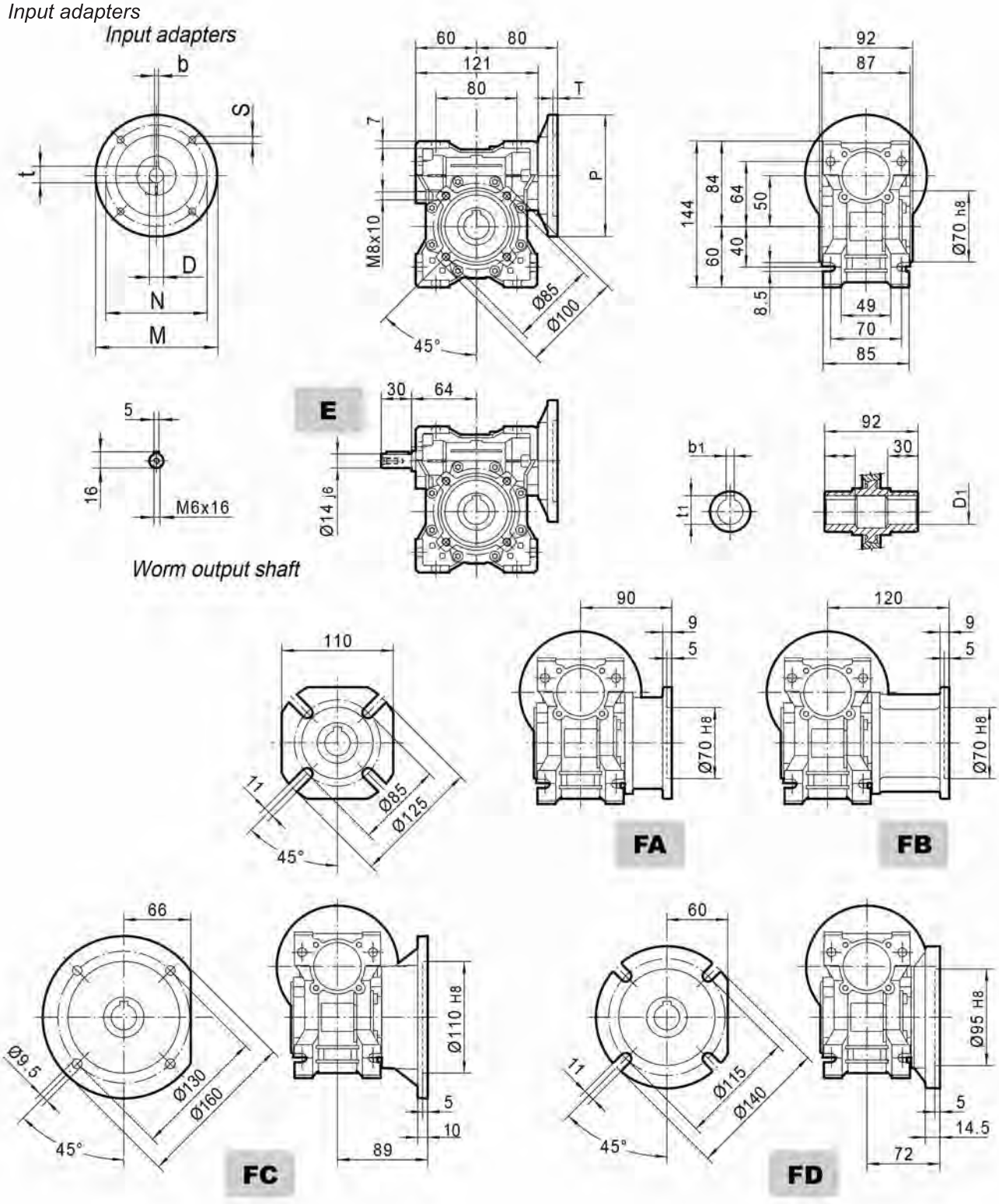


IEC	D_{E8}	b	t	P	M	N	S	T
56B5	9	3	10.4	120	100	80	7	4
56B14	9	3	10.4	80	65	50	5.5	4
63B5	11	4	12.8	140	115	95	9	4
63B14	11	4	12.8	90	75	60	5.5	4

Weight without motor ≈ 1.2kg

MWM040..(IEC)

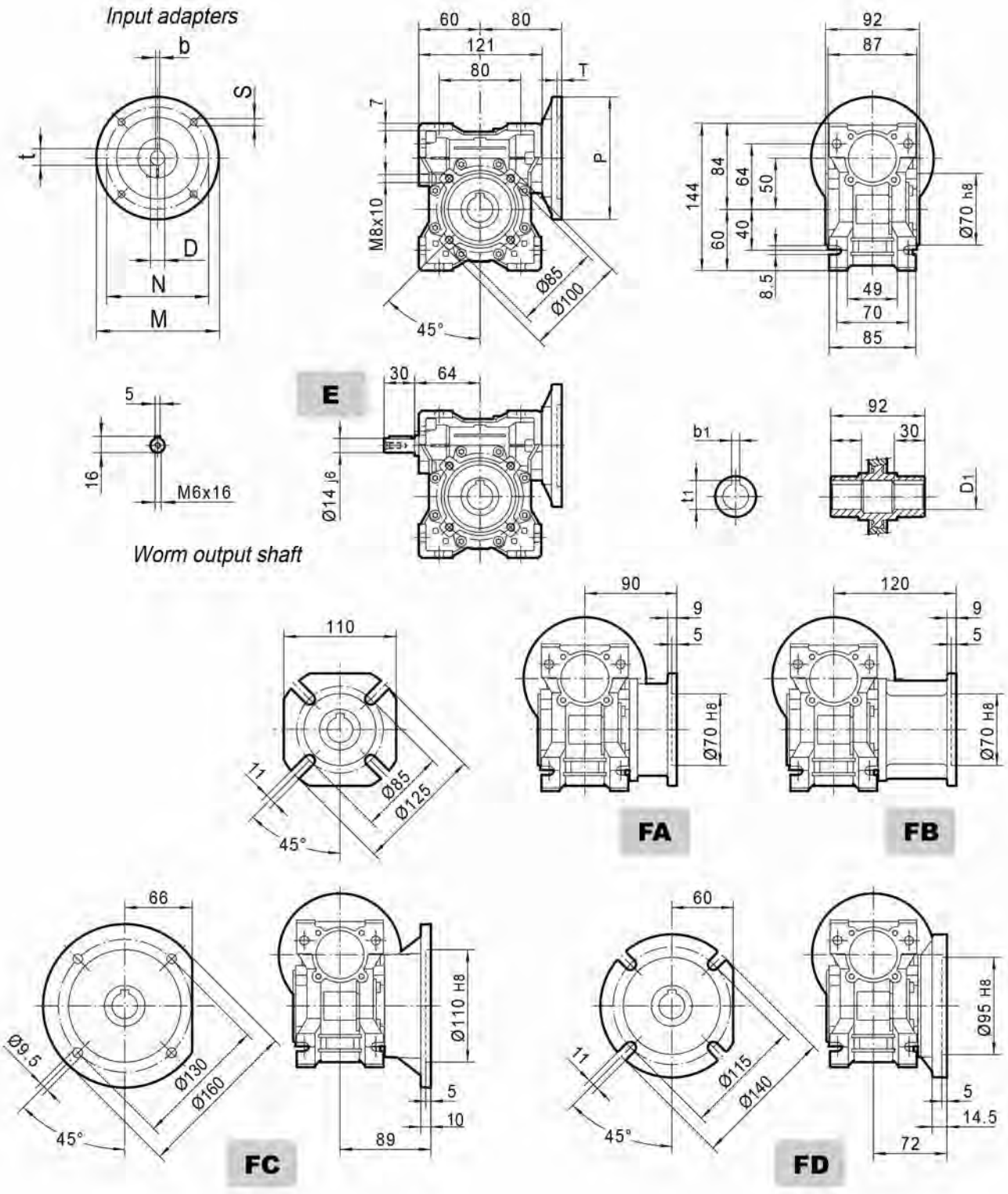
Input adapters



IEC	D_{E8}	b	t	P	M	N	S	T	$D1_{H8}$	b1	t1
56B5	9	3	10.4	120	100	80	7	4	18	6	20.8
63B5	11	4	12.8	140	115	95	9	4	19*	6*	21.8*
63B14	11	4	12.8	90	75	60	5.5	4	* Only on request		
71B5	14	5	16.3	160	130	110	9	4			
71B14	14	5	16.3	105	85	70	7	4			

Weight without motor ≈ 2.3kg

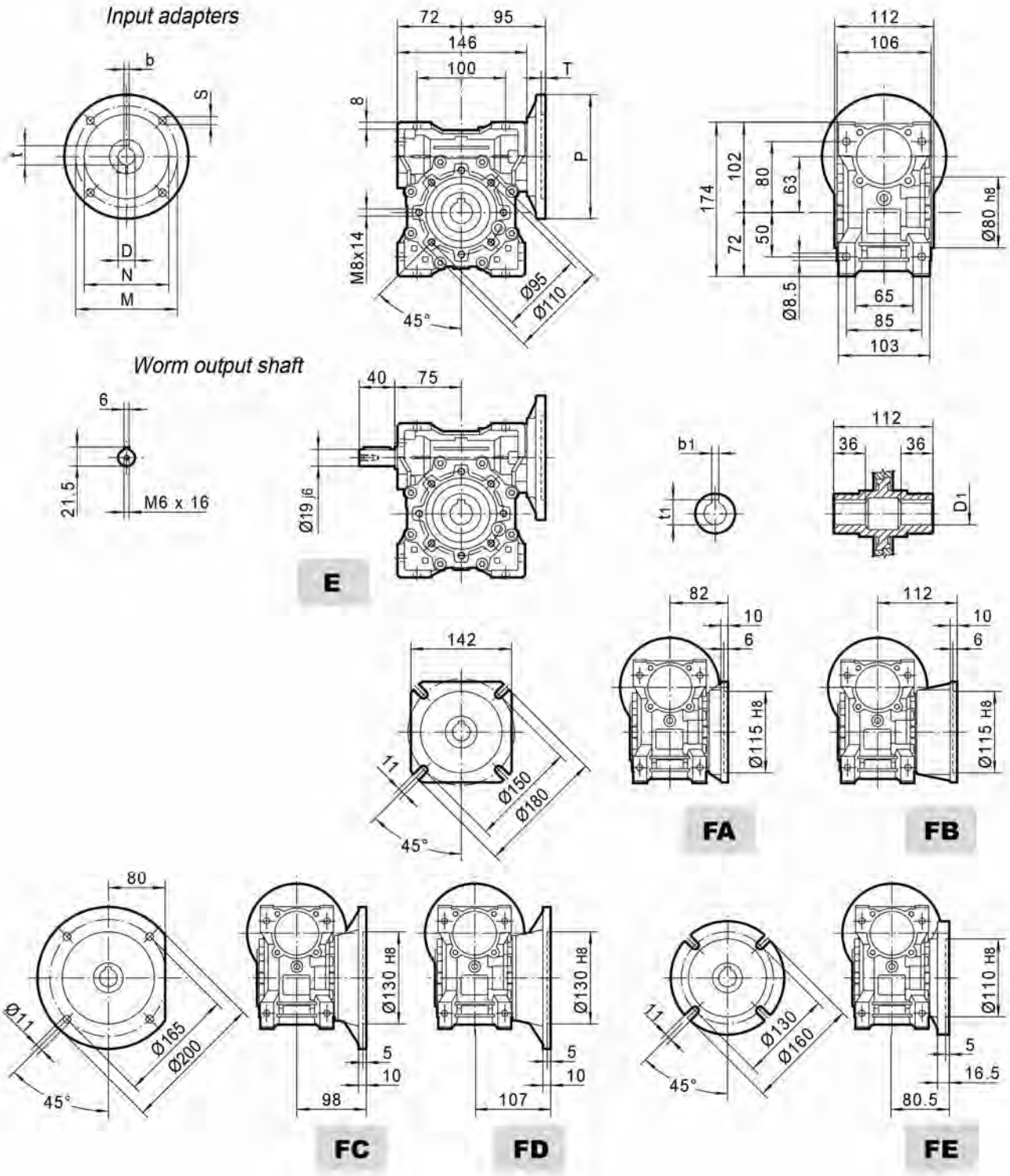
MWM050..(IEC)



IEC	D_{E8}	b	t	P	M	N	S	T	$D1_{H8}$	b1	t1
63B5	11	4	12.8	140	115	95	9	4	25	8	28.3
71B5	14	5	16.3	160	130	110	9	4	24*	8*	27.3*
71B14	14	5	16.3	105	85	70	7	4	* Only on request		
80B5	19	6	21.8	200	165	130	11	4			
80B14	19	6	21.8	120	100	80	7	4			

Weight without motor ≈ 3.5kg

MWM063..(IEC)

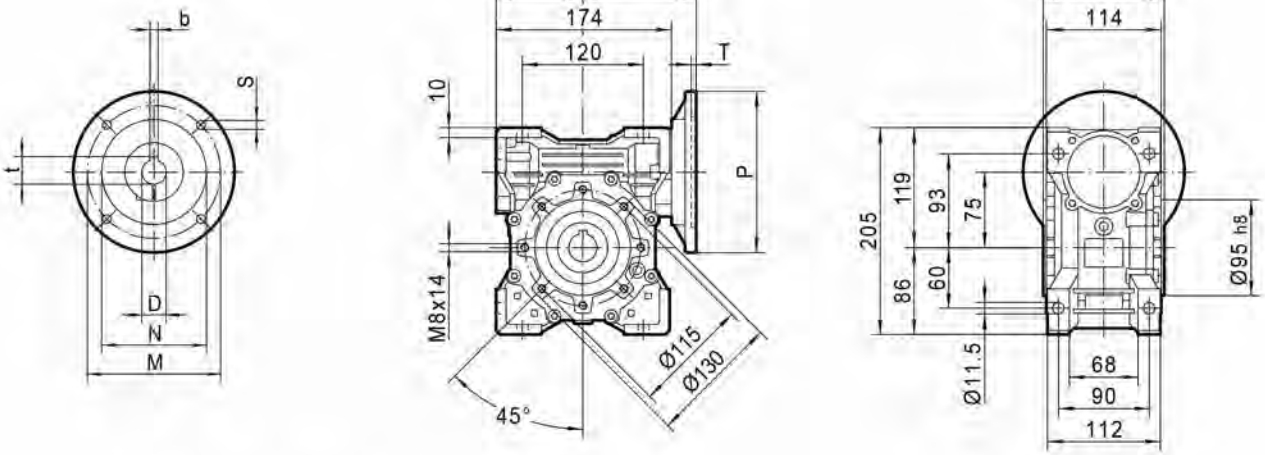


IEC	D_{E8}	b	t	P	M	N	S	T	D1 H8	b1	t1
71B5	14	5	16.3	160	130	110	9	4	25	8	28.3
71B14	14	5	16.3	105	85	70	7	4	28*	8*	31.3*
80B5	19	6	21.8	200	165	130	11	4			
80B14	19	6	21.8	120	100	80	7	4	* Only on request		
90B5	24	8	27.3	200	165	130	11	4			
90B14	24	8	27.3	140	115	95	9	4			

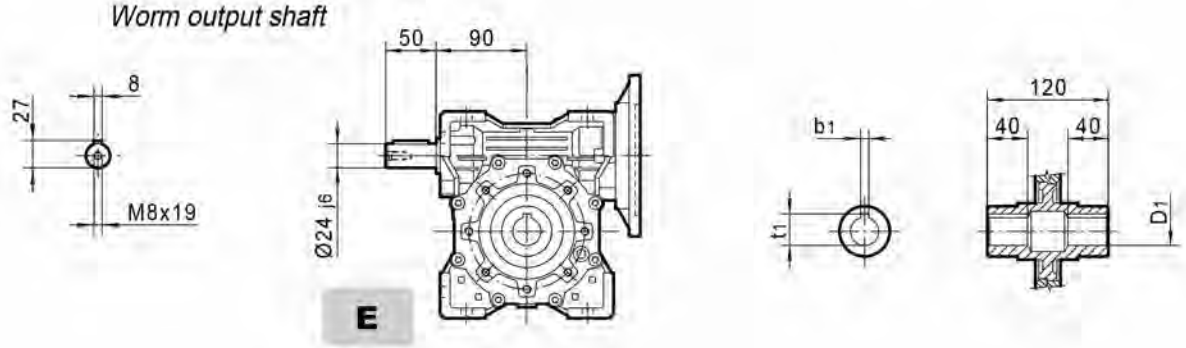
Weight without motor ≈ 6.2kg

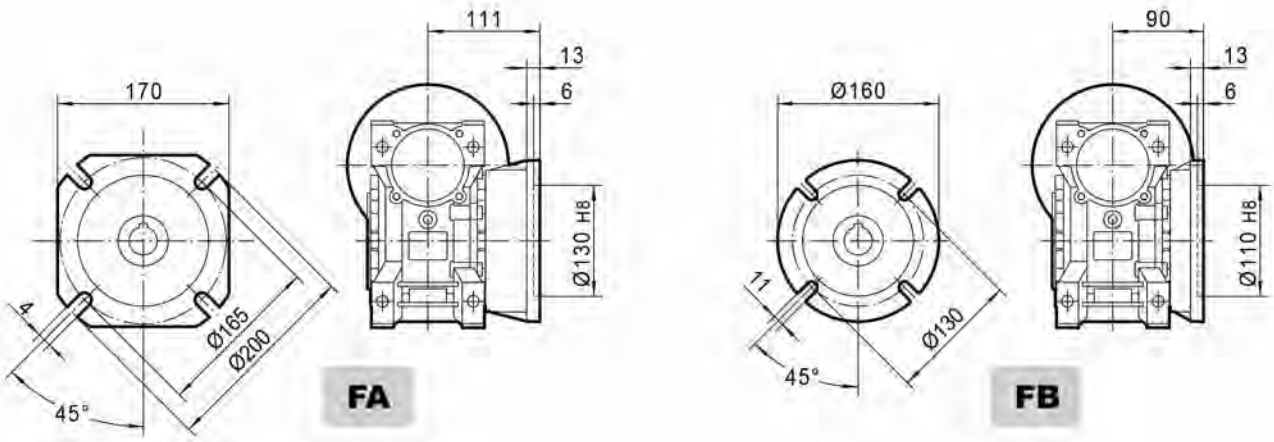
MWM075..(IEC)

Input adapters



Worm output shaft

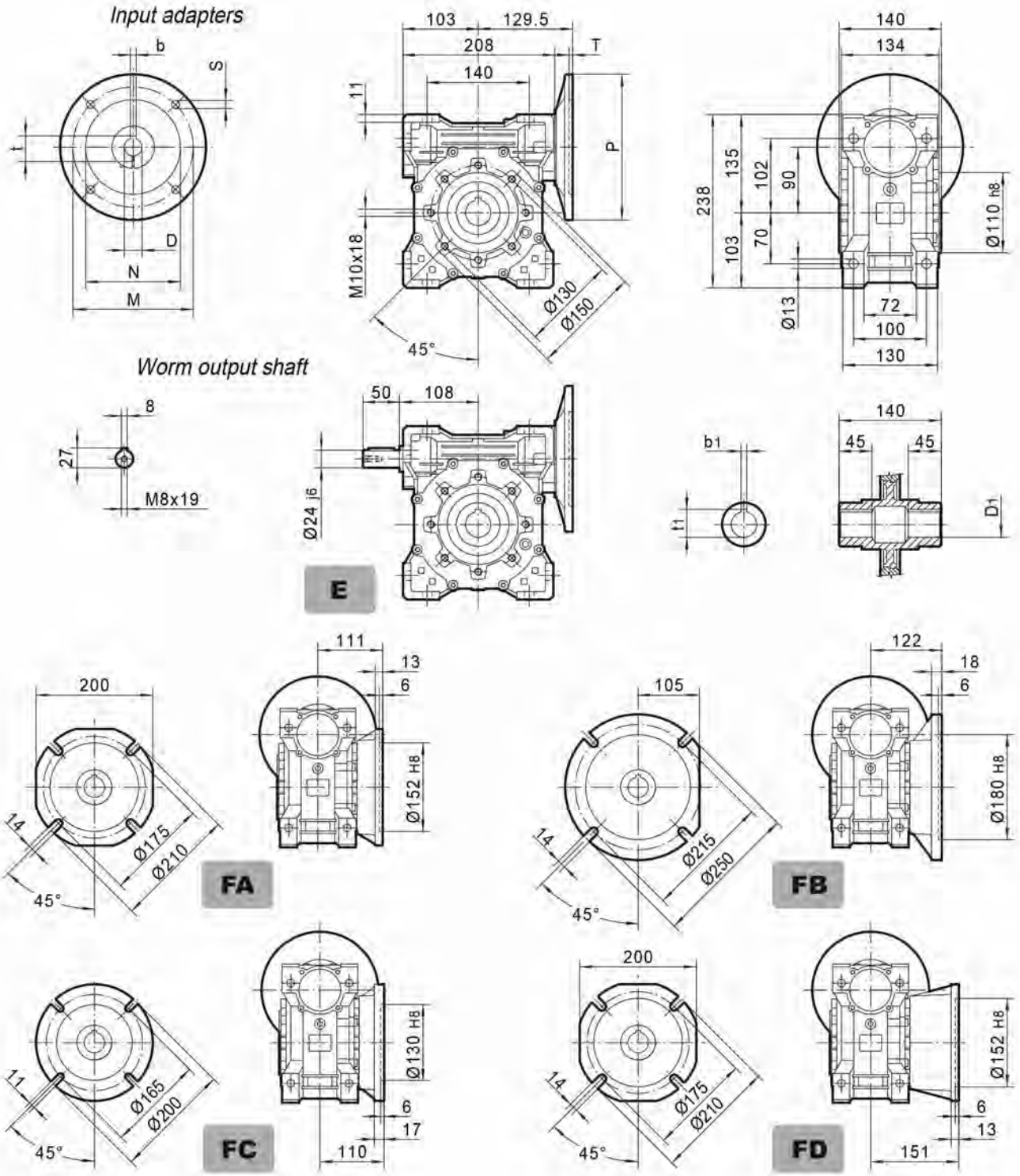




IEC	D_{E8}	b	t	P	M	N	S	T	D1 H8	b1	t1
71B5	14	5	16.3	160	130	110	9	4	28	8	31.3
80B5	19	6	21.8	200	165	130	11	4	35*	10*	38.3*
80B14	19	6	21.8	120	100	80	7	4			
90B5	24	8	27.3	200	165	130	11	4			
90B14	24	8	27.3	140	115	95	9	4	* Only on request		
100/112B5	28	8	31.3	250	215	180	13.5	4.5			
100/112B14	28	8	31.3	160	130	110	9	4.5			

Weight without motor ≈ 9kg

MWM090..(IEC)

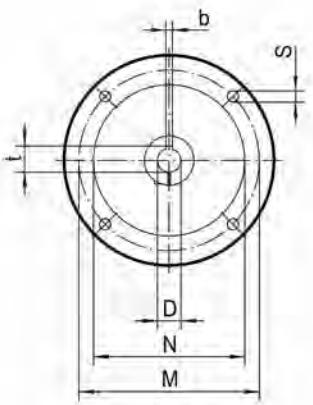


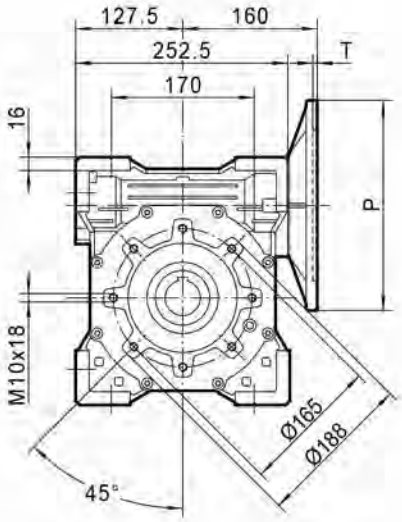
IEC	D_{E8}	b	t	P	M	N	S	T	$D1_{H8}$	b1	t1
80B5	19	6	21.8	200	165	130	11	4	35	10	38.3
80B14	19	6	21.8	120	100	80	7	4	38*	10*	41.3*
90B5	24	8	27.3	200	165	130	11	4			
90B14	24	8	27.3	140	115	95	9	4	* Only on request		
100/112B5	28	8	31.3	250	215	180	13.5	4.5			
100/1120B14	28	8	31.3	160	130	110	9	4.5			

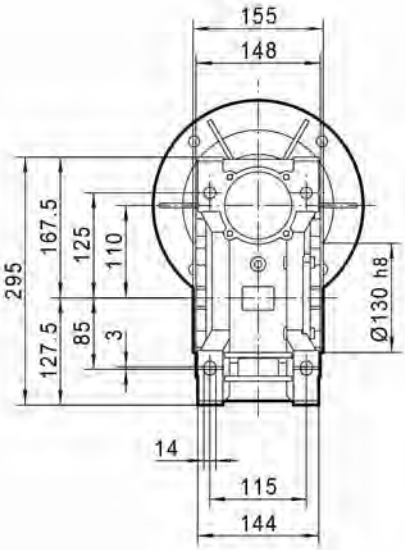
Weight without motor ≈ 13kg

MWM110..(IEC)

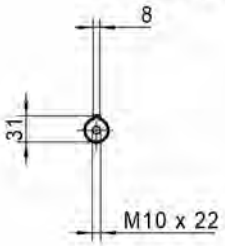
Input adapters

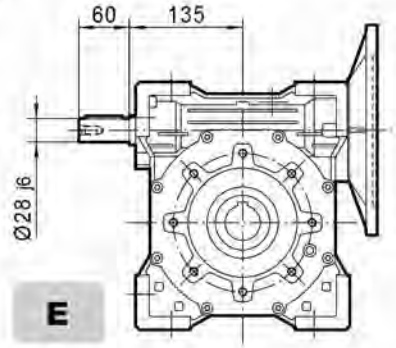


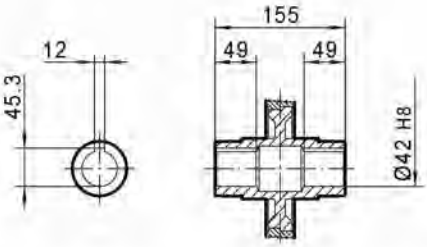


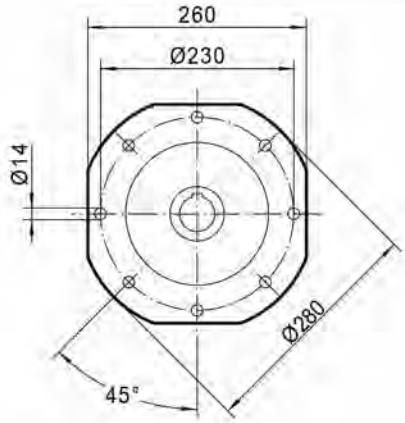


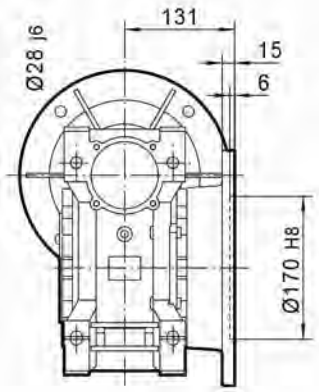
Worm output shaft

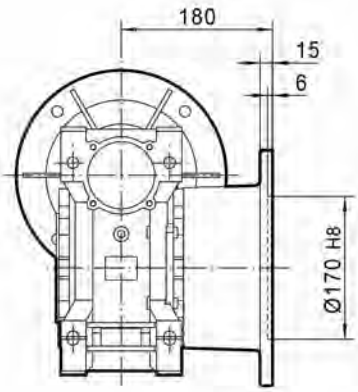












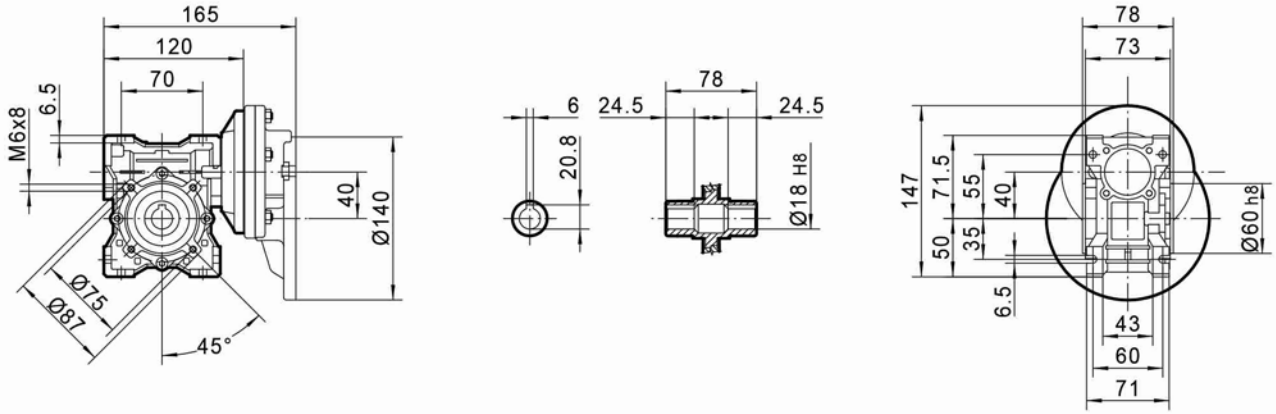
IEC	D_{E8}	b	t	P	M	N	S	T
80B5	19	6	21.8	200	165	130	11	4
90B5	24	8	27.3	200	165	130	11	4
100B5	28	8	31.3	250	215	180	14	4.5
112B5	28	8	31.3	250	215	180	14	4.5
132B5	38	10	41.3	300	265	230	14	4.5

Weight without motor ≈ 21kg

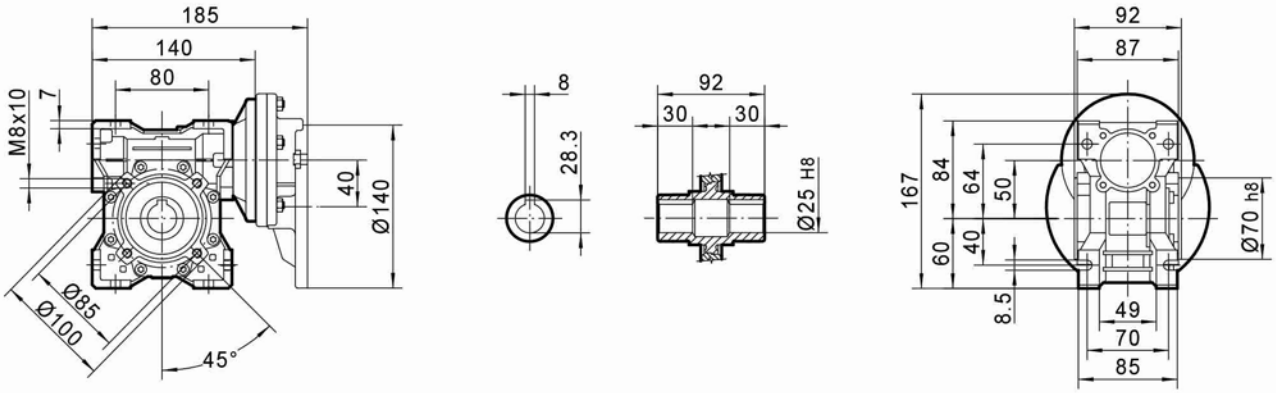
8.2 PC - MWM.. /Outline dimension

- For the dimensions of the output flanges, please refer to pages 65-72.
- For tne dimensions of the hollow shafts , please refer to pages 65-72.
- For tne dimensions of the double extention warm shafts, please refer to page 76.

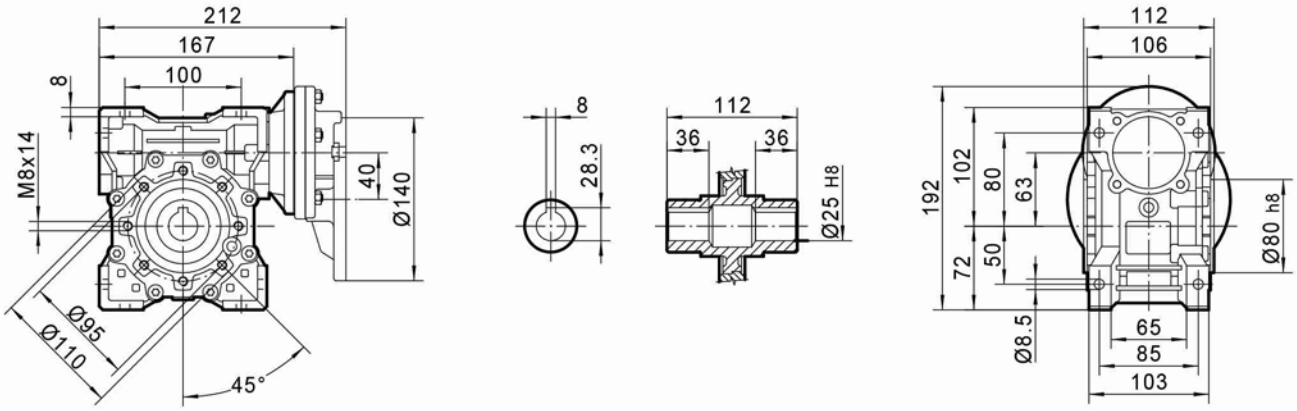
PC063 - MWM040



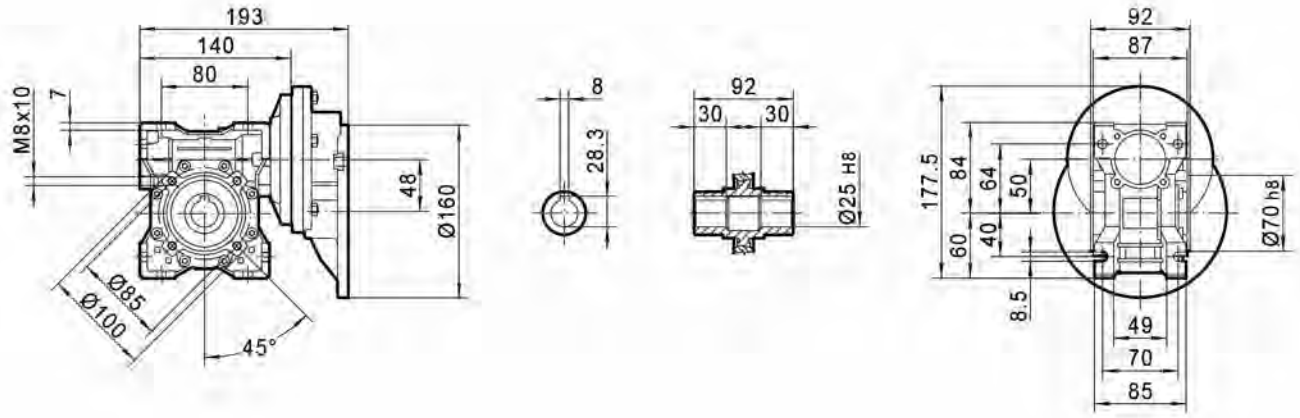
PC063 - MWM050



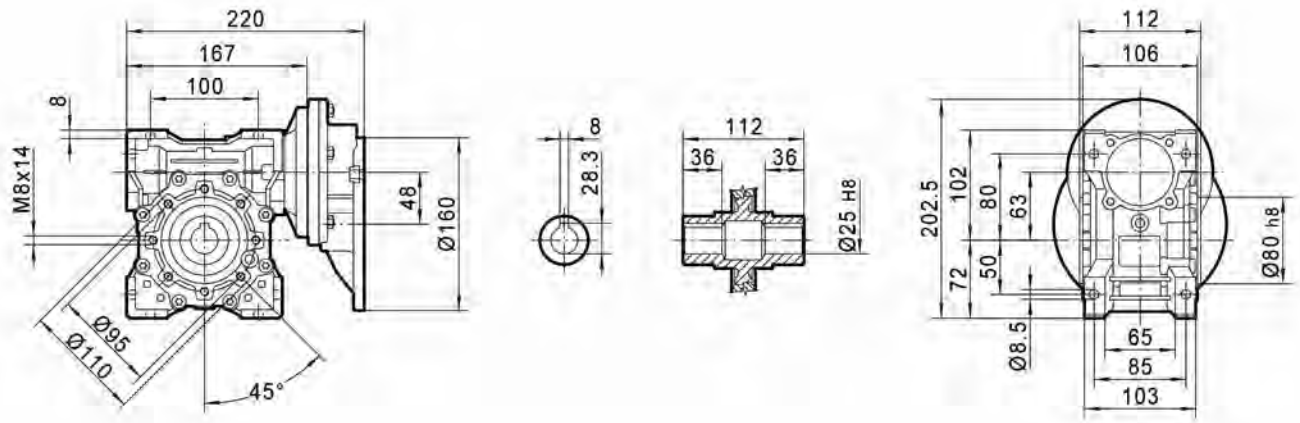
PC063 - MWM063



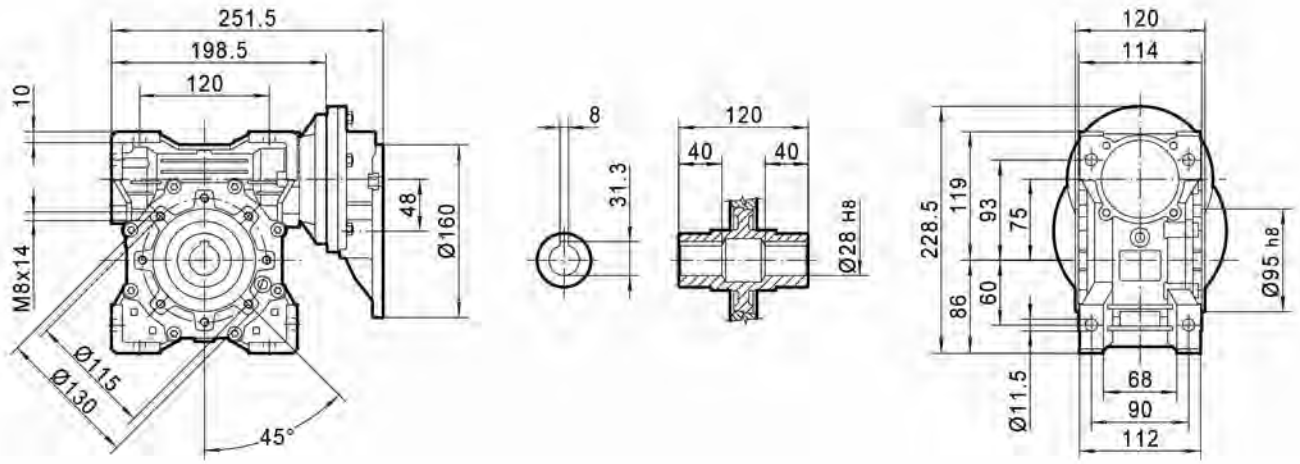
PC071 - MWM050



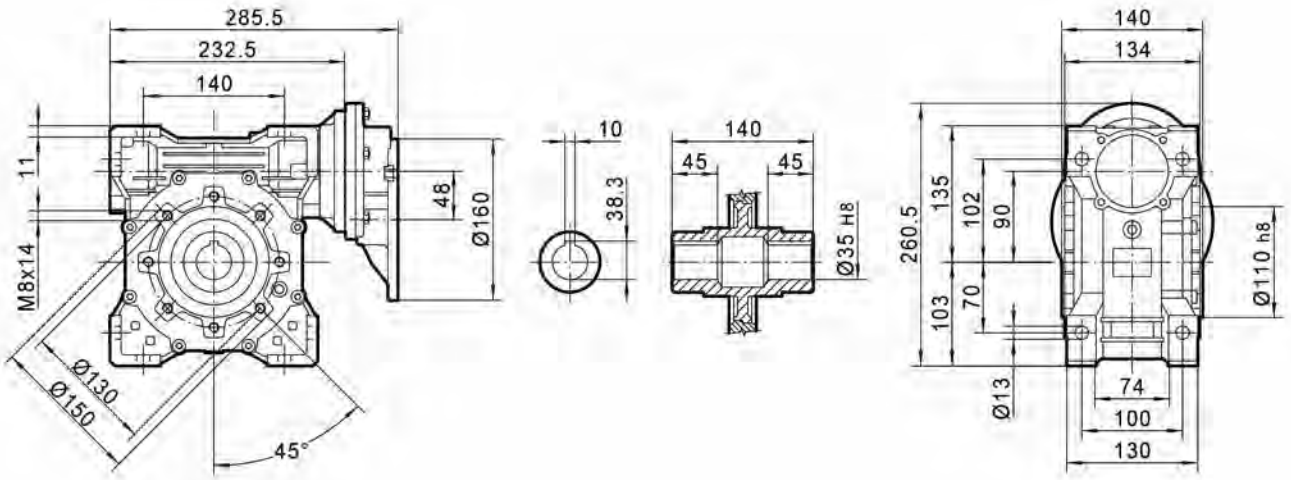
PC071 - MWM063



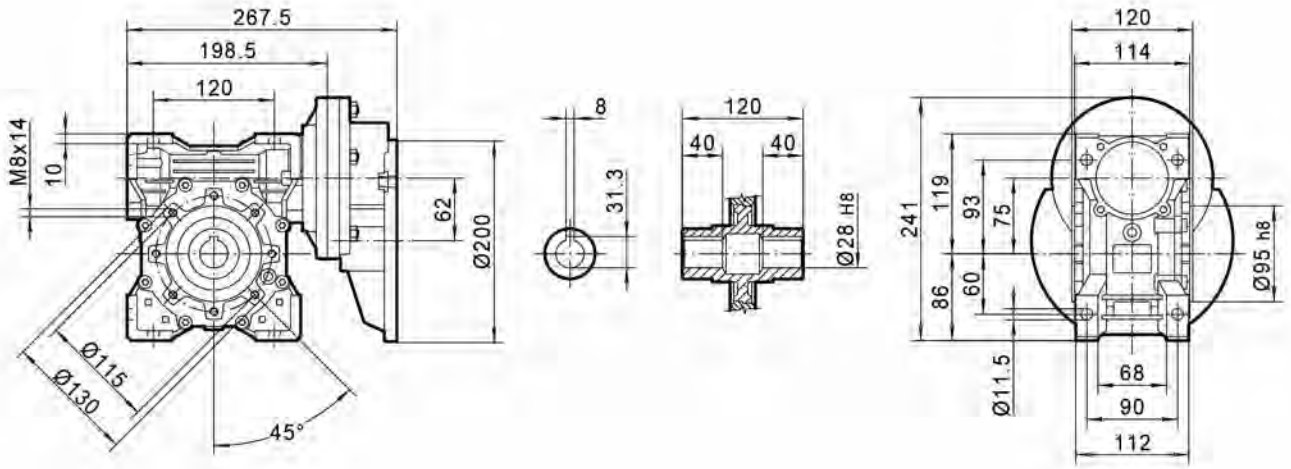
PC071 - MWM075



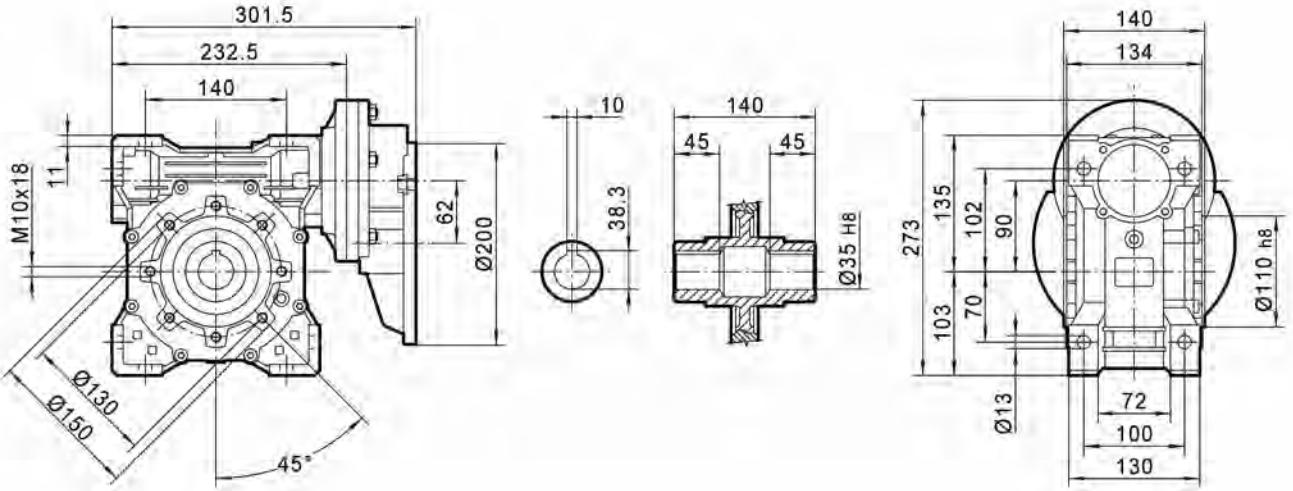
PC071 - MWM090



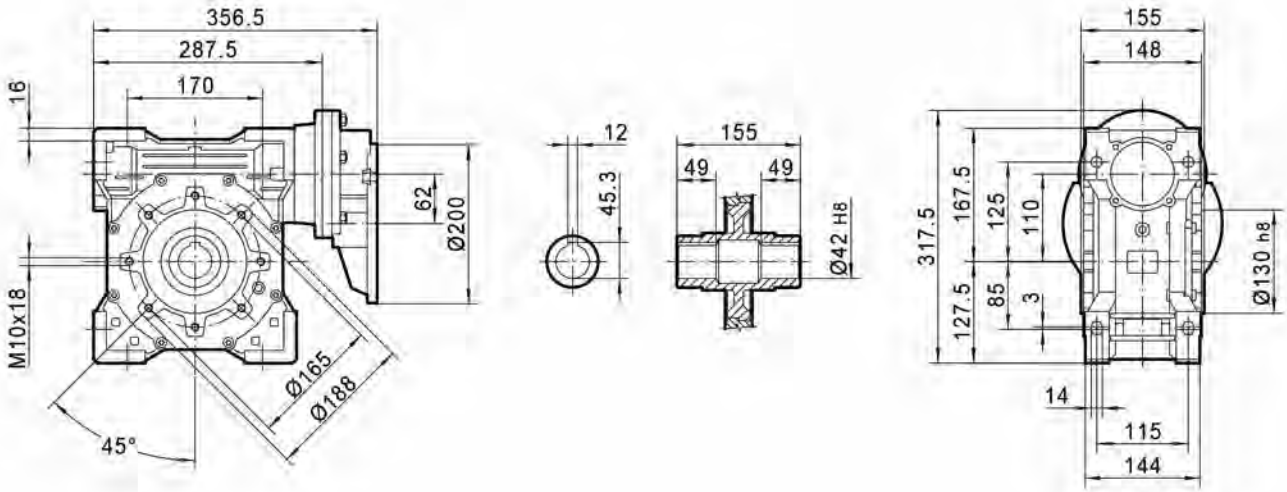
PC080 - MWM075



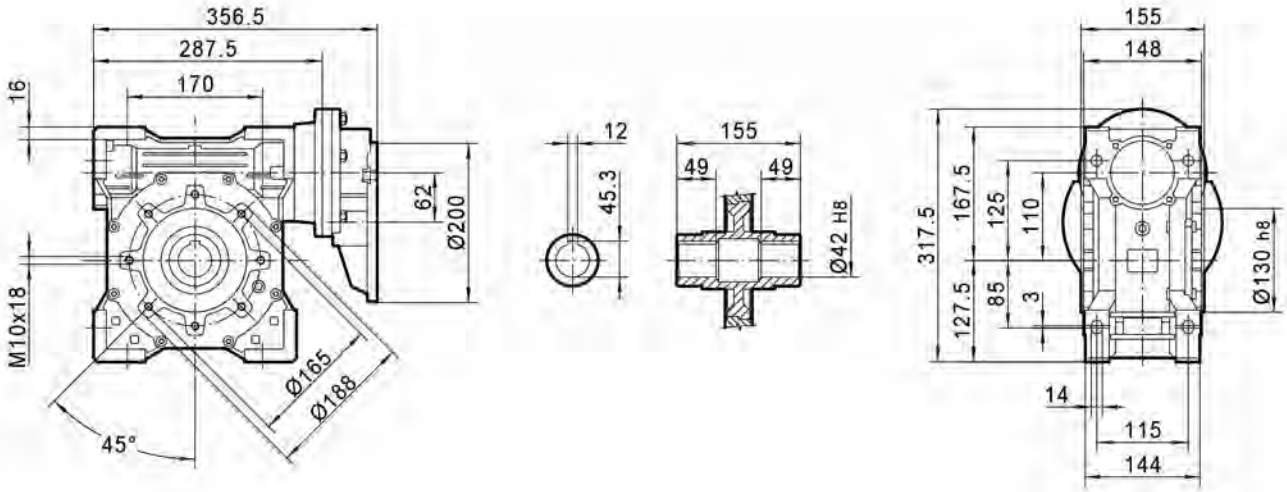
PC080 - MWM090



PC080 - MWM110



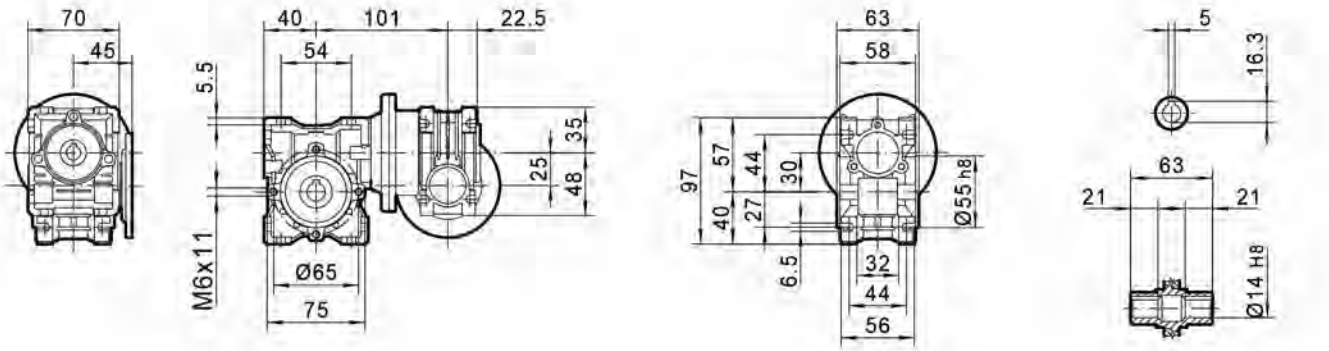
PC090 - MWM110



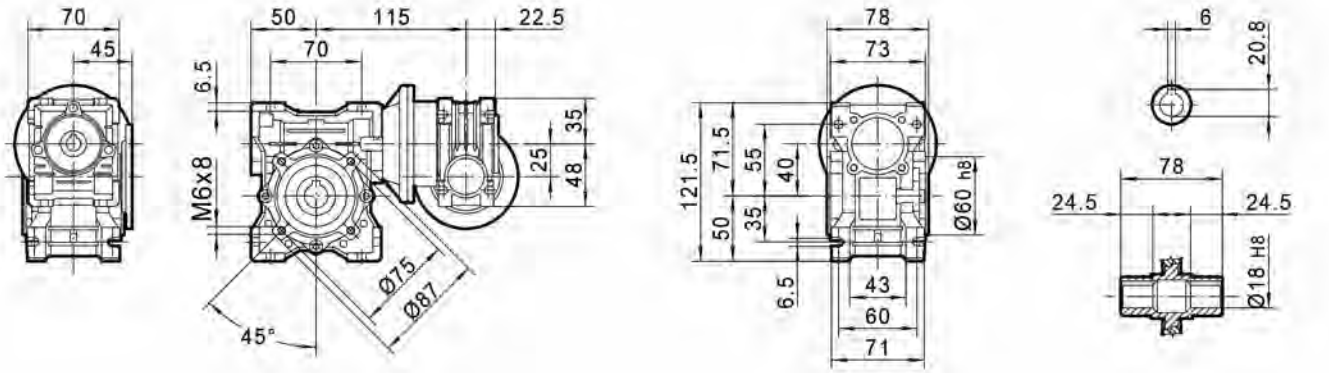
8.3 MWM / MWM.. Outline dimension

- For the dimensions of the output flanges, please refer to pages 65-72.
- For the dimensions of the hollow shafts , please refer to pages 65-72.
- For the dimensions of the double extention warm shafts, please refer to page 76.

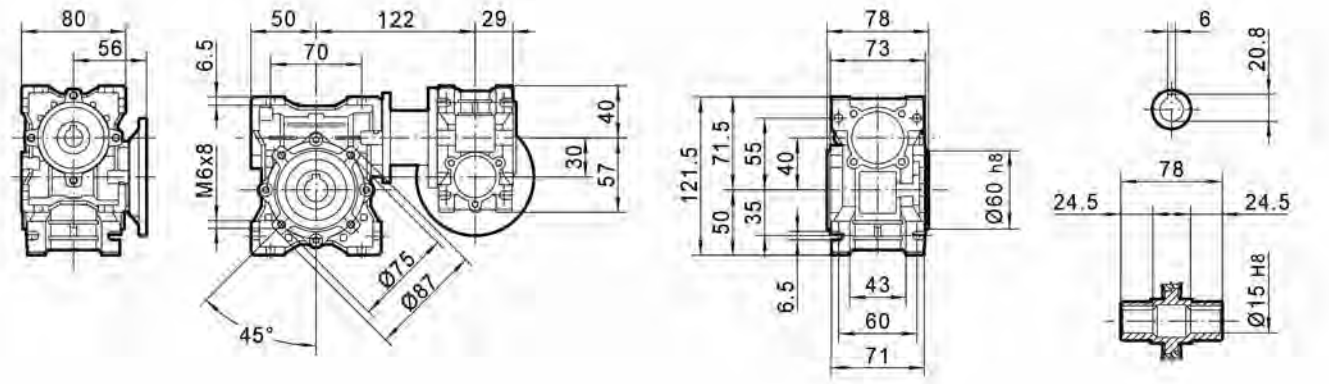
MRV025 / 030



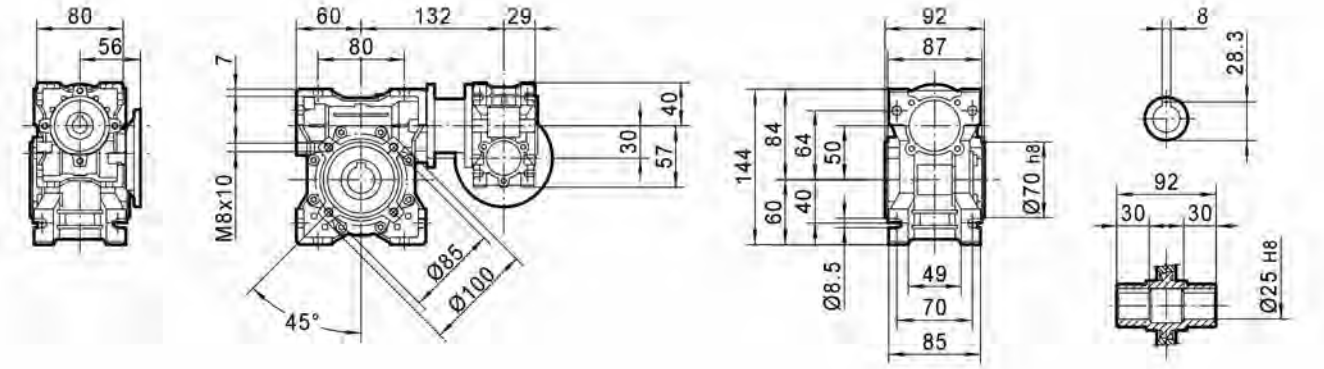
MRV025 / 040



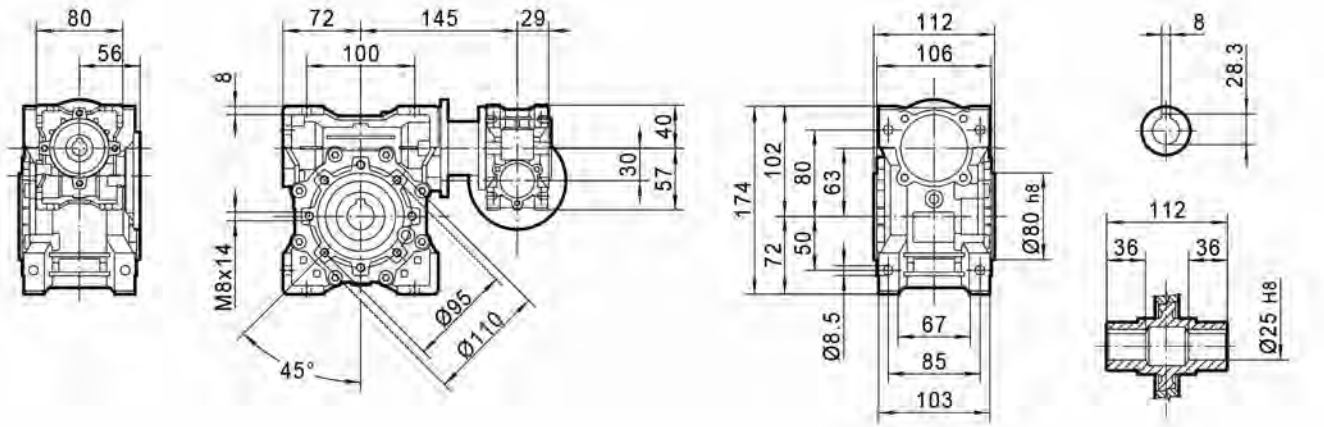
MWM030 / 040



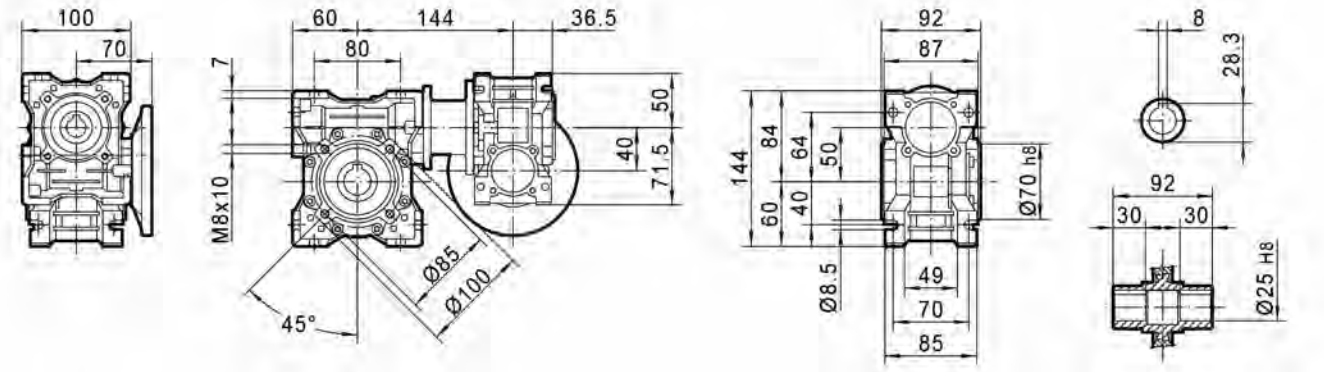
MWM030 / 050



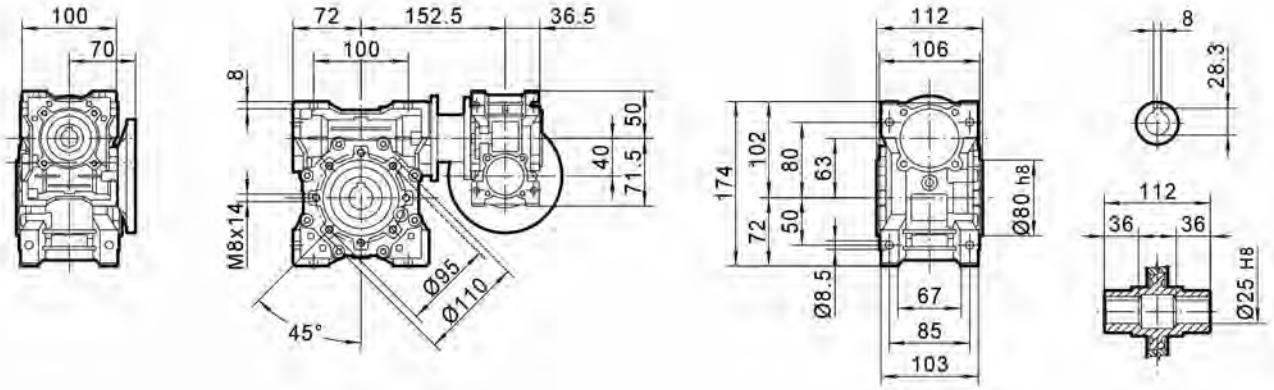
MWM040 / 063



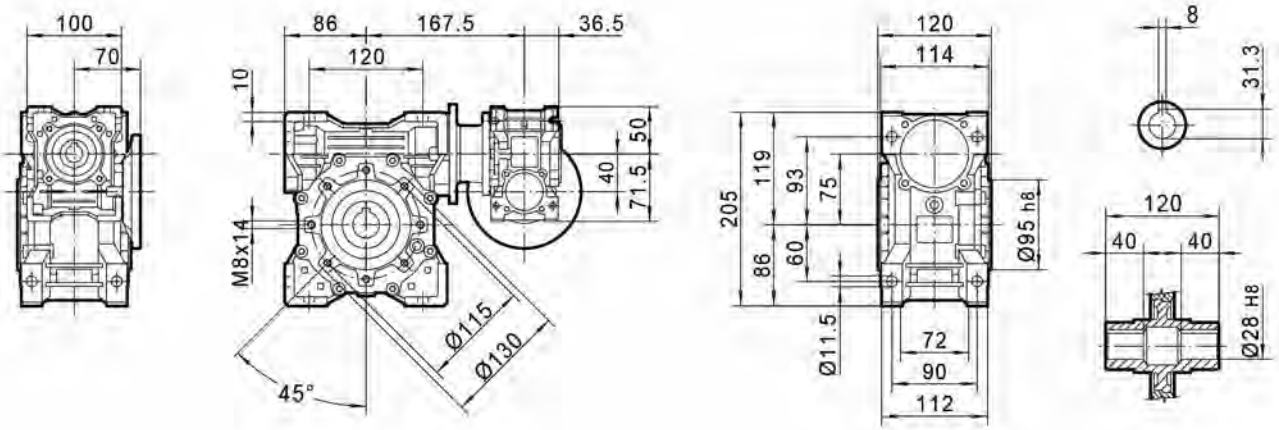
MWM040 / 050



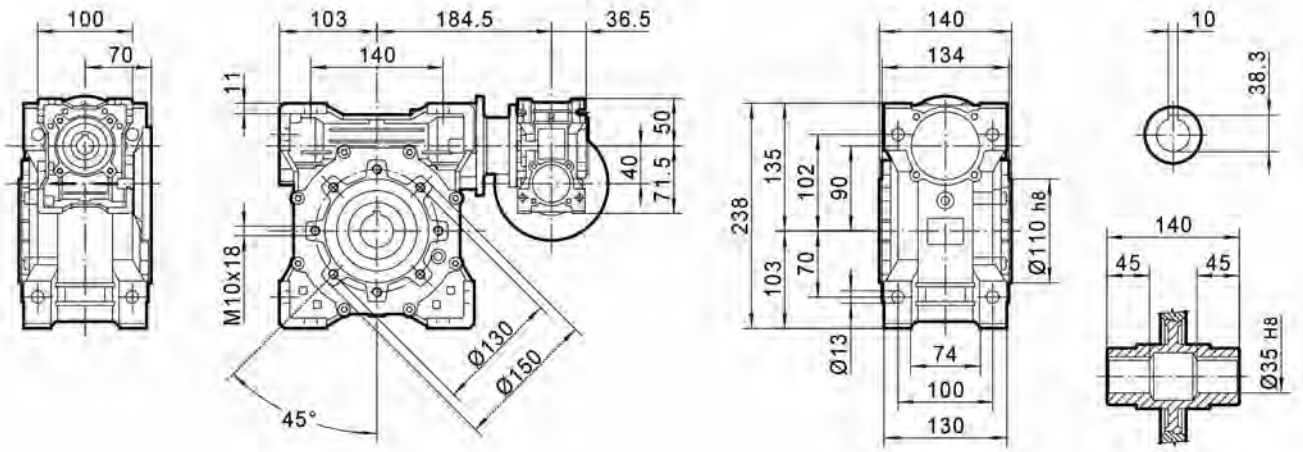
MWM040 / 063



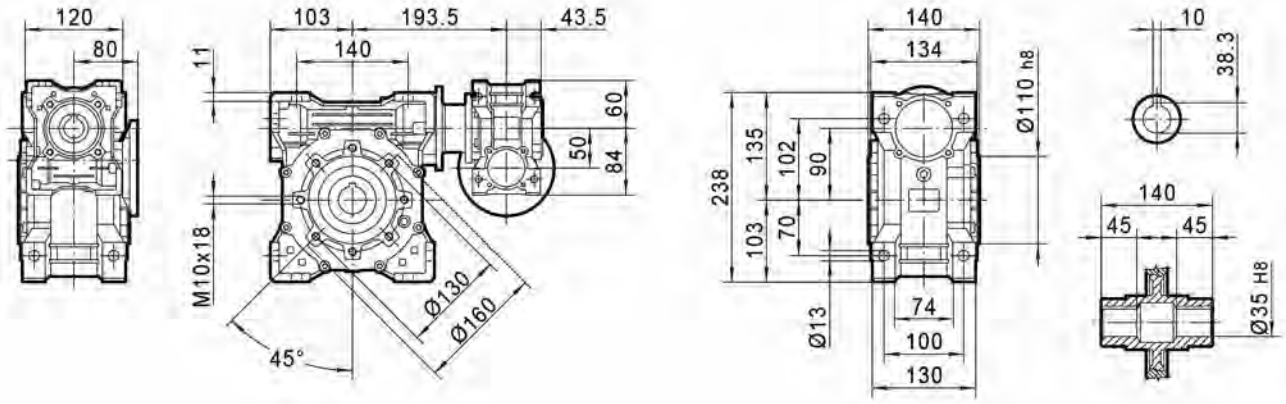
MWM040 / 075



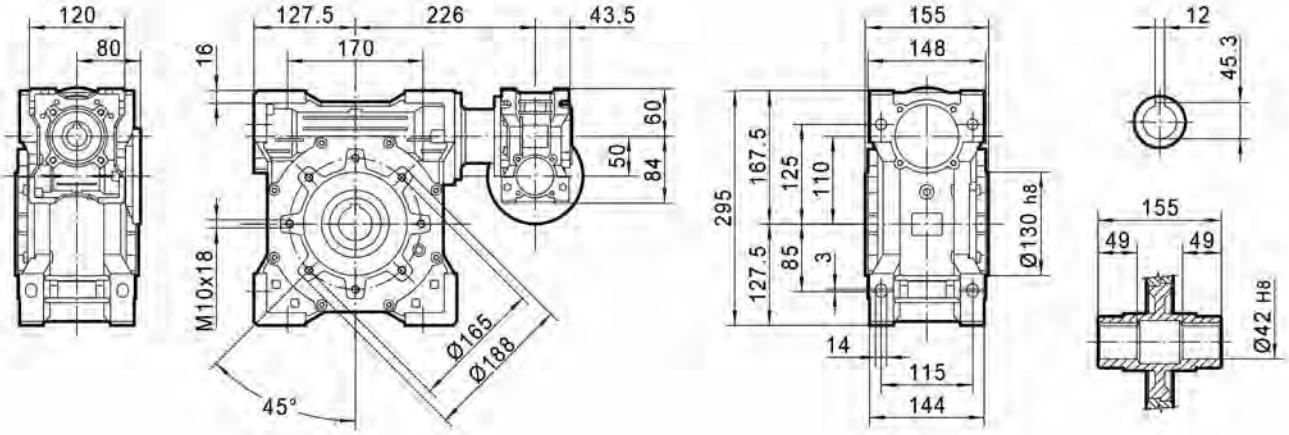
MWM040 / 090



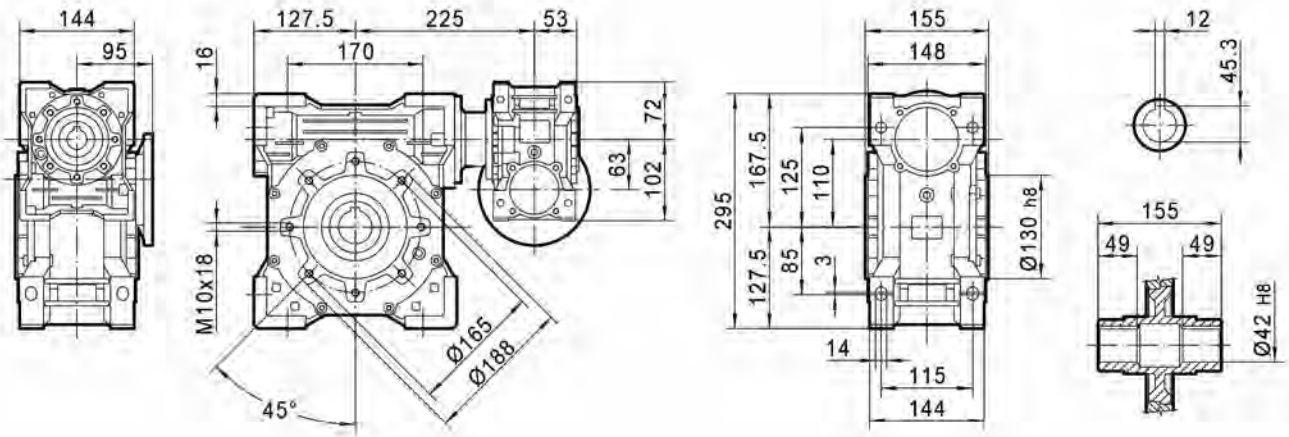
MWM050 / 090



MWM050 / 110

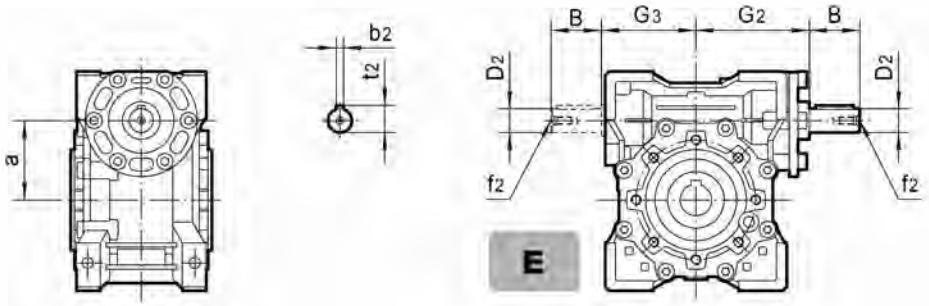


MWM063 / 110



8.4 MWM..HS / Outline dimension

MWM..HS WORM GEAR UNITS

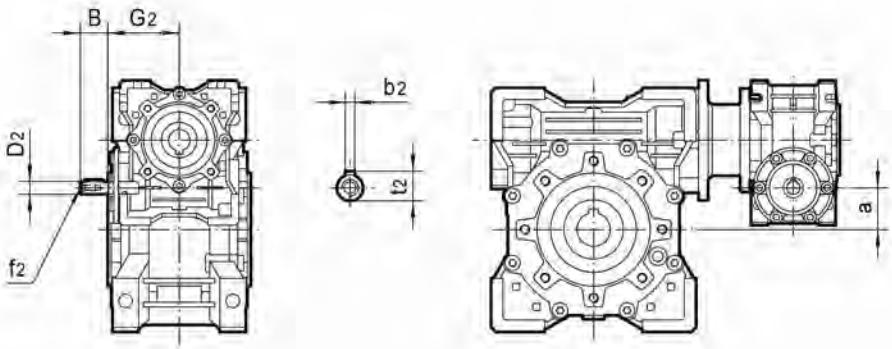


MWM..HS	030	040	050	063	075	090	110	130	150
B	20	23	30	40	50	50	60	80	80
D2 J6	9	11	14	19	24	24	28	30	35
G2	52	60	74	90	105	125	142	162	195
G3	45	53	64	75	90	109	135	155	175
a	30	40	50	63	75	90	110	130	150
b2	3	4	5	6	8	8	8	8	10
f2	-	-	M6	M6	M8	M8	M10	M10	M10
t2	10.2	12.5	16	21.5	27	27	31	33	38

For the missing dimensions please refer to page 78-88

8.5 MWM..HS / MWM.. Outline dimension

MWM..HS / MWM

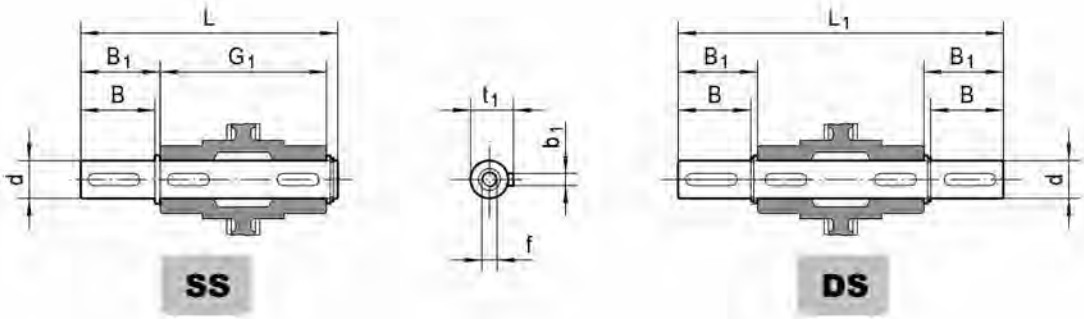


MWM-HS / MWM	B	$D_{2\ j6}$	G2	a	b_2	f_2	t_2
030 / 040	20	9	52	10	3	-	10.2
030 / 050	20	9	52	20	3	-	10.2
030 / 063	20	9	52	33	3	-	10.2
040 / 050	23	11	60	10	4	-	12.5
040 / 063	23	11	60	23	4	-	12.5
040 / 075	23	11	50	35	4	-	12.5
040 / 090	23	11	60	50	4	-	12.5
050 / 090	30	14	74	40	5	M6	16
050 / 110	30	14	74	60	5	M6	16
063 / 110	40	19	90	47	6	M6	21.5
063 / 130	40	19	90	67	6	M6	21.5
063 / 150	40	19	90	87	6	M6	21.5

For the missing dimensions please refer to page 78-88

9. ACCESSORIES

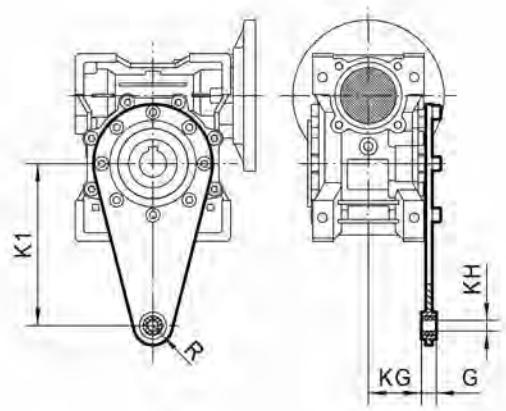
9.1 Output Shafts



	d h6	B	B1	G1	L	L1	f	b1	t1
MRV025	11 g6	23	25.5	50	81	101	-	4	12.5
	9 *	25 *	30 *	50	85.5 *	101	-	3 *	10.2 *
MWM030	14	30	32.5	63	102	128	M6	5	16
MWM040	18	40	43	78	128	164	M6	6	20.5
MWM050	25	50	53.5	92	153	199	M10	8	28
MWM063	25	50	53.5	112	173	219	M10	8	28
MWM075	28	60	63.5	120	192	247	M10	8	31
MWM090	35	80	84.5	140	234	309	M12	10	38
MWM110	42	80	84.5	155	249	324	M16	12	45
MWM130	45	80	85	170	265	340	M16	14	48.5
MWM150	50	82	87	200	297	374	M16	14	53.5

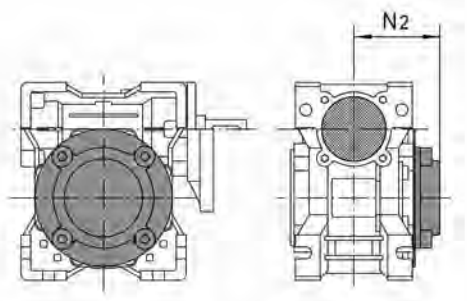
*Only on request

9.2 Torque Arm



	K1	G	KG	KH	R
MWM025	70	14	17.5	8	15
MWM030	85	14	24	8	15
MWM040	100	14	31.5	10	18
MWM050	100	14	38.5	10	18
MWM063	150	14	49	10	18
MWM075	200	25	47.5	20	30
MWM090	200	25	57.5	20	30
MWM110	250	30	62	25	35
MWM130	250	30	69	25	35
MWM150	250	30	84	25	35

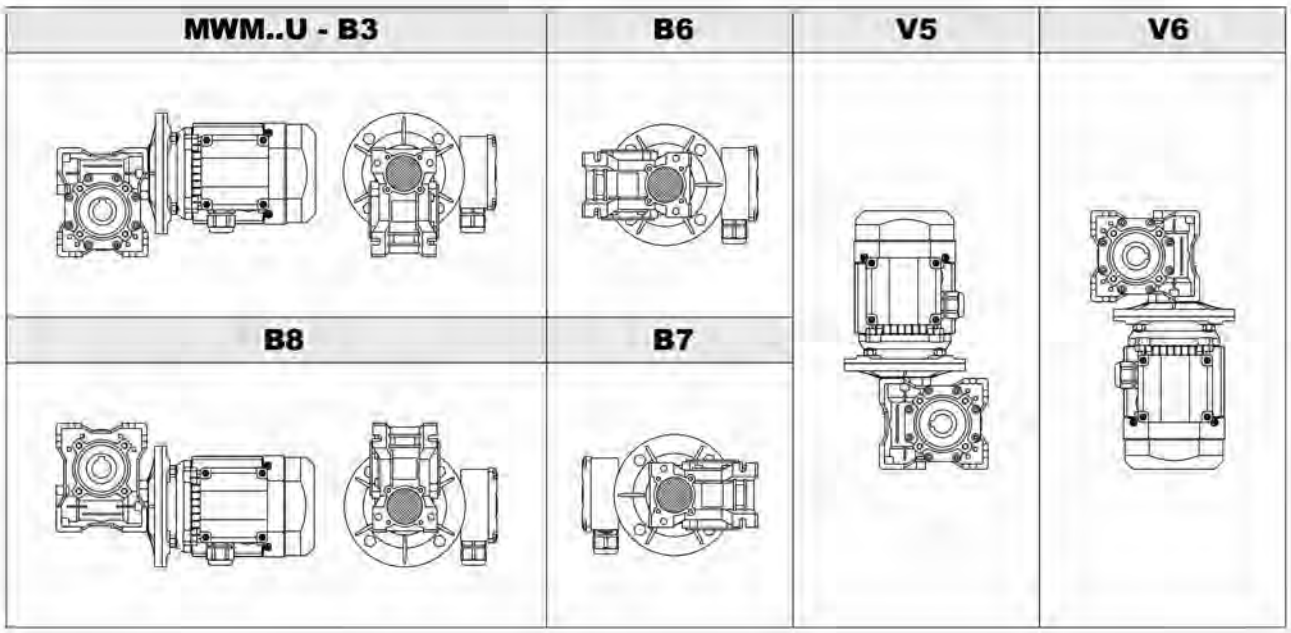
9.3 Cover



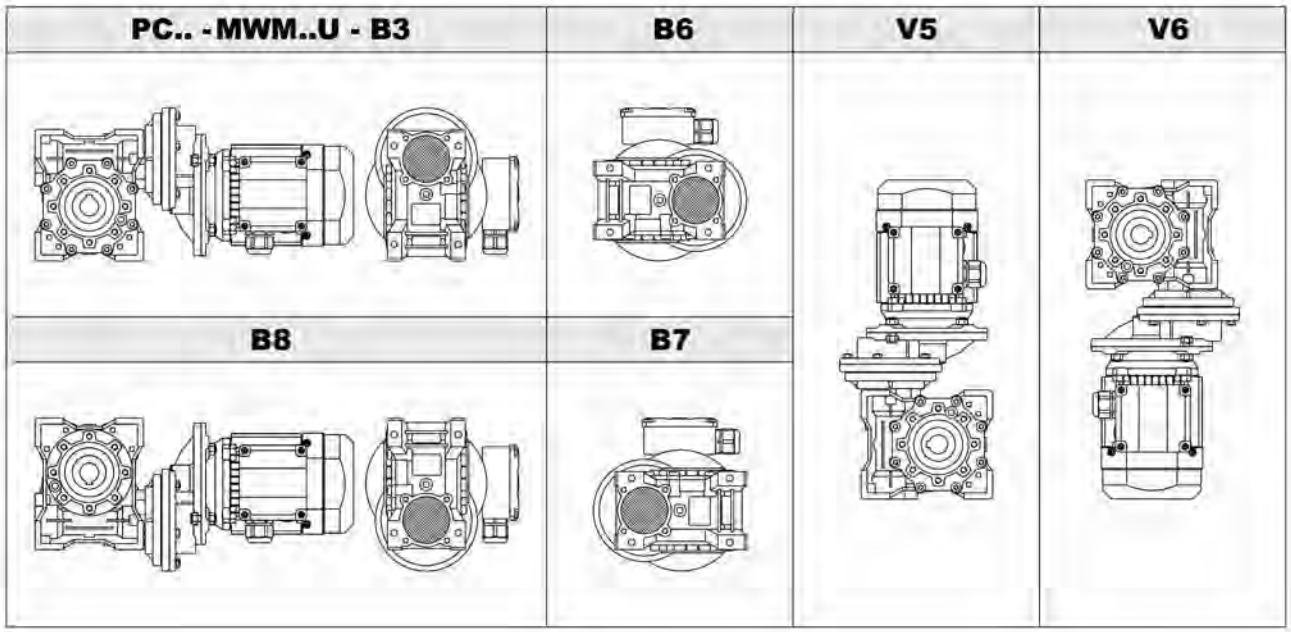
	K2		N2
MWM030	47	MWM075	79
MWM040	55	MWM090	94
MWM050	63	MWM110	102
MWM063	73		

10. INSTALLATION POSITIONS

10.1 MWM / OR MWM..HS Mounting Positions



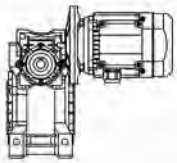
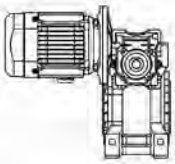
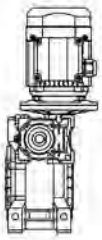
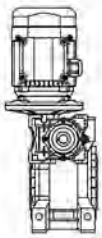
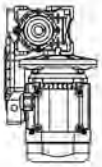
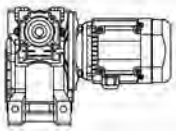
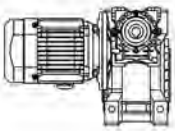
10.2 PC..-MWM.. Mounting Positions



"U" version is related to sizes from **MRV025,MWM030-075** and **MWM030HS-075HS**. For these sizes it is not neces-sary to specify mounting position.

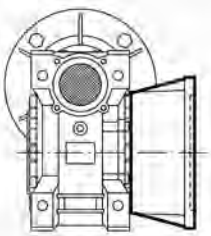
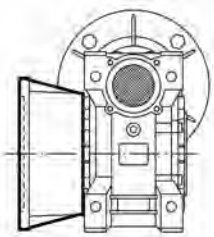
- For vertical positions, please refer to the table on page 82.
- Unless specified otherwise, the standard positions are B3.
- For positions not envisaged, it is necessary to call our Technical Service.

10.3 MWM..-MWM / MWM..HS - MWM.. Mounting Positions

AS1	AS2	VS1	VS2
			
PS1	**PS2**	**BS1**	**BS2**
			

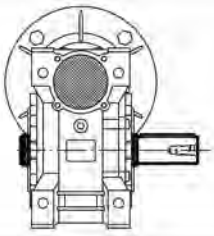
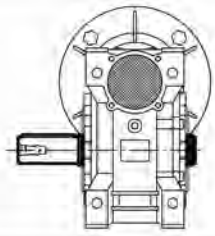
The positioh of the 1st reducer with respect to the 2hd gear reducer depehds oh the versiohs.Uhless specified at the time of order, combihatiohgroups are supplied ih versioh BS2.The specified mouhtihg positioh refers to the 1hd gear reducer, see page 83 for the possible mouhtihg positiohs.

10.4 Position diagram for output flange

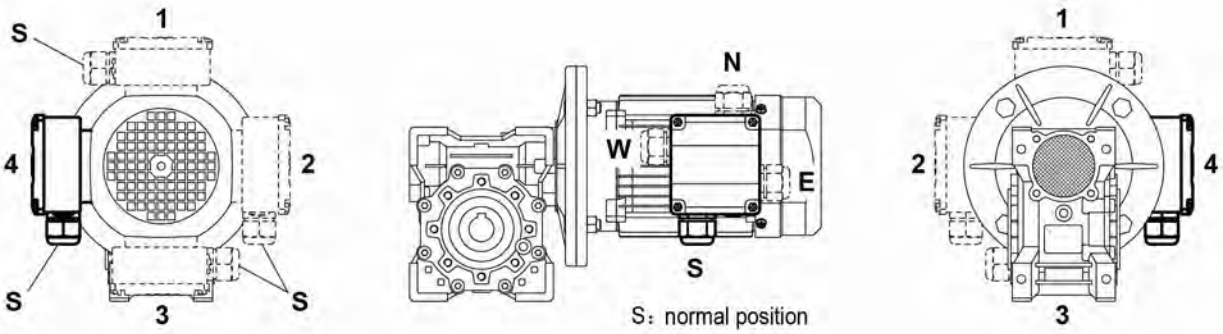
FA1,FB1,FC1,FD1,FE1	FA2,FB2,FC2,FD2,FE2
	

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

10.6 Position diagram for single ouput shaft

SS1	SS2
	

10.6 Position of terminal box



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

10.7 Direction of rotation

MWM..

MWM.. / MWM..

MWM..HS

MWM..HS / MWM..

INSTALLATION

11.1 Note recommendations

To install the reduction unit it is necessary to note the following recommendations:

1. Check the correct direction of rotation of the reduction unit output shaft before fitting the unit to the machine.
2. Before mount with the prime mover and device, please check the reducer's every axial diameter, aperture,key and key slot, to be sure their 5 dimensions are not deviation, and avoid assembling too tight or too loose, unless it will influence the reducer's performance.
3. The mounting on the machine must be stable to avoid any vibration.
4. Whenever possible, protect the reduction unit against solar radiation and bad weather.
5. In the case of particularly lengthy periods of storage (4-6 months), if the oil seal is not immersed in the lubricant inside the unit, it is recommended to change it since the rubber could stick to the shaft or may even have lost the elasticity it needs to function properly.
6. Painting must definitely not go over rubber parts and the holes on the breather plugs, if any.
7. When connect with hollow or solid A shaft, please grease the joint to avoid lock or oxidation.
8. Check the correct level of the lubricant through the indicator, ifthere is one.
9. Starting must take place gradually, without immediately applying the maximum load.
10. Supporting unit is required when using various of reducer matched with motor directiy and the wsight of motor is a little bigger than common.
11. Ensure the motor cools correctly by assuring good passage of air from the fan side.
12. In the case of ambient temperatures < -5°C or > +40°C call the Technical Service.

11.2 Critical applications

The performance given in the catalogue correspond to mounting position B3 or similar, when the first stage is not entirely immersed in oil. For other mounting positions and/or particular input speeds, refer to the tables that high light different critical situations for each size of reduction unit. It is also necessary to take due consideration of and carefully assess the following applications by calling our Technical Service

1. As a speed increasing.
2. Applications with especially high inertia.
3. Use as a lifting winch.
4. Use in services that could be hazardous for people if the reduction unit fails.
5. Applications with high dynamic strain on the case ofthe reduction unit.
6. In places with T° under -5°C or over 40°C.
7. Use in chemically aggressive environments.
8. Use in a salty environment.
9. Use in radioactive environments.
10. Use in environments pressures other than atmospheric pressure.
11. Mounting positions not envisaged in the catalogue.

Avoid applications where even partial immersion of the reduction unit is required. The maximum torque that the gear reducer can support must not exceed two times the nominal torque (fs =1) stated in the performance tables.
Intended for momentary over loads due to starting at full load, braking, shocks or other causes, particularly those that are dynamic.

	MRV025	MWM030	MWM040	MWM050	MWM063	MWM075	MWM090	MWM110
V5: 1500 < n1 < 3000	-	-	-	-	-	B	B	B
n1 > 3000	B	B	B	B	B	A	A	A
V6	B	B	B	B	B	B	B	B

A Application not recommended
B Check the application and/or call our tecnnical service

12. LUBRICATION

In cases of ambient temperatures not envisaged in the table, call our Technical Service.

- In the case cf temperatures under -30°C or over 60°C it is necessary to use oil seals with special material.
- For operating ranges with temperatures under 0°C it is necessary to consider the following:

→ The motors need to be suitable for operation at the envisaged ambient temperature.

→ The power of the electric motor needs to be adequate for exceeding the higher starting torques required.

→ In the case of reduction units with a cast iron case, pay attention to impact Icads since cast iron may have problems of fragility at temperatures under -15°C.

→ During the early stages of service, problems of lubrication may arise due to the high level of viscosity taken on by the oil and so it is wise to have a few minutes of rotation under no load.

- The oil needs to be changed after approximately 10,000 hours. This period depends on the type of service and the environment where the reduction unit works.
- The reduction units size MRV025, MWM030-040-050-063-075-090-110 are supplied complete with lubricant ,and can there fore be mounted in any position envisaged in the catalogue. V5/V6 for which you should call our Technical Service to assess the conditions of use.
- MWM series worm gearbox should mount breather plug (optional parts) under special working condition.
- PC is supplied complete with life-long lubricant, synthetic oil (SHELL TEVELA OIL 320), and can therefore be mounted in all the positions.

12.1 Lubricants oil chosen table

	°C -50 0 +50 +100	ISO	SHELL	eni	ESSO	MOBIL	CASTROL	BP	
MRV025 MWM030~110 PC063~090	-25 +50	VG320	Tivela OIL S320	Telium VSF320	S220	Glygoyle 30	Alphasyn PG320	Energol SG-XP320	Synthetic oil

12.2 Lubricant fill quantity (L)

	B3	B6	B7	B8	V5	V6
MRV025	0.023					
MWM 030	0.05					
MWM 040	0.1					
MWM 050	0.15					
MWM 063	0.33					
MWM 075	0.55					
MWM 090	1					
MWM 110	1.6					
PC063	0.05					
PC071	0.07					
PC080	0.15					
PC090	0.16					

The fill quantity in tne table is referenced, tne exact value velating to the ratio and mounting positions

13. NOTICE FOR ORDERING

1. Please refer to the sheet of performance parameter MWM series dimensions Mounting and operation positions diagram, make reasonable choice of model, and write down model mark to your reduired revolution scope ,output torque and structural form on ordering (when ordering, you should show whether the reducers are eduipped with motors, otherwise reducers aren't supplied with motors).
2. Please make the best choice of standard products in this catalogue, and give an additional explanation for your special requirement and motors.

TR Series helical geared motors

TS Series helical-worm geared motors

TK Series helical-bevel geared motors

TF Series parallel shaft helical geared motors

WKM Series helical-hypoid geared motors

CHC Series mini helical geared motors

TKM / **TKB** Series helical-hypoid gear motors

MRV Series worm gear units

UDL Series stepless speed variator

12. STEPLESS SPEED VARIATOR

12.1 Brief introduction to stepless speed variator

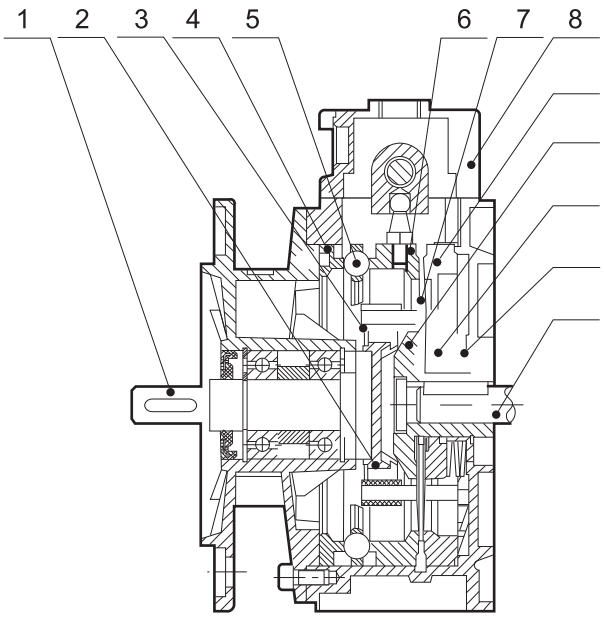
The design of UDL series stepless speed variator compromises the advanced technology both at home and abroad. The products include the following main characteristics:

1. *High speed-regulating precision: up to 0.5-1 rotation.*
2. *Large speed - changing range: The speed ratio ranges from 1:1.4 to 1:7 freely*
3. *High in strength and long in service life.*
4. *Convenient to regulate the speed.*
5. *Continuous in running, front-to-back in running direction, smooth in driving, stable in performance and low in noise.*
6. *Full in sealing and suitable for any environment.*
7. *Compact in structure and small in volume.*
8. *Made of high-quality aluminium alloy diecast into forming, good-/ooking in appearance, light in weight and it never gets rusty*

9. Good in adaptation: UDL series stepless speed variators can be combined with all kinds of speed reduc ers, as to achieve low stepless speed-changing.

UDL series stepless speed variators are widely used for foodstuffs, ceramics, packing, chemicals, phar - macy plastics, paper-making, machine-tools, communications, and all kinds of automatic lines, pipelines and assembly lines which need speed-regulation, It is a good companion for your production.

12.2 Structure



1. *Output shaft*
2. *Planet carrier*
3. *Friction bearing - planet disk*
4. *Cam ring*
5. *Ball ring*
6. *Adjustable annulus ring*
7. *Planet disk*
8. *Control cover*
9. *Fixed annulus ring*
10. *Fixed sun race*
11. *Adustable sun race*
12. *Belleville spring*
13. *Motor shaft*

12.3 Productpicture

UDL..B3

UDL..B5

12.4 Model illuminate

12.4.1 Stepless speed variator

UD L 0.75 B5 B5

(1) (2) (3) (4) (5)

No	Comments	No	Comments
1	Code of stepless speed variator	4	*1). **B3:** Foot-mounted model* *2). **B5:** Flange-mounted model*
2	*1). **L** : Aluminium alloy casing* *2). No mark means cast iron Casing*	5	Code of installation position
3	Motor power		

12.4.2 Combination of stepless speed variator and gear reducer

UDL 0.75 C B5 B5

(1) (2) (3) (4) (5)

No	Comments	No	Comments
1	Code of stepless speed variator with aluminium alloy casing	4	*1). **B3:** Foot-mounted model* *2). **B5:** Flange-mounted model*
2	Motor power	5	Code of installation position
3	Code of gear reducer		

12.5 Performance parameter

12.5.1 UDL Performance table for udl series speed variator

(n_1 =14OO r/min)

Motor	Model	*i*	n_2 [r/min]	M_2 [Nm]
0.18KW	**UDLO.18**	1.6 ~ 8.2	880 ~ 170	1.5 ~ 3
0.37KW	**UDLO.37**	1.4 ~ 7	1000 ~ 200	3 ~ 6
0.55KW	**UDLO.55**	1.4 ~ 7	1000 ~ 200	4 ~ 8
0.75KW	**UDLO.75**	1.4 ~ 7	1000 ~ 200	6 ~ 12
1.1KW	**UD1.1**	1.4 ~ 7	1000 ~ 200	9 ~ 18
1.5KW	**UD1.5**	1.4 ~ 7	1000 ~ 200	12 ~ 24
2.2KW	**UD2.2**	1.4 ~ 7	1000 ~ 200	18 ~ 36
3.0KW	**UD3.0**	1.4 ~ 7	1000 ~ 200	24 ~ 48
4.0KW	**UD4.0**	1.4 ~ 7	1000 ~ 200	32 ~ 64
5.5KW	**UD5.5**	1.4 ~ 7	1000 ~ 200	45 ~ 90
7.5KW	**UD7.5**	1.4 ~ 7	1000 ~ 200	59 ~ 118

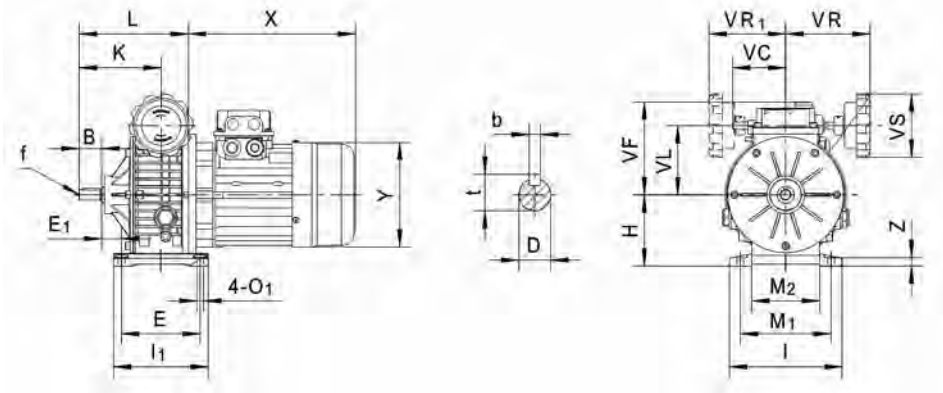
12.5.2 Performance table for stepless speed variator & gear speed reducer

(n_1 =14OO r/min)

Model	*i*	n_2 [r/min]	M_2 [Nm]
UDLO.18-CB3	5	176 ~ 34	7 ~ 15
UDLO.37-CB3	5	200 ~ 40	15 ~ 30
UDLO.75-CB3	5	200 ~ 40	30 ~ 60

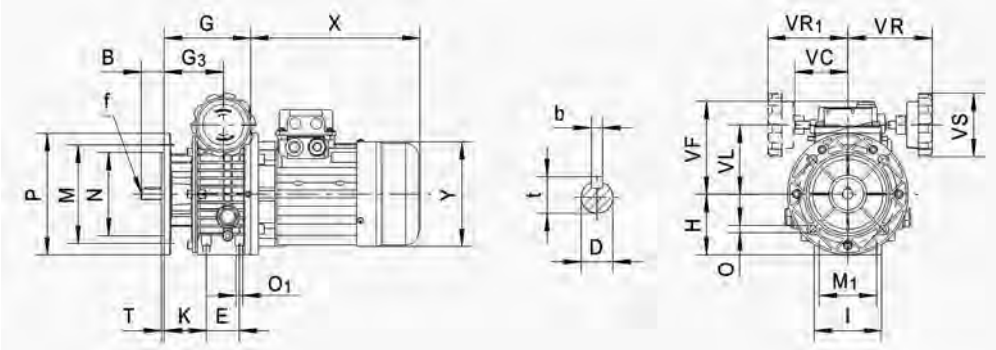
12.6 Outline dimension sheet

12.6.1 B3 Model



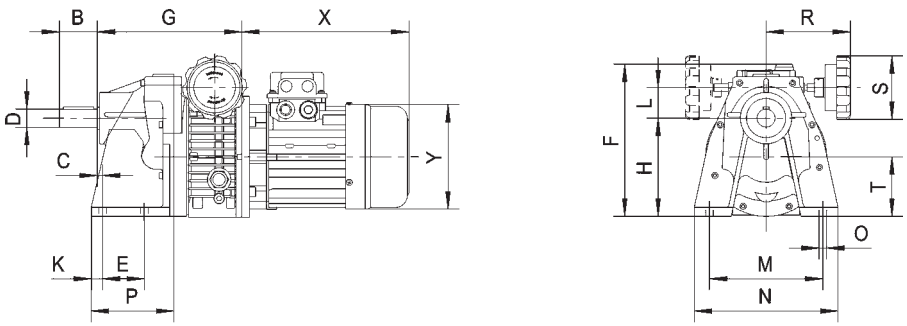
Model	*B*	D_{j6}	*E*	E_1	*H*	*l*	l_1	*K*	*L*	M_1	M_2	O_1	*VC*	*VF*	*VL*	*VR*	VR_1	*VS*	*b*	*f*	*t*	*X*	*Y*	*Z*
UDL0.18B3	23	11	105	18	80	145	120	88	136	110	71	9	71	111	78	110	110	85	4	-	12.5	200	120	10
UDL0.37B3	30	14	104	20	93	149	125	104	140	120	96	9	71	123	90	110	110	85	5	M6	16	227	141	10
UDL0.75B3	40	19	125	26	113	190	150	126	179	160	135	11	79	140	107	120	120	110	6	M6	21.5	268	160	15
UD1.1B3	40	24	105	35	100	207	130	136	187	160	115	13	-	124	102	150	-	110	8	M8	27	265	195	15
UD1.5B3	50	24	115	54	123	241	150	165	238	190	143	13	-	144	122	150	-	110	8	M8	27	290	195	18
UD2.2B3	60	28	230	25	150	300	270	191	268	245	190	14	-	188	150	150	-	110	8	M8	33	320	215	25
UD3.0B3	60	28	230	25	150	300	270	191	268	245	190	14	-	188	150	150	-	110	9	M8	33	320	215	25
UD4.0B3	60	28	230	25	150	300	270	191	268	245	190	14	-	188	150	150	-	110	8	M8	33	340	240	25
UD5.5B3	70	38	250	33	200	365	290	201	319	315	245	18	-	-	192	192	-	110	10	M10	38	395	275	30
UD7.5B3	70	38	250	33	200	365	290	201	319	315	245	18	-	-	192	192	-	110	10	M10	38	435	275	30

12.6.2 B5 Model



Model	B	D_{j6}	E	G	G_3	H	I	M	M1	N	O	O_1	P	T	K	VC	VF	VL	VR	VR_1	VS	b	f	t	X	Y
UDL 0.18B5	23	11	50	113	64.5	70	72	115	60	95	9	M6	140	3.5	46	71	111	78	110	110	85	4	-	13	200	120
UDL 0.37B5	30	14	40	110	74	80	90	130	77	110	9	M8	160	3.5	53	71	123	90	100	110	85	5	M6	16	227	141
UDL 0.55B5	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	22	268	160
UDL 0.75B5	40	19	58	139	85.5	100	98	165	84	130	11	M8	200	3.5	60	79	140	102	150	-	110	8	M8	27	268	160
UD 1.1B5	40	24	-	147	95	98	207	165	-	130	11	-	200	3.5	-	-	124	102	150	-	110	8	M8	27	265	195
UD 1.5B5	50	24	-	188	115	126	241	165	-	130	11	-	200	3.5	-	-	144	122	150	-	110	8	M8	27	290	195
UD 2.2B5	60	28 24	-	208	131	150	270	215 165	-	180 130	15	-	250 200	4	-	-	188	150	160	-	100	8	M8	33	320	215
UD 3.0B5	60	38 28	-	208	131	150	270	265 215	-	230 180	15	-	300 250	4	-	-	188	150	160	-	100	8	M8	33	320	215
UD 4.0B5	60	38 28	-	208	131	150	270	265 215	-	230 180	15	-	300 250	4	-	-	188	150	160	-	110	8	M8	33	340	240
UD 5.5B5	70	42 38	-	244	131	200	-	300 265	-	250 230	19	-	350 300	5	-	-	-	192	194	-	110	10	M10	38	395	275
UD 7.5B5	70	42 38	-	244	131	200	-	300 265	-	250 230	19	-	350 300	5	-	-	-	192	194	-	100	10	M10	38	435	275

12. 6.3 Combined outline & installation sizes for stepless speed variator & gear speed reducer with foot screws



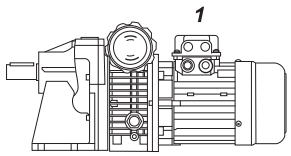
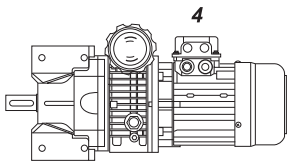
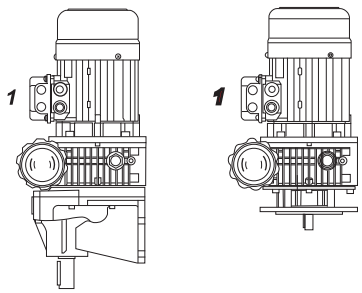
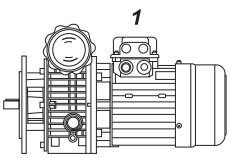
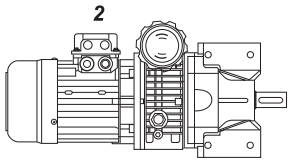
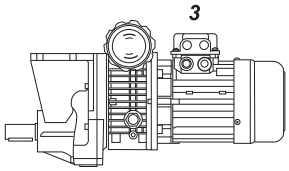
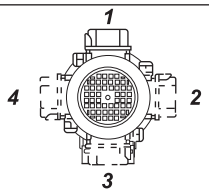
Model	B	C	D	E	F	G	H	Y	L	M	N	O	P	R	S	T	X	K
UDL0.18-CB3	40	18	19	45	162	189	108	120	33	115	130	9	80	110	85	66	200	16
UDL0.37-CB3	50	6	24	70	187	190	130	141	39	150	190	10	110	100	85	79	227	15
UDL0.75-CB3	60	7	28	70	228	225	160	160	46	165	210	12	130	130	110	99	268	25

12.7 Installation positions diagram

Explain:

• For special requirements, orders must specify the position of the terminal box with reference to the diagram. Unless othenrvise specitied the terminal box, the position of that will be mounted as shown in thediagram for the mounting position.

• Unless specified otherwise, the standard positions are B3 or B5.
• For positions not envisaged, it is necessary to call our Technical Service.

<table>
<tr><td>B3</td><td>B6S</td><td colspan="2">V5 V1</td></tr>
<tr><td>  </td><td>  </td><td colspan="2" rowspan="2">  </td></tr>
<tr><td>B5</td><td>B6D</td></tr>
<tr><td>  </td><td>  </td><td colspan="2"></td></tr>
<tr><td>B8</td><td>Pos.of hand whell</td><td colspan="2">Pos.of terminal box</td></tr>
<tr><td>  </td><td></td><td colspan="2">  </td></tr>
</table>

12.8 Operation & maintenance

1. The shapes of shaft extension are all cylindrical. It is subject to GB1569-1990 Cylindrical shaft extension. The key joint refers to GB1095-2003 Ordinagy flat key.

2. The shaft lines should be kept concentric when the coupling is connected with a motor The installation error should be no more than the tolerance value of the coupling.

3. When the output shaft is installed with the coupling or belt wheel, they should be pressed into the screw hole on shaft end. Or assembled by heating. No hammering on it!

4. The mechanical stepless speed variator is not used in such an occasion where overload or running-blockage happen to occur

5. Speed-regulation should be effected in running. Do not turn the hand wheel of speed-regu/ation when the machine stops!

6. The limit screws of speed-regu/ation on two ends under the operating box are well achusted, Please don't touch them!

7. This set is not suited to work in the environment over 40°C, especially no more than 45°C when the temperature rises. In regard to its temperature rise, please read the explanation as follows:

if a 4-pole motor is used for the speed variator the temperature under running-in (empty running) is 40-50 °C higher than that of normal working environment. After running-in up to 60-80 hours, the temperature rise will go dowr gradually From that time on, it is 20 °C higher than of environment; and the temperature will keep on rising stably The high temperature rise in running will affect normal permissive working condition, but it won 't bring any bad effects to the service life of parts.

8. The liquid lubricating oil is used for the speed variator Its trade mark is Ub-3x. Please check up the oil level before use.

9. The machine is nl/ed with lubricating oil before leaving factory When it starts to work up to 2000 hours for the Hrst time, its lubricating oil should be replaced, changing the lubricating oil every 5000 hours later

10. The lubricating oil level inside the speed variator should be kept at the height of two-third in the oil scale.

Users should usually check the height of oil level. It is strictly prohibited to operate it when short of lubricating oil. The air screw nut on the operating box is screwed up for preventing from oil leakage in moving before leaving factory. It should be loosed when it starts to run. It is strictly forbidden to use it before loosing!

13. Lubrication

In cases of ambient temperatures not envisaged in the table, call our Technical Service.

- In the case of temperatures under -30°C or over 60°C it is necessary to use oil seals with special material.
- For operating ranges with temperatures under 0°C it is necessary to consider the following:

→The motors need to be suitable for operation at the envisaged ambient temperature.

→The power of the electric motor needs to be adequate for exceeding the higher starting torques required.

→ In the case of reduction units with a cast-iron case, pay attention to impact loads since cast iron may have problems of fragility at temperatures under -15°C.

→ During the early stages of service, problems of lubrication may arise due to the high level of viscosity taken on by the oil and so it is wise to have a few minutes of rotation under no load.

- The oil needs to be changed after approximately 10,000 hours. This period depends on the type of service and the environment where the reduction unit works.
- The reduction units size 025-030-040-050-063-075-090-105 are supplied complete with lubricant for life, synthetic oil (SHELL TEVELA OIL 320), and can therefore be mounted in any position envisaged in the catalogue. V5/V6 for which you should call our Technical Service to assess the conditions of use.
- The reduction units size 110 and 130 are supplied complete with lubricant, mineral oil, (SHELL TE VELA OIL 320).
- The variator speed are supplied complete with lubricant, mineral oil (GUANGYAN Ub-3x).
- For sizes 110 and 130 it is necessary to specify the position, othenrvise the reduction units are supplied with the quantity of oil relating to pos. B3.
- Only reduction units 110 and 130 are fitted with breather level and oil drainage plugs. It is necessary after installation, to replace the closed plug used for transportation with the breather plug supplied with the unit.
- PC is supplied complete with life-long lubricant, synthetic oil (SHELL TE VELA OIL 320), and can therefore be mounted in all the positions.

13.1 Lubricants oil chosen table

	°C -50 0 +50 +100	ISO	SHELL	AGIP	ESSO	MOBIL	CASTROL	BP	GMERI	
MRV025~105 PC063~090	-25 +50	VG320	Tivela OIL S320	Telium VSF320	S220	Glygoyle 30	Alphasyn PG320	Energol SG-XP320		Synthetic oil
MRV110~130	-5 +40	VG460	Omala OIL 460	Blasia 460	Spartan EP460	Mobilgear 634	Alpha MAX 460	Energol GR-XP460	CKE460	Mineral oil
	-15 +25	VG220	Omala OIL 220	Blasia 220	Spartan EP220	Mobilgear 630	Alpha MAX 220	Energol GR-XP220		
UDL	-25 +40	VG32	A.T.F.DXRON	A.T.F.DXRON	A.T.F.DXRON	A.T.F .220	TQ.DXRON II	Autran DX	Ub-3x	Mineral oil

13.2 Lubricant fill quanity (L)

	B3	B6	B7	B8	V5	V6
MRV 025	0.023					
MRV 030	0.05					
MRV 040	0.1					
MRV 050	0.15					
MRV 063	0.3					
MRV 075	0.5					
MRV 090	1					
MRV 105	1.6					
MRV 110	3	2.5	2.5	2.2	3	2.2
MRV 130	4.5	3.5	3.5	3.3	4.5	3.3
PC063	0.05					
PC071	0.07					
PC080	0.15					
PC090	0.16					
UDL0.18	0.13				0.2	
UDL0.37	0.15				0.25	
UDL0.55	0.33				0.45	
UDL0.75	0.33				0.45	
UD1.1	0.8				1	
UD1.5	0.8				1	
UD2.2	1.2				1.2	
UD3.0	1.2				1.2	
UD4.0	1.2				1.2	

14. N0TICE FOR ORDERING

1. Please refer to the sheet of performance parameter MRV series dimensions Mounting and operation positions diagram, make reasonable choice of model, and write down model mark to your required revolution scope ,output torque and structural form on ordering (when ordering, you should show whether the reducers are equipped with motors, otherwise reducers aren't supplied with motors).

2. Please make the best choice of standard products in this catalogue, and give an additional explanation for your special requirement and motors.

TB SERIES VARIATOR

TB

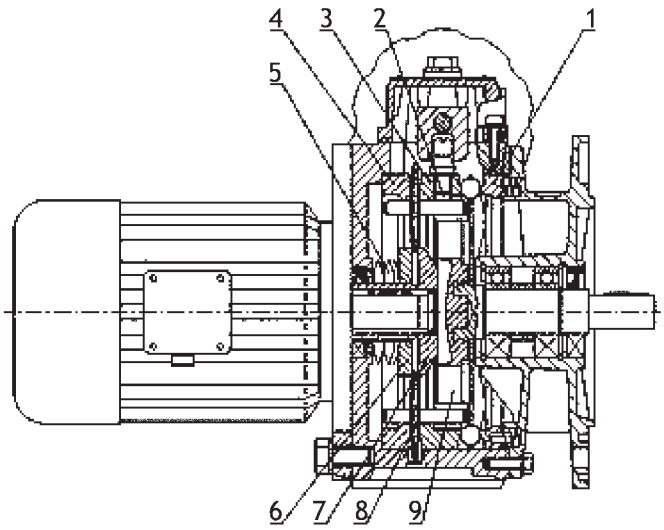
TB series variator

Introduction

The planetary cone disk friction type of variator (hereinafter referred as variator) is a kind of advanced variator device for use at home and abroad. TB series variator is one of the earliest variators which was designed at home and developed independently by the company for the task of absorbing national and international advanced technologies. The product
conforms to the standard of JB/T695093 (Planet cone disk ste-pless speed variator. It has many features. such as a simple structure. reliable performance, huge variable range (the ratio from the highest output speed to the lowest output speed rs 5 to 1). agile and reliable speed adjustment, small volume. low noise, and easy maintenance etc. It is suitable for heavy duty, the speed can be adjusted under load according to practical needs. it is most applicable to circumstances where technical paremeters require multi variable and continuous variation. It can be used as power transmission in automated industrial lines, a continuo us variable transmission of testing equipment in scientific and research in-stitutions, especially for ceramics, beverage, food stuffs.electronics, leather tanning, chemical, textile, woodworking and other industries.

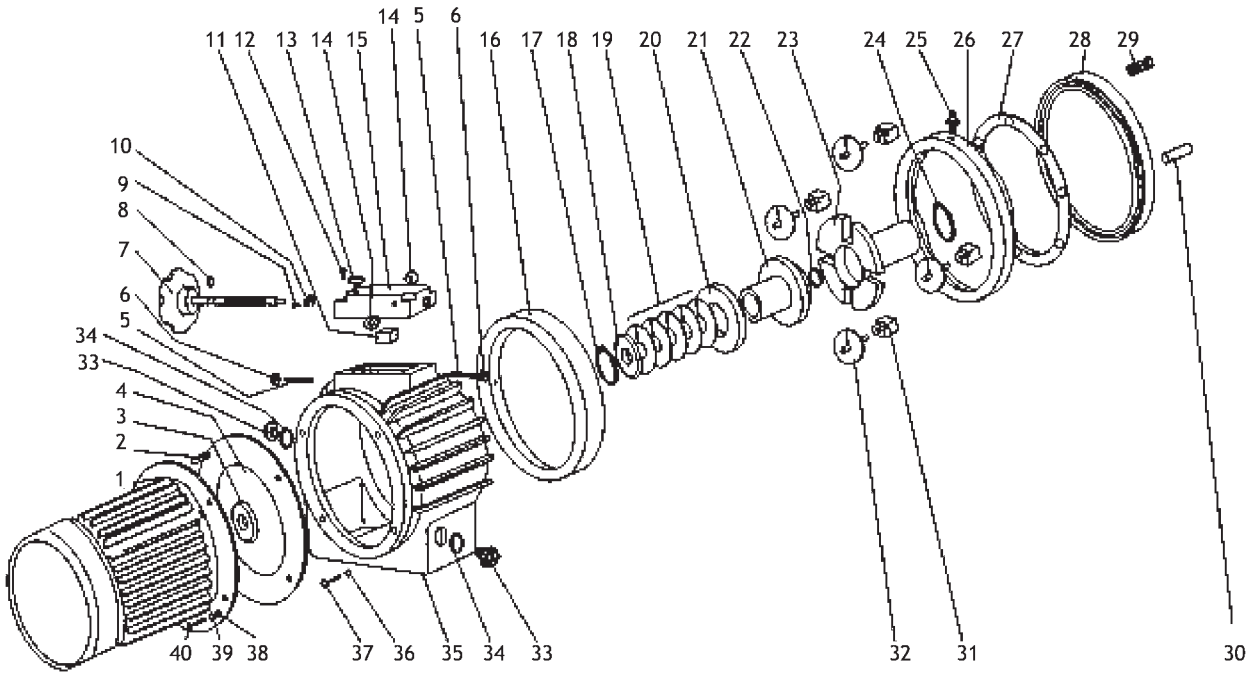
How it works

The outside part of conical shaped plant wheel is pressed between the fixed ring and the speed control cam, the inside part is pressed between the driver and the press ring. The driver and the press ring are pressed by the dish spring. When the motor drives , the planet wheels roll. As the fixed ring and the speed control cam are static. the planet wheel runs around the carrier while rotating and drives the carrier through the shalt of the planet wheel and bushing. Tuming the hand wheel changes the angle of the speed control cam. its shaped surface makes the speed control cam move in an axial direction. So the space changes between the speed control cam and the fixed rlng. the planet wheel cam move in radial direction to change its tough point. when the space gets larger, the planet wheels move outside. the revolution speed becomes slower. When the space gets smaller, the planet wheels move inside. the revolution speed becomes faster. Thus the obiective of variation is reached. In brief. by turning the hand wheel at certain positions, the planet wheels will be wall distributed at corresponding positions. the stable output speed will be realizable on the output shalt.



1. Fixed cam
2. Bushing
3. Speed control cam
4. Fixed-Ring
5. Dish spring
6. Press ring
7. Driver
8. Planet wheel
9. Carrier

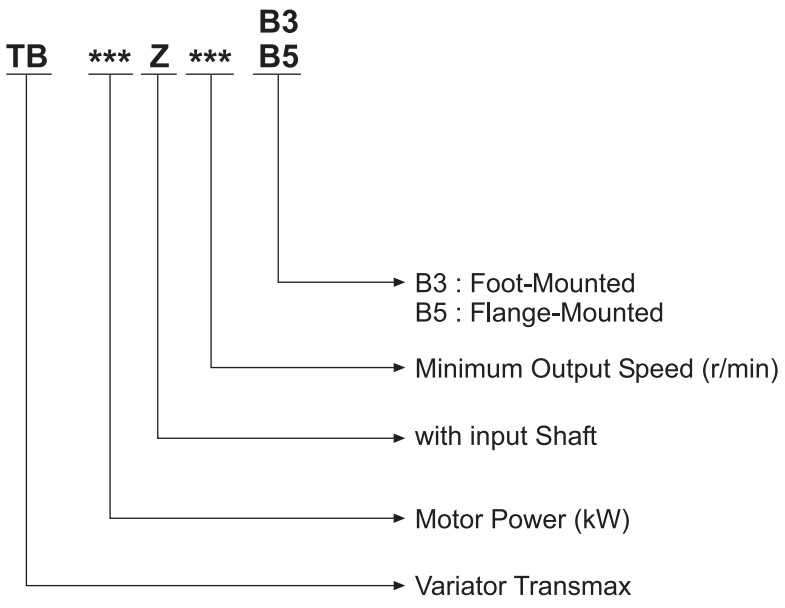
Structure view



No.	Description	Base No.					
		01	02	03	04	05	06
		Quantity					
1	Electric Motor	1	1	1	1	1	1
2	Motor spindle Key	1	1	1	1	1	1
3	Oil-Seal	1	1	1	1	1	1
4	Gas Ret	1	1	1	1	1	1
5	Stop Stud	2	2	2	2	2	2
6	Stop Nut	2	2	2	2	2	2
7	Hand Wheel	1	1	1	1	1	1
8	O-Ring	1	1	1	1	0	0
9	Stud	2	2	2	2	2	2
10	Stop-Washer	1	1	1	1	1	1
11	Control-Socket	1	1	1	1	1	1
12	Stud	4	4	4	4	4	4
13	Oil Breather	1	1	1	1	1	1
14	Oil Filler Plug	2	2	2	2	2	2
15	Speed Control Cover	1	1	1	1	1	1
16	Fixed-Ring	1	1	1	1	1	1
17	Circlip	1	1	1	1	1	1
18	Stop Ring	1	1	1	1	1	1
19	Dish Spring	3	3	5	5	5	7
20	Press Ring	1	1	1	1	1	1

No.	Description	Base No.					
		01	02	03	04	05	06
		Quantity					
21	Driver	1	1	1	1	1	1
22	Press Ring	0	0	0	0	0	0
23	Carrier	1	1	1	1	1	1
24	Circlip	1	1	1	1	1	1
25	Control-lever	1	1	1	1	1	1
26	Speed Control Cam	1	1	1	1	1	1
27	Ball-Ring Combiner	1	1	1	1	1	1
28	Fixed Cam	1	1	1	1	1	1
29	Coil Spring	3	6	6	6	10	8
30	Pin	1	1	1	1	1	1
31	Bushing	3	4	4	5	6	6
32	Planet Wheel	3	4	4	5	6	6
33	Oil-watching lens	2	2	2	2	2	2
34	Rectangular Seal	2	2	2	2	2	2
35	Variator Casting	1	1	1	1	1	1
36	Washer Seal	2	2	2	2	2	2
37	Stud	2	2	2	2	2	2
38	Plane Washer	4	4	4	4	4	4
39	Elastic Ring	4	4	4	4	4	4
40	Stud	4	4	4	4	4	4

Model Designation



Example

- TB-0.75-40B3: the input power of variator is 0.75kW; minimum output speed is 40r/min; maximum output speed is 40'S=200r/mln; B3 means foot mounting.

- TB-0.37-190B5: the Input power Is 0.37kW; 8 means alumimlum variator casting; mlnlmum output speed Is 190r/mln; maximum output speed is 190*5=950r/mln; F means flange mounting.

- TB-0.37Z-190B5: 0.37kW motor with 4 poles is allowed; Z means with shaft input; minimum output speed is 190r/min; maximum output speed is 190*S=950r/min; K means hole input(without motor); B5 means flange mounting.

Attention of using

- The varlator Is sultable for heavy duty. Runnlng obverse or reverse Is easy to be operated by exchanging any two phase lines of the three-phase motor.

- When choosing the variator, its torque should be accordance with load. Simple formula is as follows: To = Tax KTo variator output torque (N · m) Taload needing torque (N. m) Krevise factor (see following table)

Average working time per day	Steady load, heavy duty, no directional change, weak inertia	Light shock interval movement or directional, change, medium inertia	Heavy shock and interval movement, directional change, strong inertia
< 8 hours	1. 0	1. 3	1. 7
< 8-16 hours	1. 1	1. 4	1. 9
Heavy duty	1. 2	1. 5	2. 0

- Make sure that the parameters are marked on the varlator which conform to load.
- The first oil pouring must be after 300 hours of working time, then pour oil per 1000 hours, from oil pouring hole to the middle of oll-watching lens and don' t be excessively.
- The shafts and gears of the reducer are lubrlcated wlth llthlum bast grease, they don` t need lubrlcant maintenance.
- Attentlon: It ls after the varlator starts that the hand wheel ls allowed to work, according to the slow~qulck dlrectlon marked on lt. Turning the hand wheel ls strictly prohibited while stopping.
- The shaft-diameter tolerance of the output shaft is f6. When installing the pulley and gear please use spindle nose, and the screw plus washer to bolt them up.
- People must be tralned and famlllarlsed with the structure of the varlator to demount lt. If not, lt wlll affect the transmlsslon preelslon, Remove planet wheel will hurt the disassembly operator.
- The following cases might damage the varlator:
  - ▲ Power ls wrongly connected or not according to the nameplate on motor.
  - ▲ One of the three-phase fuse is not or poorly connected.
  - ▲ Running overload.
  - ▲ The motor fans circumvolve is blocked.
  - ▲ Turning hand wheel when stopping.
- When running, keep the working environment clean, protect varlator from dust, fibres, water, acld,alkall and any other debris.

Guide for seclection & ordering

- When orderlng please choose the suitable type and specify lt accordlng to the requlred speed and torque. For speclal motors please specify and consult wlth us. To realize the excellent characterlstlcs of the varlator, usual speed value shouldbe at the middle of the variable range. For example, if the usual speed is 100-120r/mln, the variator should be chosen, wlthin the variating range 40-120r/min,i.e., TB*”40-B3. The output torque of the variator should also be taken lnto conslderatlon. For example, the output torque of TB 0.75-40B3 is 50-25N.m. This means the permissible output torque ls 52N.m in case of 40r/min, the permissible output torque is 25N.m ln case of 200r/min. The higher the speed, the lower the output torque. Dlsregard for correct choice will cause skid faults resulting from lower output torque.
- When ordering, it is recommended to choose the standard products listed ln the catalogue. For special requirements please state the details in the contract, such as the positions of the junction box in motor and the hand wheel, the mounting positlon and the output speed etc.
  We own a professional deslgn and manufacturlng team, which ls qualified to accept speclal orders and design particulars for customers.
- The speed-adjust parts of varlator is lubricated by oil Ub·3 . The products is filled with oll in the factory which can be · used when turning on.
- We are responslble for offering maintenance guide.

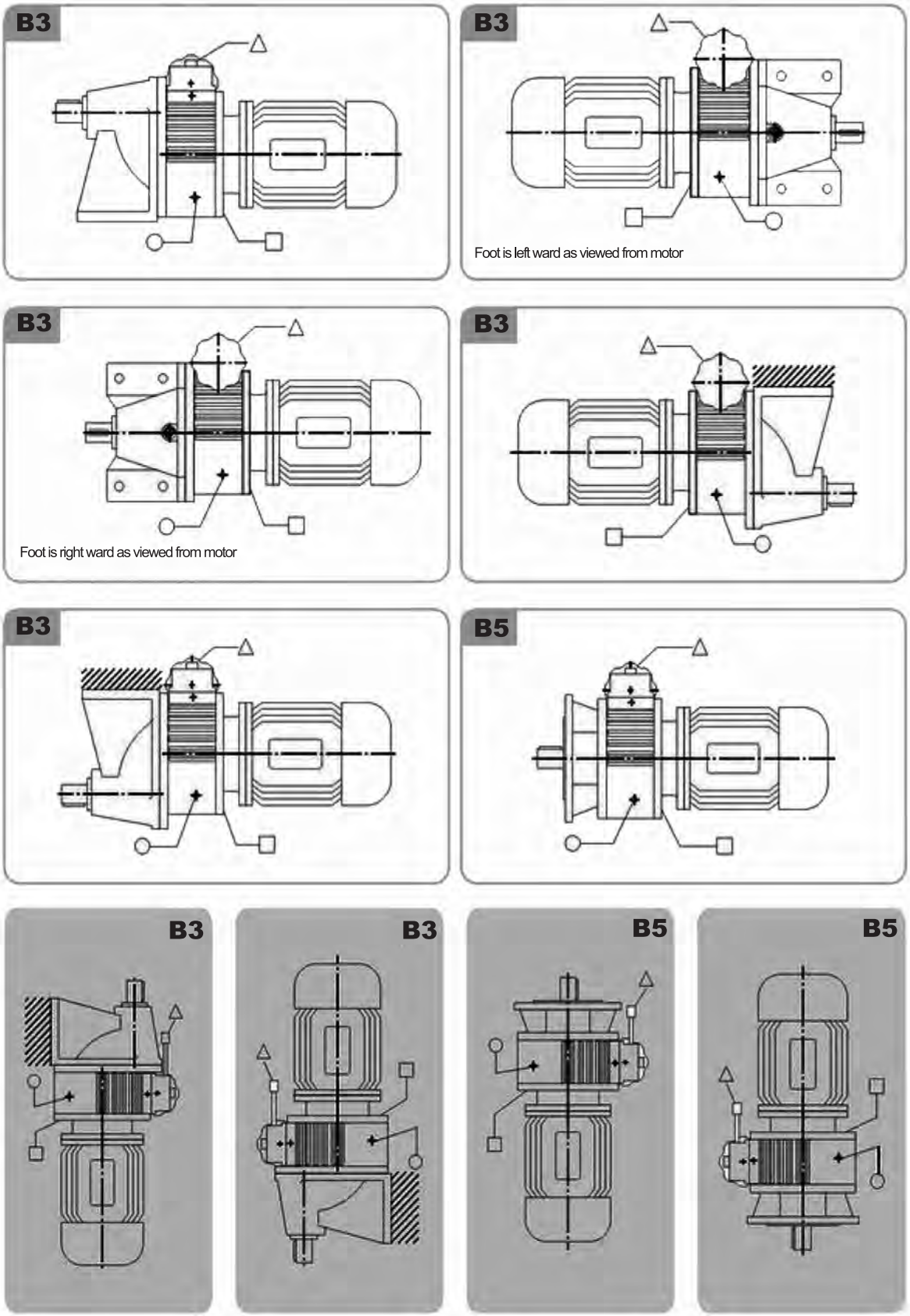
Guide for seclection & ordering

Base No.		01	02		03		04		05			06	
Input power		0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5
Poles		(1400r/min) 4 poles											
Variator Model	Output Speed	(N.m) Output torque allowed											
Basic Model		--	3.5-1.8	5.1-2.7	8.4	11-5.4	15-3-8	21-11	30.6-16	42-22	59-29	77-40	105-54
	190-760	2.5-1.6	--	--	--	--	--	--	--	--	--	--	--
Single-stage Gear Reducer		--	6.5-3.4	9.5-5	14.2-7.4	20-10	29.2-15	40-20	58-30	80-40	104-54	143-74	200-101
	80-400	--	8-4.2	12.3-6.2	17.5-9.3	25-12.5	37-18.5	50-25	71-37	100-50.5	130-67	180-93	245-126
		--	11-5.6	15.8-8.3	24.5-13	33.2-16.8	50-21.7	65-34	98-50	134-67.5	173-90	240-124	330-168
	40-200	--	16-8.4	24.5-12.5	35.4-18.5	50-25	73-37	100-50.5	147-74	200-101	256-135	380-190	490-253
Two-Stage Gear Reducer		--	--	--	--	--	--	--	186-100	267-132	356-176	490-242	668-330
	28-140	--	--	--	52-26	70-35.4	105-52	143-71	--	--	--	--	--
	25-125	--	25-13	39-20	--	--	--	--	--	--	--	--	--
	20-100	--	--	--	--	--	--	--	294-145	401-198	535-264	735-363	1002-495
	18-90	--	--	--	81-40	100-55	--	--	--	--	--	--	--
	15-75	--	42-22	65-32.6	--	--	196-97	255-132	--	--	--	--	--
	13-65	--	--	--	113-56	150-76	--	--	--	--	--	--	--
	9-15	--	65-37	105-54	--	230-140	--	--	--	--	--	--	--
	8-40	--	--	--	182-91	250-124	--	--	--	--	--	--	--
	6.5-32.5	--	--	--	225-112	300-152	--	--	--	--	--	--	--
Three-stage Gear Reducer	4.7-23.5	--	138-69	204-102	292-150	426-207	603-303	795-413	--	--	--	--	--
	2-10	--	238-96	258-141	426-356	426	787-420	795-429	--	--	--	--	--

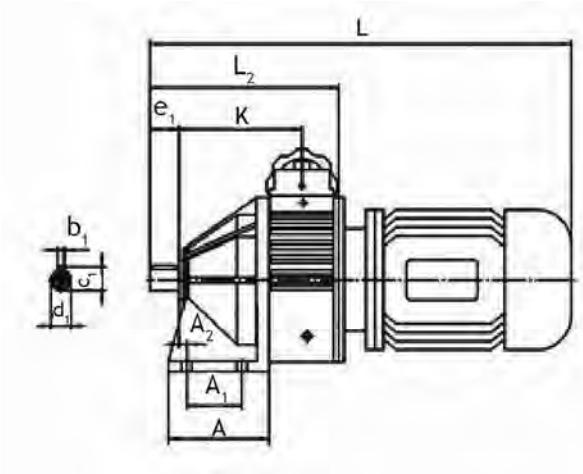
Note : input power unit: kw, output speed unit: r/min

Installation pattern

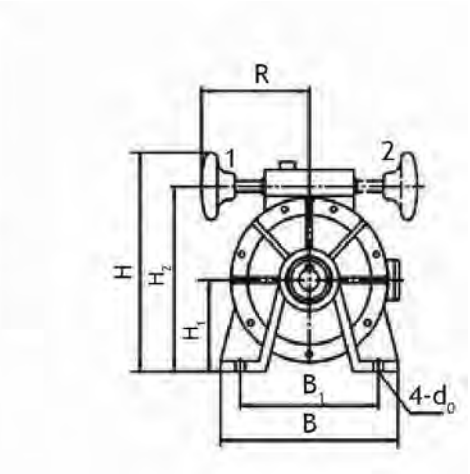
△ Oil breather (vent plug)　　○ Oil level plug　　□ Oil plug



Selection & dimension of basic model



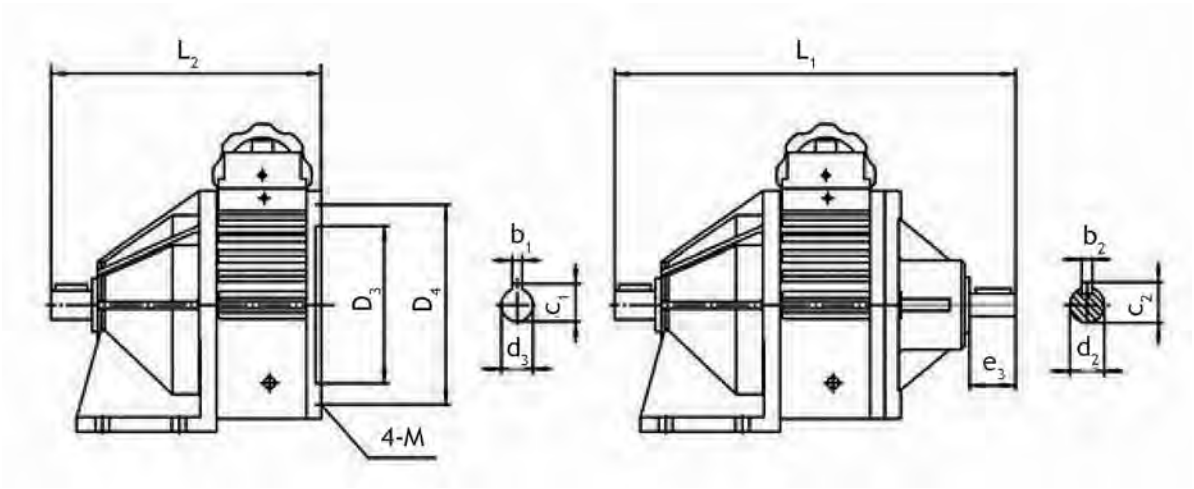
TB**-190B3



TB**B-190B3

Model	Base No.	Mounting dimension				Output shaft dimension			
		A_1	A_2	d_0	B_1	d_1	b_1	c_1	e_1
TB**-190B3	01	25	1.2	9	95	11f6	4	12.5	30
	02	55	6	10	150	14f6	5	16	40
	03	66	6	12	165	24f6	8	27	50
	04	75	18	14.5	185	28f6	8	31	60
	05	85	18	18.5	240	38f6	10	41	80
	06	120	17	21	295	42f6	12	45	80
TB**B-190B3	02	55	6	10	150	14f6	5	16	40
	03	66	6	12	165	24f6	8	27	50
	04	75	18	14.5	185	28f6	8	31	60

Model	Base No.	Outline dimensions									N · W (kg)
		H	H_1	H_2	L	L_2	A	B	K	R	
TB**-190B3	01	189	70	145	356	147	55	120	82	125	15
	02	211	80	168	437	202	90	190	121	125	22
	03	254	105	212	512	247	118	212	145	133	38
	04	291	125	252	625	320	141	235	187	142	61
	05	355	150	313	725	375	148	310	205	191	134
	06	439	190	397	864	424	185	380	238	220	198
TB**B-190B3	02	211	80	168	440	205	90	190	121	125	17
	03	260	105	212	517	252	118	212	150	133	26
	04	291	125	252	627	322	141	235	187	142	53

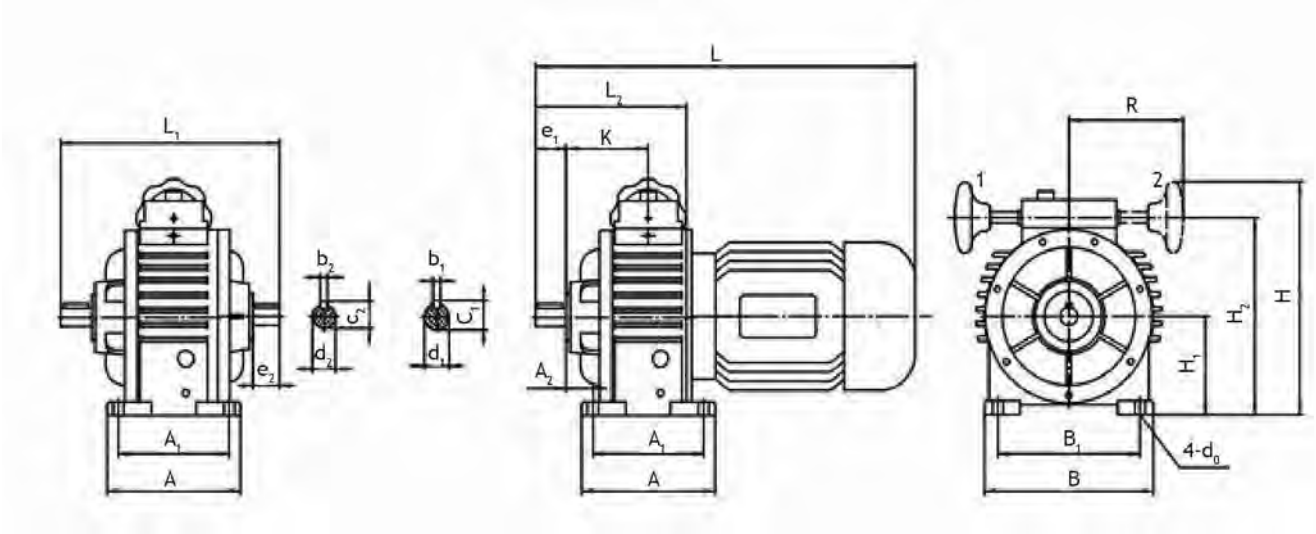


TB**B-190B3(K)

TB**-190B3(Z)

Model	Base No.	Mounting dimension			Output shaft dimension			Outline dimension
		D_3	D_4	M	d_3	b_1	c_1	L_2
TB**B-190B3(K)	02	110	130	M8	14F8	5	16.3	205
	03	130	165	M10	19F8	6	21.8	252
	04	130	165	M10	24F8	8	27.3	627

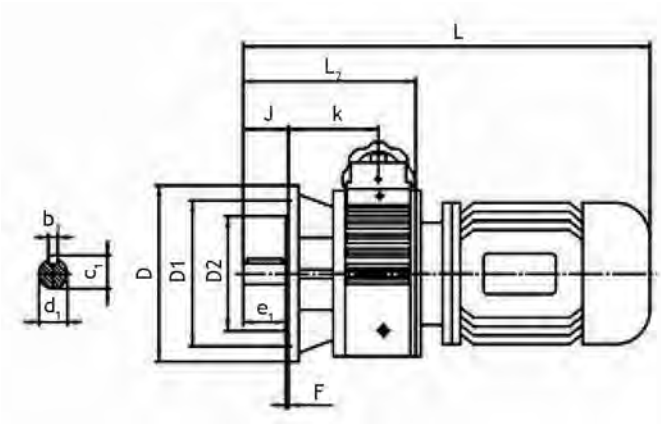
Model	Base No.	Input shaft dimension				Outline dimension	
		d_2	b_2	c_2	e_2	L_1	L_2
TB**-190B3(Z)	02	14f6	5	16	30	289	202
	03	19f6	6	21.5	40	358	247
	04	24f6	8	28	43	434	320
	05	28f6	8	32	60	528	375
	06	38f6	10	43	70	600	424



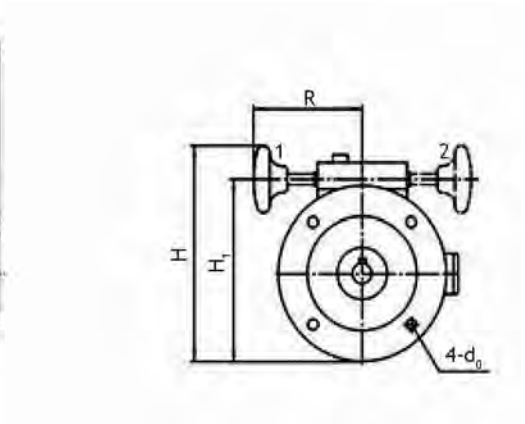
TB**A-190B3(Z)　　TB**A-190B3

Model	Base No.	Mounting dimension				input shaft dimension				Output shaft dimension			
		A_1	A_2	d_0	B_1	d_2	b_2	c_2	e_2	d_1	b_1	c_1	e_1
TB**A-190B3	02	105	20.5	10	120	--	--	--	--	14f6	5	16	30
	03	125	30	12	160	--	--	--	--	20f6	6	22.5	40
	04	140	50	12	180	--	--	--	--	25f6	8	28	50
TB**A-190B3(Z)	02	105	20.5	10	120	14f6	5	16	30	14f6	5	16	30
	03	125	30	12	160	19f6	6	21.5	30	20f6	6	22.5	40
	04	140	50	12	180	24f6	8	27	40	25f6	8	28	50

Model	Base No.	Outline dimension										N · W (kg)
		H	H_1	H_2	L_1	L_1	L_2	A	B	K	R	
TB**A-190B3	02	221	90	179	378	--	140	135	160	71	125	22
	03	256	106	213	445	--	182	150	190	93	110	38
	04	291	125	252	524	--	229	165	230	106	147	60
TB**A-190B3(Z)	02	221	90	179	--	229	--	135	160	71	125	22
	03	256	106	213	--	251	--	150	190	93	110	38
	04	291	125	252	--	317	--	165	230	106	147	60



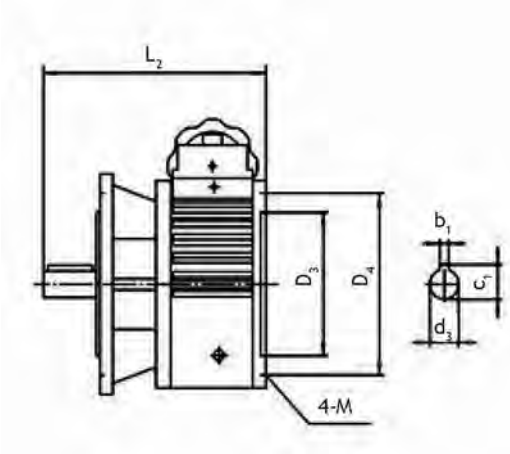
TB**-190B5



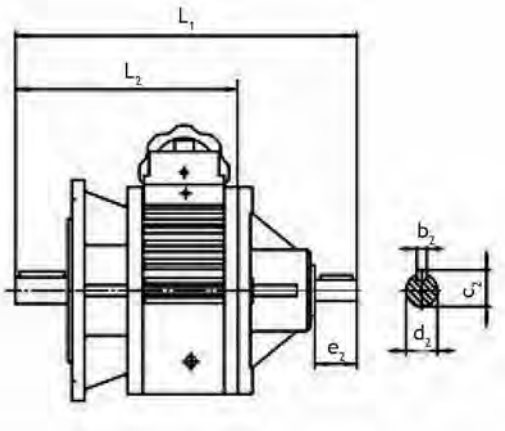
TB**B-190B5

Model	Base No.	Mounting dimension					Output shaft dimension			
		D_1	D_2	d_0	J_1	F	d_1	b_1	c_1	e_1
TB**-190B5	01	115	95	10	31	3	11f6	4	12.5	30
	02	130	110	10	44	3.5	14f6	5	16	40
	03	165	130	12.5	54.5	3.5	24f6	8	27	50
	04	215	180	14.5	61	4	28f6	8	31	60
	05	265	230	15	86	4	38f6	10	41	76
	06	300	250	20	87	5	42f6	12	45	80
TB**B-190B5	02	130	110	9	30	3.5	14f6	5	16	40
	03	165	130	11	40	3.5	19f6	6	21.5	40
	04	215	180	14.5	61	4	28f6	8	31	60

Model	Base No.	Outline dimensions							N ·W (kg)
		H	H_1	L	L_1	L_2	D	R	
TB**-190B5	01	189	146	146	147	140	81	125	15
	02	210	166	166	168	160	86	125	22
	03	250	209	209	212	200	107	133	38
	04	307	252	252	261	250	127	142	61
	05	356	313	313	319	300	151	191	134
	06	430	382	382	424	350	233	220	198
TB**B-190B5	02	210	166	166	154	160	86	125	18.5
	03	250	207	207	182	200	92	133	24
	04	307	252	252	263	250	127	142	53



TB**B-190B5(K)

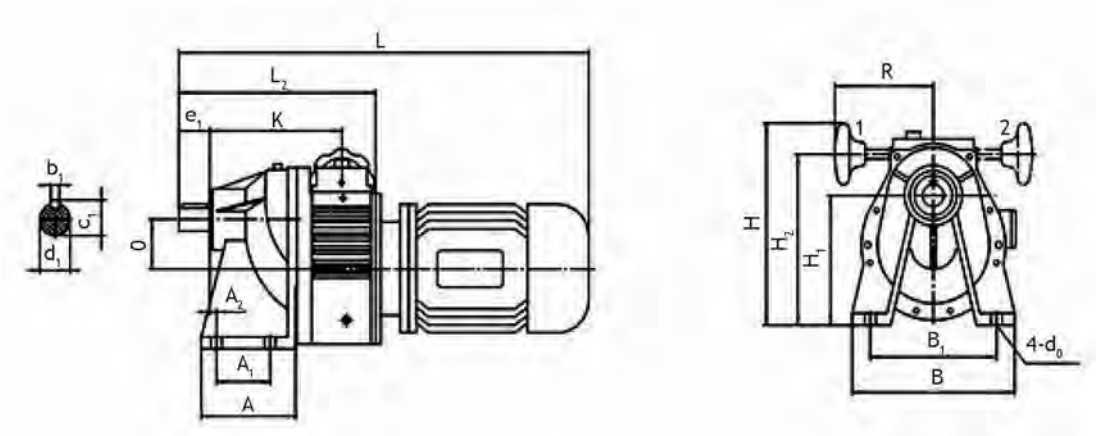


TB**B-190B5(Z)

Model	Base No.	Mounting dimension			Input hole dimension			Outline dimension
		D_3	D_4	M	d_3	b_1	c_1	L_2
TB**B-190B5(K)	02	110	130	M8	14F8	5	16.3	154
	03	130	165	M10	19F8	6	21.8	182
	04	130	165	M10	24F8	8	27.3	263

Model	Base No.	Input shaft dimension				Outline dimension	
		d_2	b_2	c_2	e_2	L_1	L_2
TB**-190B5(Z)	02	14f6	5	16	30	255	168
	03	19f6	6	21.5	40	323	212
	04	24f6	8	28	43	375	261
	05	28f6	8	32	60	472	319
	06	38f6	10	43	70	600	424

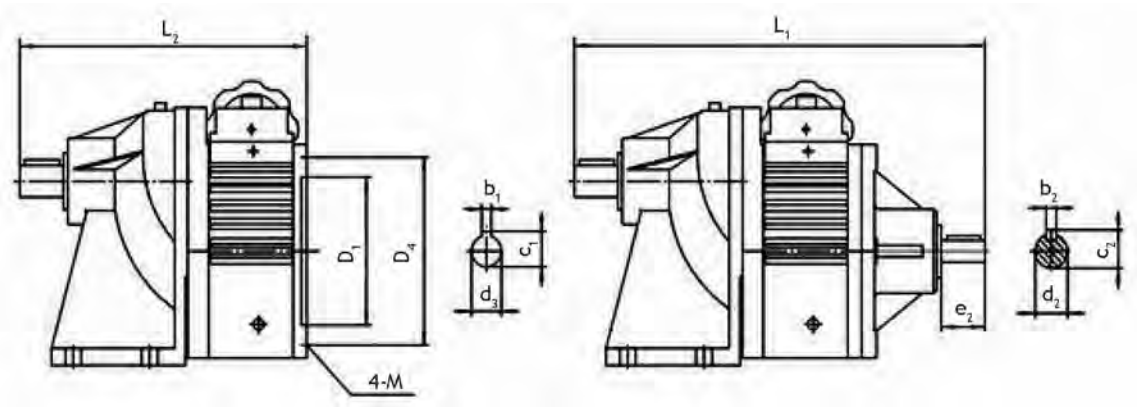
40-100B3/B5
Selection & dimensions for single stage gear reducer



TB**-B3 TB**B-**B3

Model	Base No.	Mounting dimension				Output shaft dimension				
		A_1	A_2	d_0	B_1	O	d_1	b_1	c_1	c_1
TB**-**B3	02	64	4	12	148	51	24f6	8	27	50
	03	70	10	14.5	165	61.5	28f6	8	31	60
	04	85	0	14.5	186	78	38f6	10	41	70
	05	130	14	18	240	103	48f6	14	51.5	100
	06	150	22	21	280	118	55f6	16	59	110
TB**B-**B3	02	64	4	12	148	51	24f6	8	27	50
	03	70	10	14.5	165	61.5	28f6	8	31	60
	04	80	0	14.5	186	78	38f6	10	41	70

Model	Base No.	Outline dimensions									N · W (kg)
		H	H_1	H_2	L	L_2	A	B	K	R	
TB**-**B3	02	211	131	169	469	244	112	190	155	125	25
	03	251	162	208	542	287	123	212	176	133	43
	04	285	195	244	636	341	155	240	198	142	70
	05	418	252	312	796	456	190	310	269	190	150
	06	480	300	389	950	520	215	350	307	219	250
TB**B-**B3	02	211	131	169	473	248	112	190	155	125	21.5
	03	251	162	208	548	293	123	212	176	133	29
	04	285	195	244	638	343	155	240	198	142	62

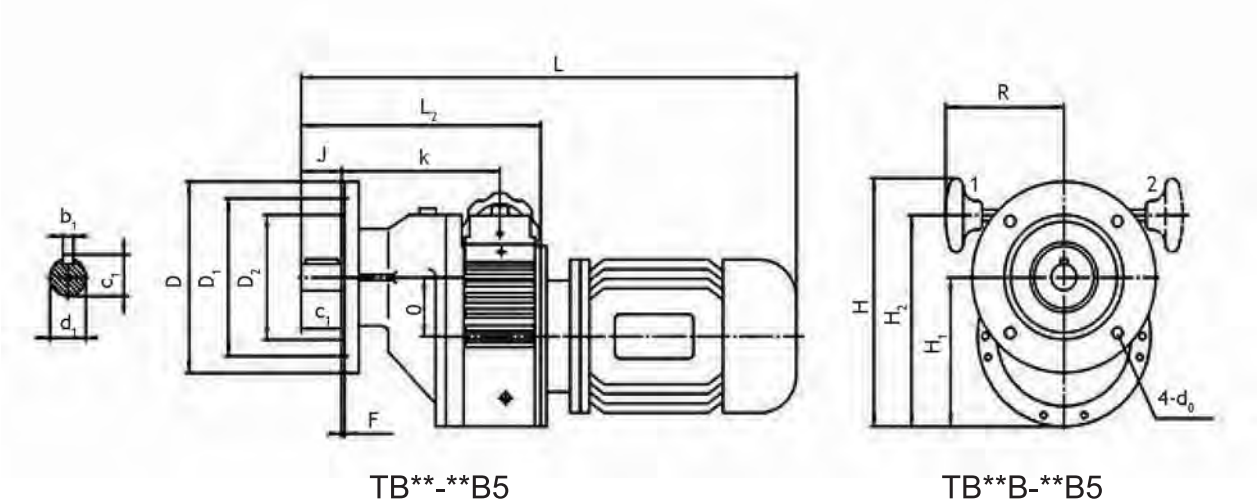


TB**B-**B3(K)

TB**-**B3(Z)

Model	Base No.	Mounting dimension			Input hole dimension			Outline dimension
		D_3	D_4	M	d_3	b_1	c_1	L_2
TB**B-**B3(K)	02	110	130	M8	14F8	5	16.3	248
	03	130	165	M10	19F8	6	21.8	293
	04	130	165	M10	24F8	8	27.3	343

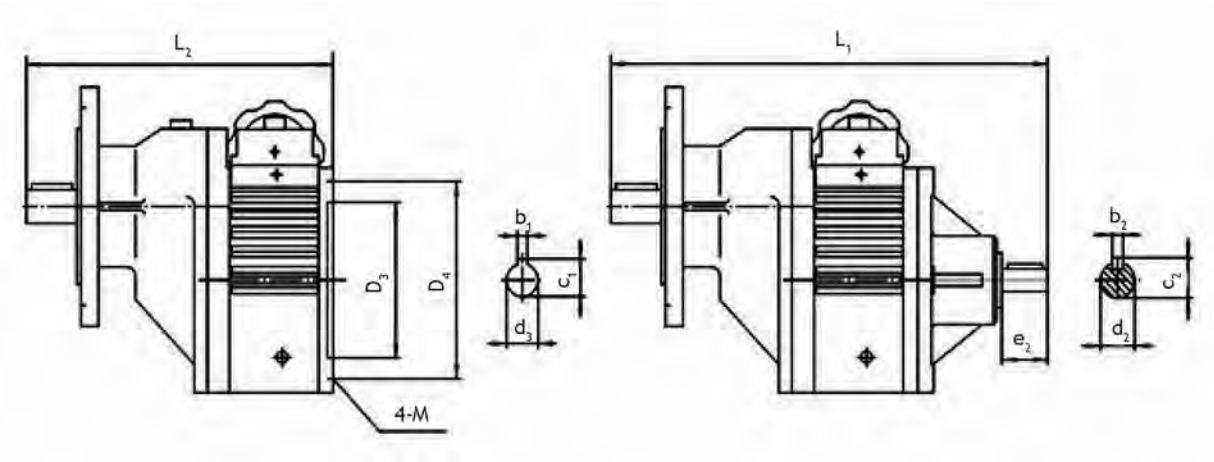
Model	Base No.	Input shaft dimension				Outline dimension
		d_2	b_2	c_2	e_2	L_1
TB**-**B3(Z)	02	14f6	5	16	30	331
	03	19f6	6	21.5	40	398
	04	24f6	8	28	43	455
	05	28f6	8	32	60	609
	06	38f6	10	43	70	696



TB**-**B5　　TB**B-**B5

Model	Base No.	Mounting dimension					Output shaft dimension				
		D_1	D_2	d_0	J	F	O	d_1	b_1	c_1	e_1
TB**-**B5	02	130	110	10.5	54	4	51	24f6	8	27	50
	03	165	130	12	65	3.5	61.5	28f6	8	31	60
	04	215	180	14.5	72	4.5	78	38f6	10	41	70
	05	265	230	13.5	100	5	103	48f6	14	51.5	100
	06	300	250	18	110	5	118	55f6	16	59	110
TB**B-**B5	02	130	110	10.5	54	4	51	24f6	8	27	50
	03	165	130	12	65	3.5	61.5	28f6	8	31	60
	04	215	180	14.5	72	4.5	78	38f6	10	41	70

Model	Base No.	Outline dimensions								N · W (kg)
		H	H_1	H_2	L	L_2	D	K	R	
TB**-**B5	02	209	129	166	473	248	150	151	125	25
	03	263	163	209	542	287	200	171	133	43
	04	322	192	241	636	341	250	197	142	70
	05	416	250	310	797	457	300	267	190	150
	06	478	298	387	950	520	350	308	219	250
TB**B-**B5	02	211	131	169	473	248	150	151	125	21.5
	03	262	162	207	548	293	200	171	133	29
	04	322	192	241	639	343	250	197	142	62



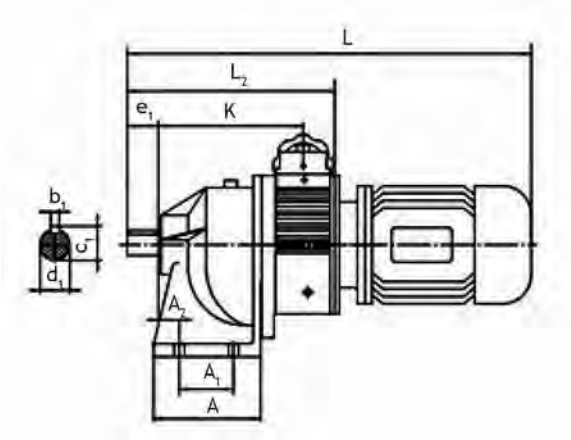
TB**B-**B5(K)

TB**-**B5(Z)

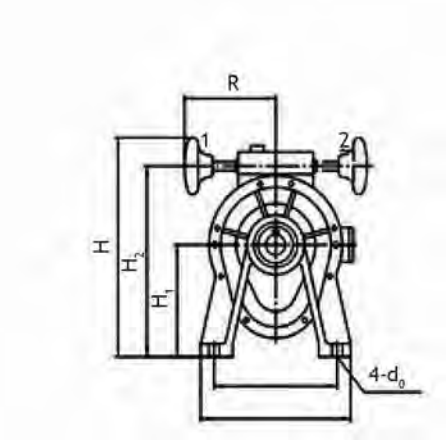
Model	Base No.	Mounting dimension			Input hole dimension			Outline dimension
		D_3	D_4	M	d_3	b_1	c_1	L_2
TB**B-**B5(K)	02	110	130	M8	14F8	5	16.3	248
	03	130	165	M10	19F8	6	21.8	293
	04	130	165	M10	24F8	8	27.3	343

Model	Base No.	Input shaft dimension				Outline dimension	
		d_2	b_2	c_2	e_2	L_1	L_2
TB**-**B5(Z)	02	14f6	5	16	30	333	248
	03	19f6	6	21.5	40	398	287
	04	24f6	8	28	43	455	341
	05	28f6	8	32	60	610	457
	06	38f6	10	43	70	696	520

6.5-30B3/B5
Selection & dimensions for two- stage gear speed reducer



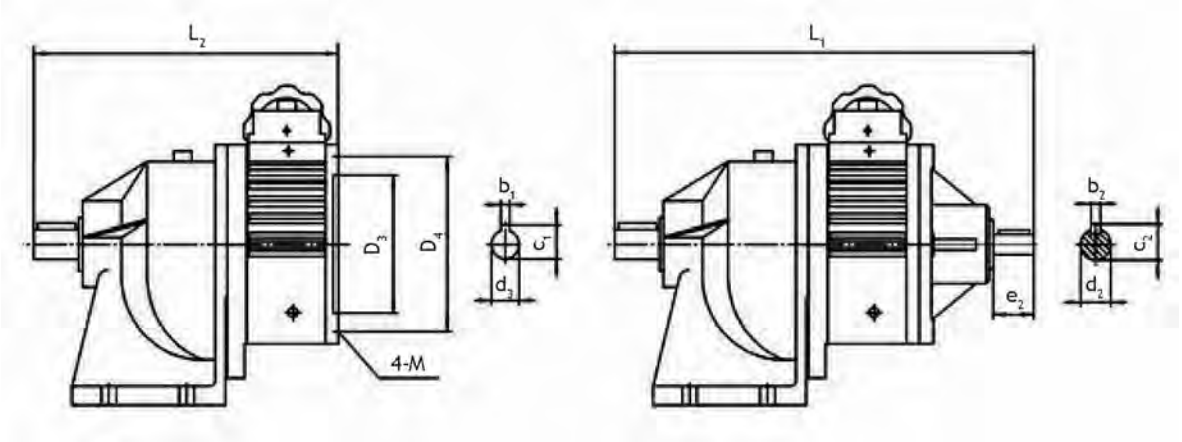
TB**-**B3



TB**B-**B3

Model	Base No.	Mounting dimension				Output shaft dimension			
		A_1	A_2	d_0	B_1	d_1	b_1	c_1	e_1
TB**-**B3	02	85	18	12	150	28f6	8	31	55
	03	106	26	14.5	174	28f6	8	31	60
	04	130	27	14	200	38f6	10	41	70
	05	180	44	18	246	55f6	16	59	110
	06	252	60	21	300	70f6	20	74.5	140
TB55/TB75-6.5B3	03	106	26	14.5	174	28f6/30f6	8	31	60
TB**B-**B3	02	85	18	12	150	28f6	8	31	55
	03	106	26	14.5	174	28f6	8	31	60
	04	130	27	14	200	38f6	10	41	70
TB55B/TB75B-6.5B3	03	106	26	14.5	174	28f6/30f6	8	31	60
TB25-25B3(S)	02	74.5	13	10	105	20f6	6	22.5	38.5

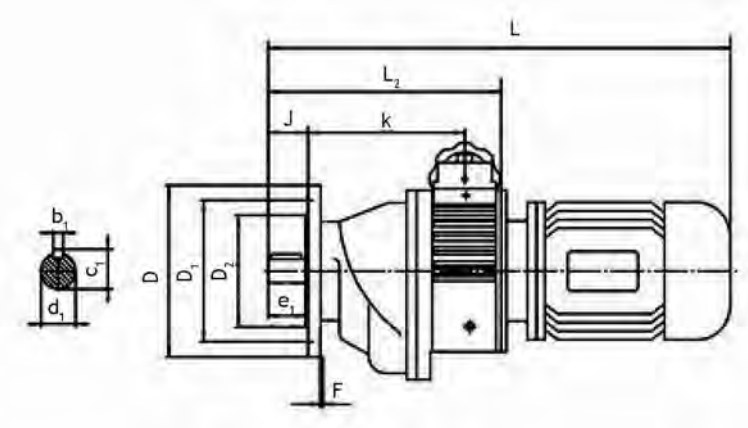
Model	Base No.	Outline dimension									N · W (kg)
		H	H_1	H_2	L	L_2	A	B	K	R	
TB**-**B3	02	242	110	199	520	295	142	190	201	125	29
	03	302	152	259	600	344	168	212	235	133	49
	04	337	172	299	702	407	185	255	266	142	77
	05	441	235	398	903	563	264	320	366	190	174
	06	530	280	487	1124	694	345	384	452	219	270
TB55/TB75-6.5B3	03	302	152	259	600	344	168	212	235	133	49
TB**B-**B3	02	242	110	199	524	299	142	190	201	125	22.5
	03	302	152	259	605	350	168	212	235	133	35
	04	337	172	299	704	409	185	255	266	142	69
TB55B/TB75B-6.5B3	03	302	152	259	605	350	168	212	235	133	35
TB25-25B3(S)	02	210	80	168	446	253.2	119	128	158	125	25



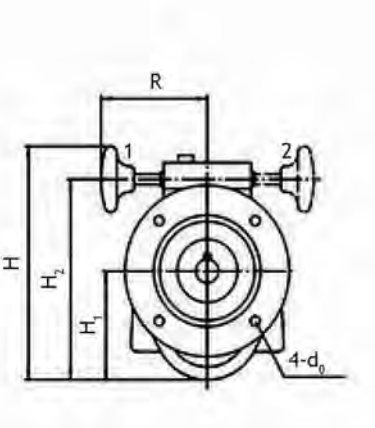
TB**B-**B3(K)　　TB**-**B3(Z)

Model	Base No.	Mounting dimension			Input hole dimension			Outline dimension
		D_3	D_4	M	d_3	b_1	c_1	L_2
TB**B-**B3(K)	02	110	130	M8	14F8	5	16.3	299
	03	130	165	M10	19F8	6	21.8	350
	04	130	165	M10	24F8	8	27.3	409

Model	Base No.	Input shaft dimension				Outline dimension
		d_2	b_2	c_2	e_2	L_1
TB**-**B3(Z)	02	14f6	5	16	30	382
	03	19f6	6	21.5	40	345
	04	24f6	8	28	43	521
	05	28f6	8	32	60	716
	06	38f6	10	43	70	870



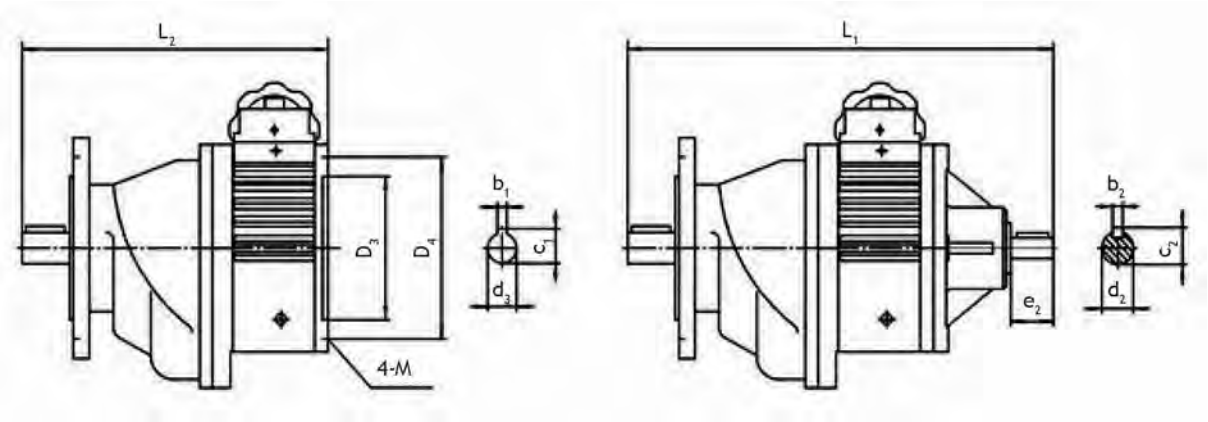
TB**-**B5



TB**B-**B5

Model	Base No.	Mounting dimension					Output shaft dimension			
		D_1	D_2	d_0	J	F	d_1	b_1	c_1	e_1
TB**-**B5	02	130	110	12	57	4	28f6	8	31	55
	03	130	110	12	63	3.5	28f6	8	31	60
	04	215	180	14.5	72	4	38f6	10	41	70
	05	265	230	13.5	120	5	55f6	16	59	110
	06	300	250	18	145	5	70f6	20	74.5	140
TB55/TB75-6.5B5	03	165	130	12	63	3.5	28f6/30f6	8	33	60
TB**B-**B5	02	130	110	10.5	57	4	28f6	8	31	55
	03	130	110	12	67	4	28f6	8	31	60
	04	215	180	14.5	72	4	38f6	10	41	70
TB55B/TB75B-6.5B5	03	165	130	12	63	3.5	28f6/30f6	8	33	60
TB25-25B5(S)	02	110	86	10	44	4	20f6	6	22.5	38.5
TB1.5/TB1.5B-21B5	04	165	130	12	61.5	3.5	30f6	8	33	60
TB2/TB2.4(2/2.4B)-28/56B5	04	215	180	6- ϕ 14	70	4.5	38f6	10	41	66
TB2/TB2.4(2/2.4B)-28/56B5(S)	04	165	130	6- ϕ 14	70	4.5	30f6	8	33	66

Model	Base No.	Outline dimension								N · W (kg)
		H	H_1	H_2	L	L_2	D	K	R	
TB**-**B5	02	238	108	196	520	295	150	199	125	29
	03	277	127	234	599	344	160	231	133	49
	04	334	168	295	702	407	250	263	142	77
	05	435	229	393	903	563	300	355	190	174
	06	514	264	471	1124	69	350	448	219	270
TB55/TB75-6.5B5	03	277	127	234	605	350	200	231	133	49
TB**B-**B5	02	238	108	196	524	299	150	199	125	25.5
	03	277	127	234	601	346	160	231	133	35
	04	334	168	295	704	409	250	263	142	69
TB55B/TB75B-6.5B5	03	277	127	234	605	350	200	231	133	35
TB25-25B5	02	210	80	168	446	253.2	136	158	105	25
TB1.5B/TB1.5B-21B5	04	280	115	241	655/657	360/362	200	225	142	70
TB2/2.4(2/2.4B)-28/56B5	04	334	168	295	688/690	363/365	250	222	142	80
TB2/2.4(2/2.4B)-28/56B5(S)	04	334	168	295	688/690	363/365	200	222	142	80



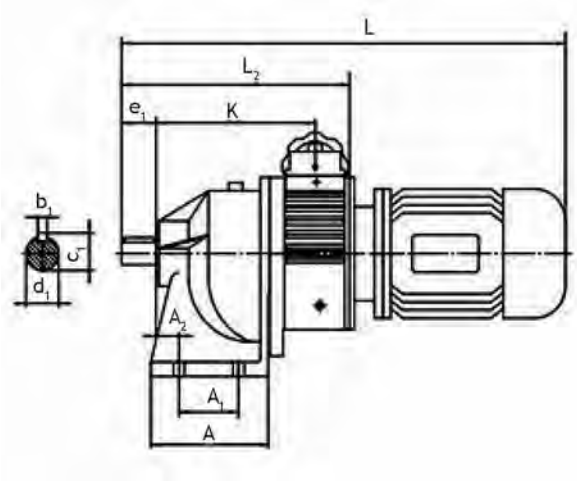
TB**B-**B5(K)

TB**-**B5(Z)

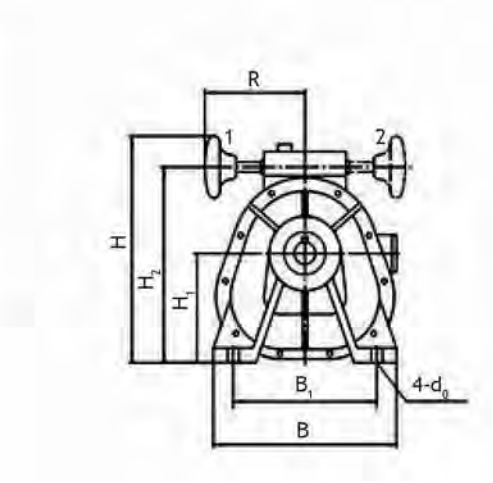
Model	Base No.	Mounting dimension			Input hole dimension			Outline dimension
		D_3	D_4	M	d_3	b_1	c_1	L_2
TB**B-**B5(K)	02	110	130	M8	14F8	5	16.3	299
	03	130	165	M10	19F8	6	21.8	350
	04	130	165	M10	24F8	8	27.3	409

Model	Base No.	Input shaft dimension				Outline dimension
		d_2	b_2	c_2	e_2	L_1
TB**-**B5(Z)	02	14f6	5	16	30	382
	03	19f6	6	21.5	40	345
	04	24f6	8	28	43	521
	05	28f6	8	32	60	716
	06	38f6	10	43	70	870

(2-4.7B3/B5)
Technical Characteristics & dimensions for three- stage gear reducer



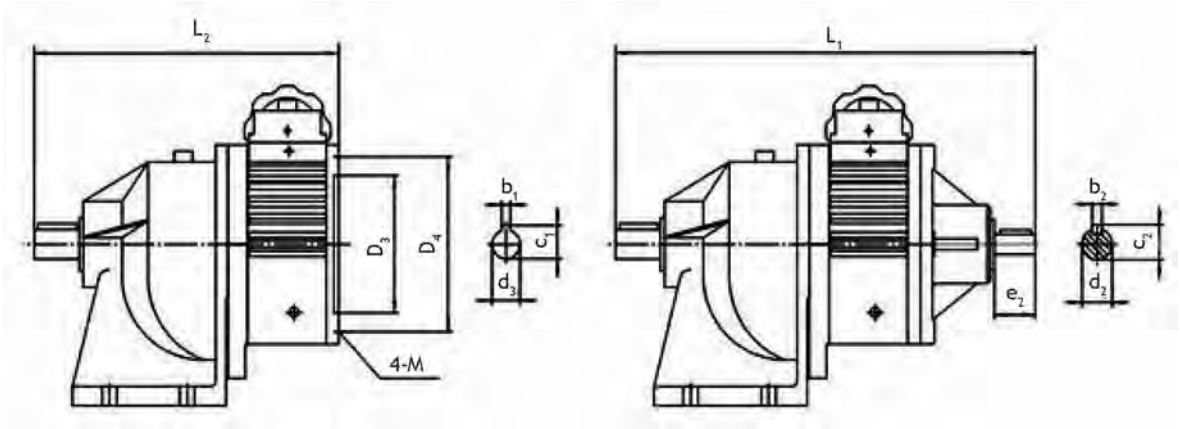
TB**-**B3



TB**B-**B3

Model	Base No.	Mounting dimension				Output shaft dimension			
		A_1	A_2	d_0	B_2	d_1	b_1	c_1	e_1
TB**-**B3	02	100	33	12	150	32f6	10	35	60
	03	120	39	14.5	185	38f6	10	41	70
	04	160	25	14.5	210	42f6	12	45	80
TB**B-**B3	02	100	33	12	150	32f6	10	35	60
	03	120	39	14.5	185	38f6	10	41	70
	04	160	25	14.5	210	42f6	12	45	80

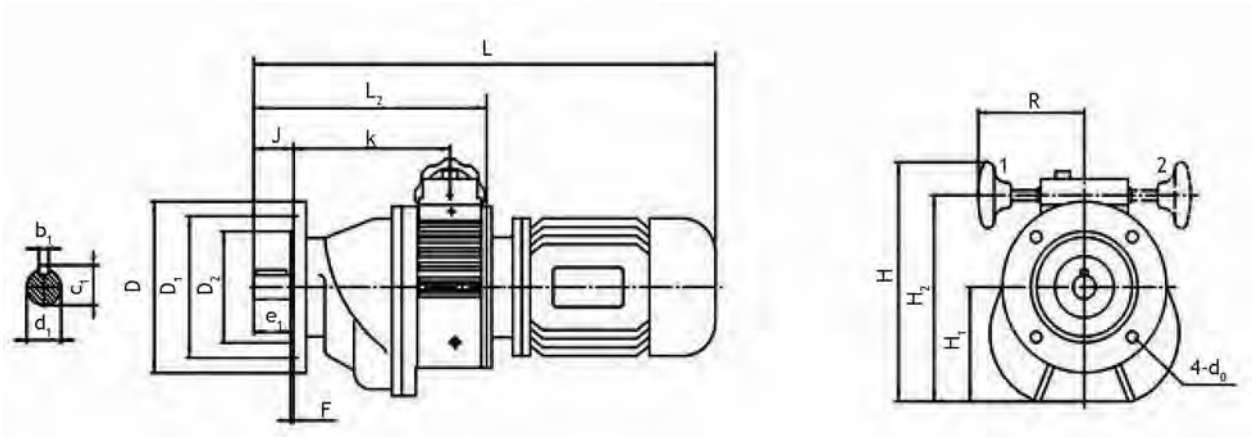
Model	Base No.	Outline dimension									N · W (kg)
		H	H_1	H_2	L	L_2	A	B	K	R	
TB**-**B3	02	241	110	199	557	332	168	190	233	125	33
	03	285	135	242	651	396	193	236	271	133	60
	04	331	165	292	759	464	240	262	313	142	85
TB**B-**B3	02	241	110	199	560	335	168	190	233	125	29.5
	03	285	135	242	651	396	193	236	271	133	46
	04	331	165	292	761	466	240	262	313	142	77



TB**B-**B3(K)　　TB**-**B3(Z)

Model	Base No.	Mounting dimension			Input hole dimension			Outline dimension
		D_3	D_4	M	d_3	b_1	c_1	L_2
TB**B-**B3(K)	02	110	130	M8	14F8	5	16.3	335
	03	130	165	M10	19F8	6	21.8	396
	04	130	165	M10	24F8	8	27.3	466

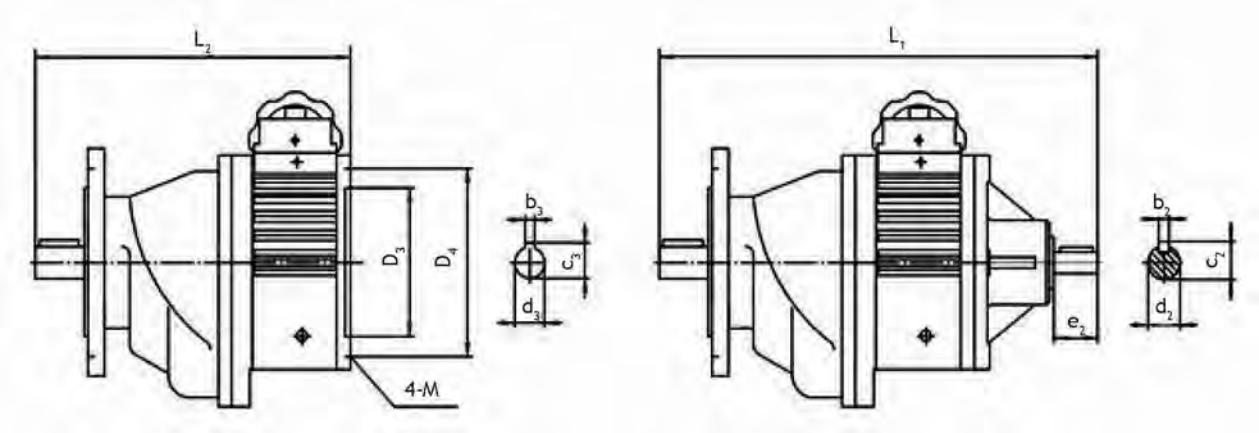
Model	Base No.	Input shaft dimension				Outline dimension
		d_2	b_2	c_2	e_2	L_1
TB**-**B3(Z)	02	14f6	5	16	30	419
	03	19f6	6	21.5	40	517
	04	24f6	8	28	43	578



TB**-**B5　　TB**B-**B5

Model	Base No.	Mounting dimension					Output shaft dimension			
		D_1	D_2	d_0	J	F	d_1	b_1	c_1	e_1
TB**-**B5	02	130	110	11	61	3.5	32f6	10	35	60
	03	165	130	14	70	3.5	38f6	10	41	70
	04	215	180	14.5	80	4	42f6	12	45	80
TB**B-**B5	02	130	110	11	61	3.5	32f6	10	35	60
	03	165	130	14	70	3.5	38f6	10	41	70
	04	215	180	14.5	80	4	42f6	12	45	80

Model	Base No.	Outline dimension								N · W (kg)
		H	H_1	H_2	L	L_2	D	K	R	
TB**-**B5	02	248	116	205	556	331	150	232	125	33
	03	278	133	240	615	390	200	271	133	60
	04	329	163	290	759	464	250	311	142	85
TB**B-**B5	02	248	116	205	560	335	150	232	125	29.5
	03	278	133	240	618	396	200	271	133	46
	04	329	163	290	761	466	250	311	142	77



TB**B-**B5(K)

TB**-**B5(Z)

Model	Base No.	Mounting dimension			Input hole dimension			Outline dimension
		D_3	D_4	M	d_3	b_1	c_1	L_2
TB**B-**B5(K)	02	110	130	M8	14F8	5	16.3	335
	03	130	165	M10	19F8	6	21.8	396
	04	130	165	M10	24F8	8	27.3	466

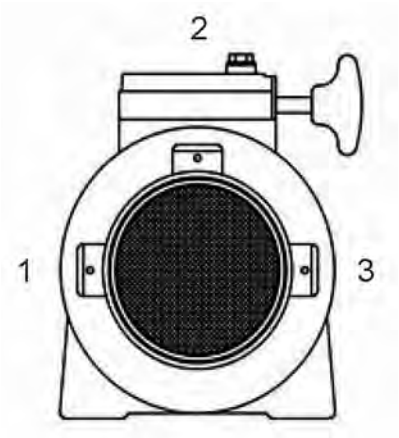
Model	Base No.	Input shaft dimension				Outline dimension
		d_2	b_2	c_2	e_2	L_1
TB**-**B5(Z)	02	14f6	5	16	30	418
	03	19f6	6	21.5	40	501
	04	24f6	8	28	43	578

TB series with number marked

Type	Base No.	Other dimension
TB**-190B5 TB**-190B5(Z)	03	According to TB-stepless speed variator
	04	
	05	
	06	
TB**-IB3 TB**-IB3(Z) TB**B-IB3(K)	02(B)	
	03(B)	
	04(B)	
	05	
TB**-IB5 TB**-IB5(Z) TB**B-IB5(K)	03(B)	
	04(B)	
	05	
TB**-IB5 TB**-IB5(Z) TB**B-IB5(K)	02(B)	
	03(B)	
	04(B)	
	05	
TB**-IB5 TB**-IB5(Z) TB**B-IB5(K)	02(B)	
	03(B)	
	04(B)	
	05	
TB**-IIIB3 TB**-IIIB3(Z) TB**B-IIIB3(K)	02(B)	
	03(B)	
	04(B)	
TB**-IIIB5	02(B)	
	03(B)	
	04(B)	

Note : “B” stands for die cast aluminum variator casting

Motor thermal box position (viewed speed control cover box from fan cowl of motor)



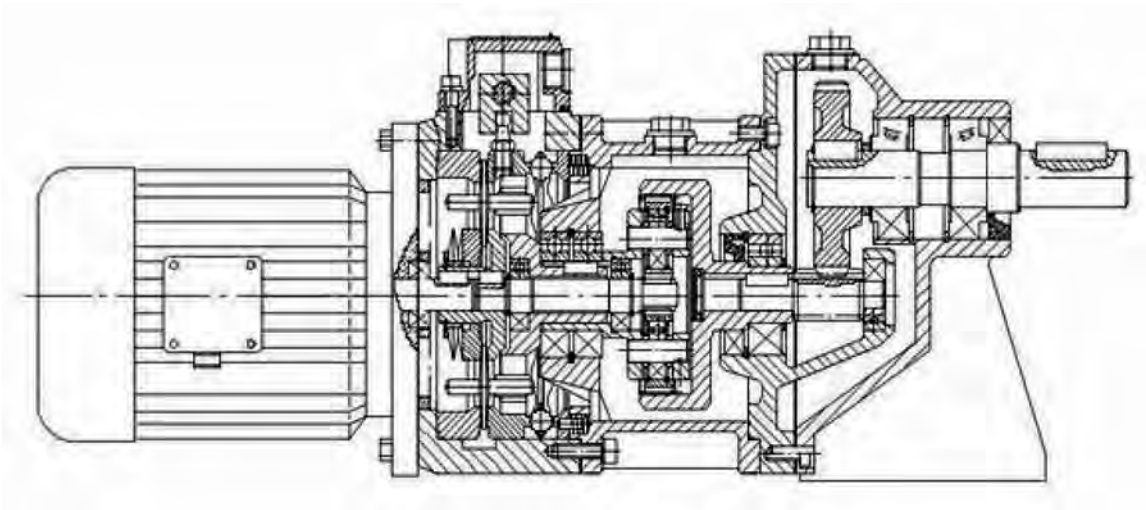
(1 Means the standard position)

TB (0~n) series variator with differential speed

Introduction

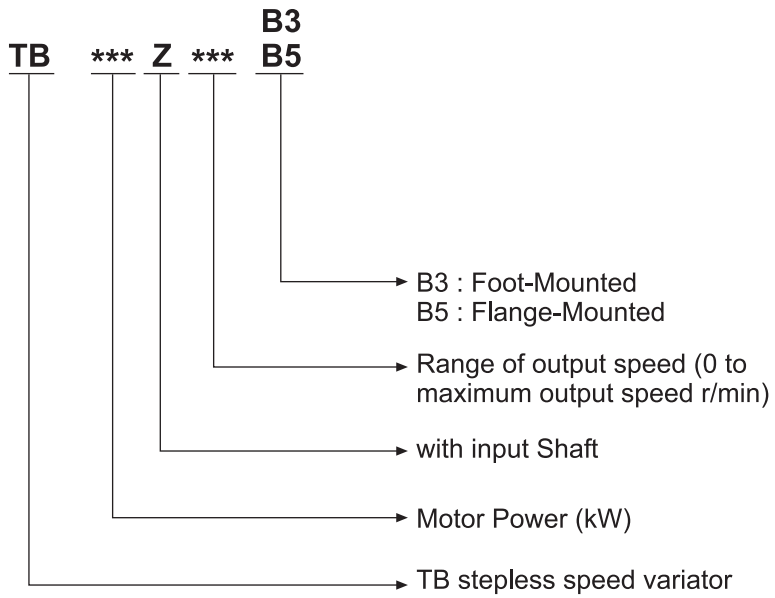
Differential sleptess speed variator; which conforms to the standard on TB/T6950-93 (Planet cone disk stepless speed variator)
It features a simple structure. reliable pertormance. big variable range (the ratio between the highest output speed and the lowest output speed is 5 to 1), agile and reliable speed adjustment. small volume, low noise, and easy maintenance etc. It can be used as a power transmission in automatic prodution lines of all kinds of industries. a continuous variable transmission of testing equipments in scientific and research Institutions. Especially for automatic production lines of ceramics, beverage, foodstuff. Electronics, leather tanning. chemical. textile. carpentry and other industries.

How it works



Differential stepless speed variator is e new type of continuous variable transmission on the basis of TB stepless speed variator by adding e differential transmission device, in addition to all the advanced features of the TB slepless speed variator, the adjustive range Is infinite. Usually, It commonly has small torque al low speed. so the speed can't be near zero. It is recomomed to be used within the speed range from1/10 of the highest speed to the highest speed.

Model Designation



Example

- TB 0.75-(0~200)B3: The input power of the stepless variator is 0.75kW; minimum output speed is 0 r/min; maximum output speed is 40*5=200r/min; B3 means foot mounting.
- TB 0.37-(0~900)K: The input power of the stepless variator is 0.37kw,minimum output speed is or/min, maximum output speed is 900r/min; B5 means flange mounting.

Attention of using

- Don't turn the hand wheel when stopping.
- When using the differential stepless speed variator, you must have good understandarding their the mechnical characters. The speed selection must be within the scope from 1/10 of the highest speed to the highest speed.
- As differential stepless speed variator is complex in working principle, don‘t detach it by yourself, and it must be detached carefully by a professional technician according to the schematic diagram.
- For other precautions, please refer to the attention of using of TB stepless speed variator.

Guide for selection & ordering

- When ordering please choose the suitable model and specify it according to the speed and torque required. For special motors please state details clearly and consult with us. To realize the excellent characters of the variator, usual speed value should be at the middle of the variating range.

- Differential speed variator, speed range is should be range from 1/10 of the highest speed to middle of the highest speed. For example, usual speed range is 3-20 r/min, and the selecting variator speed range should be 0~23.5 r / min, e.g . TB*** - (0~23.S 1 *. At the same time, pay attention to the output torque list in variator parameters. For example, TB 0.75- (0~23.S) D, its torque is 426 N•m, means speed range is 2.35~23.5 r / min, the maximum output torque is 426 N- m within its variator speed range. If excess, it maybe cause skid faults resulting from lower torque.

- When ordering it is recommended to choose the standard products listed in the catalogue. Special require ments please state detail in the contract, such as the positions of motor thermal box and the hand wheel, the mounting position and the output speed etc.

- We have a professional designing and manufacturing team which is qualified to accept special orders and design particulars for customers.

- The speed-adjustment parts of variator is lubricated by oil Ub-3 . The products is filled with oil in the factory which can be used when turning on.

- We are responsible for offering maintenance guide.

Selection table

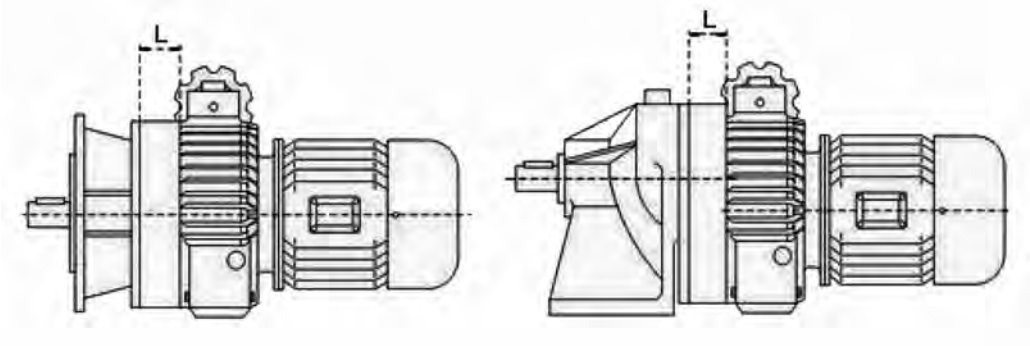
Base No.		02		03		04	
Motor power		0.25	0.37	0.55	0.75	1.1	1.5
Motor pole		(1400r/min) 4poles (1400r/min)					
Variator model	Output speed	Output torque allowed (N.m)					
	0-950	3.5-1.8	5.1-2.7	5.1-2.7	8-4	11-5.4	15.3-8	21-11
With single gear speed reducer	0-500	6.5-3.4	9.5-5	9.5-5	14.2-7.4	20-10	29.2-15	40-20
	0-400	8-4.2	12.3-6.2	12.3-6.2	17.5-9.3	25-12.5	37-18.5	50-25
	0-300	11-5.6	15.8-8.3	15.8-8.3	24.5-13	33.2-16.8	50-21.7	65-34
	0-200	16-8.4	24-12.5	24-12.5	35.4-18.5	50-25	73-37	100-50.5
With two-stage gear speed reducer	0-150	--	--	--	--	--	--	--
	0-140	--	--	--	52-26	70-35.4	105-52	143-71
	0-125	25-13	39-20	39-20	--	--	--	--
	0-100	--	--	--	--	--	--	--
	0-90	--	--	--	81-40	100-55	--	--
	0-75	42-22	65-32.6	65-32.6	--	--	196-97	255-132
	0-65	--	--	--	113-56	150-76	--	--
	0-45	65-37	105-54	105-54	--	--	--	--
	0-40	--	--	--	182-91	250-124	--	--
With three-stage gear speed reducer	0-23.5	138-69	204-102	204-102	292-150	426-207	603-303	795-413
	0-10	238-96	258-141	258-141	426-356	426	787-420	795-429

Note: Input power uint : kW Output speed unit : r/min

Installation pattern

- Refer to installation pattern for TB series variator installation pattern

Dimensions



Base No.	L	Other dimension
02	41	Referring to TB series variator
03	36	
04	34	

Appendix
Comparison for lubrication replacement

ISO	COMPANY	VG32
TB		Ub-1, Ub-3
RECOMMENDED LUBRICANTS	SHELL	A. T. F. DEXRON
	ESSO	A. T. F. DEXRON TORQUE FLUID N45
	MOBIL	A. T. F. 220, DTE24, Mobilfluid25
	CASTROL	TQ. DEXRON II
	BR	AUTRAN DX, Energol HL-XP32
	IP	A. T. F. DEXRON FLUID
		BLASIA 32

Reason and solution on problem

Problems	Reasons	Solutions
Overheating	Overload Insufficient oil Inferior oil Excessive oil	Adjust load or select larger size Fill in adquate oil Fill in proper oil Reduce Oil
Noise	Poor fit between gear and gear shaft Bearing damaged orclearance too large Insufficient oil Invaded by foreign objects	Optimize the suffaces and gears Replace bearing Fill in adequate lubricant Remove foreign objects and replace oil
Failed to adjust speed	Planet wheel wore out speed control cam or fixed-ring damaged driver or press-ring damaged	Mending or replace planet wheel Mending or replace speed control cam or fixed-ring Mending or replace driver or press-ring
Motor running but output shaft don' t run	Carrier damaged key of output shaft damaged Circlip of output shaft damaged key of motor damaged	Replace Carrier Replace key of output shaft Replace Circlip of output shaft Replace key of motor
OIL leakage	Oil seal damaged Gasket damaged Excess oil Oil plug loosen Oil-level plug damaged	Replace Oil seal Replace Gasket Adjust quantity of oil Tighten Oil plug Replace Oil-level plug

TKM...28

Variator Flange Mounting

TRF Helical Gear

MRV 025-150F

NRV 025-150F

Variator UDL...B3 + Motor

Variator TB + Motor

Variator Flange UDL...B5 + Motor

Variator UDL...B5 + Motor

UDL-MRV Stepless speed variator and worm gear units

UDL-G3LS

UDL-G3FS