

MM - Series worm gearboxes
MMM- Series motorised worm gearboxes



- High power to weight ratio
- Wide range of mounting options
- Virtually maintenance-free

PRODUCT RANGE



PU + MMM



VARIATOR + MMM



MMM...B 3



MMM...B 5

PRODUCT RANGE



MMM 025 ~ 130



MMM 030 ~ 130



MMM + MMM



MMM + MMW



'MM' Series Gearboxes

Mother Motor provides most comprehensive range of gearboxes for over 40 years in India. Wide range of Power Transmission products offered by **Mother** enjoy the international reputation for quality and reliability. Over one million gears supplied by **Mother** are working to the entire satisfaction of our valued customers. Naturally customers keep coming back to us making **Premium** retain '**Leadership in Power Transmission**'.

Technical Characteristics :

'MM' series gearboxes are manufactured with high quality material and modern design in order to guarantee the maximum reliability and life.

Housing, flanges and feet are made out of aluminium alloy upto size 090 and for sizes 110 and above cast iron is used.

Wormshafts are made of steel and are case hardened to 58-60 HRC and profile ground.

The thread grinding in the gear ratios that the module value permits is carried out with ZI-Profile. This improves the contact between the toothed surfaces and therefore performance and reduces operating noise.

The wormwheel has a G20 cast iron hub onto which a casting in AB1 Bronze RIM is fitted.

To guarantee long life, ball bearings of reputed make used.

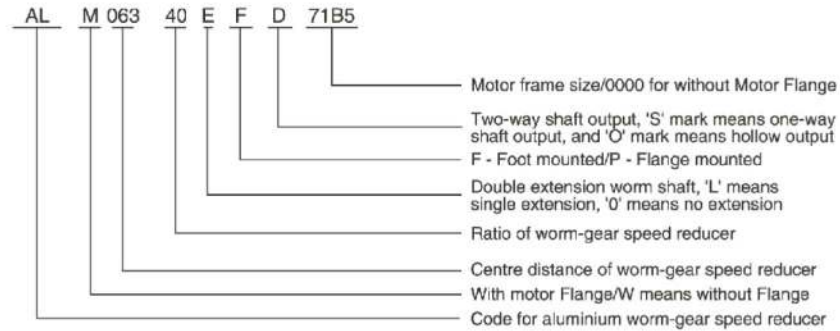
Lubrication of Gearboxes :

Gearboxes are supplied filled with synthetic oil grade ISO VG 320 which is virtually maintenance free and does not require oil change.

Measurement Units

i	= Ratio of the gear unit
n1	= Input speed (rpm)
T2'	= Motor output torque (NM)
Tc	= Ambient temperature (°C)
T2	= Gear Box output torque (NM)
P	= Gear Unit Power (Kw)
FS	= Service Factor
n2	= Output speed (rpm)

Model & mark



Mother MOTOR 'MM' Series Gearbox Selection

Gearbox Selection :

In order to select the right gearbox, the torque T_2' required by the user and the output speed n_2 for a certain value of n_1 rpm must be taken into consideration. Given the values, select the corresponding gearbox referring to the tables of the gearbox performance where $T_2' \times FS$ is lower or equal to T_2 where FS is the application service factor.

Service factor :

The service factor FS permits approximate qualification of the type of application, taking into account the type of load, length of operation hr/d (hours/day) and the number of start-up/hour. The FS values reported in Table 1 refer to a drive unit with an electric motor. If a combustion engine is used, a multiplication factor of 1.5 must be applied. If the electric motor applied is self-breaking, consider twice the number of start-up than those actually required.

TABLE 1

SERVICE FACTOR (FS)										
PRIME MOVER	hr/d	UNIFORM LOAD					MODERATE SHOCK LOAD		HEAVY SHOCK LOAD	
		No. of start-up per hr.					No. of start-up per hr.		No. of start-up per hr.	
		4	16	32	125	500	16	500	16	500
HYDRAULIC / ELECTRIC MOTOR	4	0.8	0.9	1.0	1.1	1.2	1.0	1.3	1.3	1.5
	8	1.0	1.1	1.3	1.3	1.3	1.3	1.5	1.5	1.8
	16	1.3	1.3	1.5	1.5	1.5	1.5	1.8	1.8	2.2
	24	1.5	1.5	1.8	1.8	1.8	1.8	2.2	2.2	2.5



Mother Motor 'MM' Series Gearboxes

Installation :

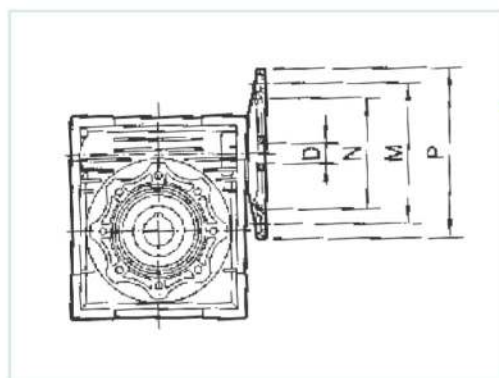
Install the gearbox and eliminate all vibrations. Take special care over alignment between the gear unit, the motor and the driven machine, fitting flexible or self-adjusting couplings wherever possible. When the gearbox is subject to prolonged overloads, shocks or possible jamming, fit thermostatic cut-outs, torque limiters, hydraulic couplings or other similar devices (take care not to exceed the permitted radial and axial loads on the input and output shafts). Ensure that the components to be assembled on the gearboxes are machined with tolerance SHAFT ISO h6/ HOLE ISO H7. Before assembling, clean and lubricate the surface to prevent jamming and contact oxidation. Assembly and disassembly should be made with care and possibly using the tapped hole in the end of the shaft which is provided for this purpose. When painting, protect the oilseals to prevent the paint from drying the rubber and impairing sealing properties.

Maintenance:

"Life" lubricated gearboxes do not require any maintenance as they are supplied with the correct quantity of synthetic oil. On gear units lubricated with mineral oil, after the first 500 -1000 operating hours change the oil, washing out the inside of the gear unit thoroughly. Synthetic lubricants are not compatible and hence should not be mixed with mineral lubricants.

Storage : In order to preserve and keep performances of the gearboxes unaltered, we suggest to follow these instructions:

- Do not store outdoors or in humid areas, protect the working parts (shafts, surfaces and flanges) with antioxidants.
- When the gearbox is left unused in an environment with high humidity, fill it completely with oil.
- Naturally, it must be returned to the operating level before the unit is used again.



MMM

THE CONFIGURATION COMBINE ALM SPEC WITH MOTORS COUPLING FLANGE AND RATIO

(*) If you want special key, Please call our Technical Service

SIZE	Motor Flange				D The hole diameter of input shaft										
	MOTOR FRAME	P	M	N	Transmission ratio										
					7.5	10	15	20	25	30	40	50	60	80	100
MMM025	56B14	80	65	50	9	9	9	9	9	9	9	9	9		
	63B5	140	115	95	11	11	11	11	11	11	11	11			
MMM030	63B14	90	75	60											
	56B5	120	100	80	9	9	9	9	9	9	9	9	9	9	
MMM040	56B14	80	65	50											
	71B5	160	130	110	14	14	14	14	14	14	14				
	71B14	105	85	70											
	63B5	140	115	95	11	11	11	11	11	11	11	11	11	11	11
	63B14	90	75	60											
	56B5	120	100	80								9	9	9	9
MMM050	80B5	200	165	130											
	80B14	120	100	80	19	19	19	19	19	19					
	71B5	160	130	110	14	14	14	14	14	14	14	14	14	14	
	71B14	105	85	70											
	63B5	140	115	95								11	11	11	11
	90B5	200	165	130	24	24	24	24	24	24	24				
MMM063	90B14	140	115	95											
	80B5	200	165	130	19	19	19	19	19	19	19	19	19	19	
	80B14	120	100	80											
	71B5	160	130	110							14	14	14	14	14
	71B14	105	85	70											
	110/112B5	250	215	180	28	28	28								
MMM075	110/112B14	160	130	110											
	90B5	200	165	130	24	24	24	24	24	24	24				
	90B14	140	115	95											
	80B5	200	165	130				19	19	19	19	19	19	19	19
	80B14	120	100	80											
	71B5	160	130	110								14	14	14	14
MMM090	100/112B5	250	215	180	28	28	28	28	28	28					
	110/112B14	160	130	110											
	90B5	200	165	130	24	24	24	24	24	24	24	24	24		
	90B14	140	115	95											
	80B5	200	165	130							19	19	19	19	19
	80B14	120	100	80											
MMM110	132B5	300	265	230	38*	38*	38*	38*							
	110/112B5	250	215	180	28	28	28	28	28	28	28	28	28		
	90B5	200	165	130					24	24	24	24	24	24	24
	80B5	200	165	130										19	19
MMM130	132B5	300	265	230	38*	38*	38*	38*	38*	38*	38*				
	100/112B5	250	215	180					28	28	28	28	28	28	28
	90B5	200	165	130										24	24

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	Fr_2 [N]	f_s		
0.12	373.3	2.7	7.5	399	3	MMM 025	5622
	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		
	70	11	40	697	0.8		
	186.7	5.2	7.5	683	3.4	MMM 030	6314
	140	6.6	10	752	2.7		
	93.3	9.3	15	861	1.9		
	70	12	20	948	1.5		
	56	14	25	1021	1.5		
	46.7	16	30	1085	1.3		
	35	19	40	1194	0.9		
	28	22	50	1286	0.8		
	46.7	17	30	2087	2.6	MMM 040	6314
	35	21	40	2298	1.9		
	28	25	50	2475	1.5		
	23.3	28	60	2630	1.3		
	17.5	33	80	2895	1		
	14	38	100	3118	0.8		
	18.7	42	75	2833	1.2	PU063 + MMM 040	6314
	15.6	46	90	3011	1.2		
	11.7	57	120	3314	0.9		
	9.3	66	150	3490	0.7		
	7.8	74	180	3490	0.6		
	23.3	29	60	3610	2.3	MMM 050	6314
	17.5	35	80	3973	1.9		
	14	39	100	4280	1.4		
	9.3	68	150	4840	1.3	PU063 + MMM050	6314
	7.8	75	180	4840	1.1		
	5.8	88	240	4840	0.8		
	4.7	98	300	4840	0.7		
	4.7	112	300	4840	1.2	MMM030 + 050	6314
	3.5	138	400	4840	0.9		
	2.8	160	500	4840	0.7		
	5.8	92	240	6270	1.5	PU063 + MMM063	6314
	4.7	103	300	6270	1.2		
	2.8	168	500	6270	1.3	MMM030 + 063	6314
	2.3	199	600	6270	1.1		
	1.9	217	750	6270	0.9		
	1.6	279	900	7380	1.2	MMM040 + 075	6314
	1.2	344	1200	7380	0.9		
	0.78	470	1800	8180	0.9	MMM 040 + 090	6314
	0.58	593	2400	8180	0.9		
	0.47	731	3000	10320	1.2	MMM050 + 110	6314
	0.35	884	4000	10320	1		
	0.28	1023	5000	10320	0.8		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s		
0.18	373.3	4.0	7.5	542	3.2	MMM030	6312
	280	5.2	10	597	2.5		
	186.7	7.4	15	683	1.7		
	140	9.5	20	752	1.3		
	112	11	25	810	1.4		
	93.3	13	30	861	1.1		
	70	16	40	948	0.9		
	186.7	7.7	7.5	683	2.3	MMM030	6324
	140	10	10	752	1.8		
	93.3	14	15	861	1.3		
	70	18	20	948	1		
	56	20	25	1021	0.9		
	46.7	24	30	1085	0.8		
	93.3	14	30	1657	2.4	MMM040	6312
	70	17	40	1824	1.8		
	56	21	50	1964	1.4		
	70	19	20	1824	2	MMM040	6324
	56	23	25	1964	1.7		
	46.7	25	30	2087	1.7		
	35	32	40	2298	1.3		
	28	37	50	2475	1		
	23.3	42	60	2630	0.8		
	45	28	20	2113	1.5	MMM 040	7116
	36	34	25	2276	1.3		
	30	38	30	2419	1.3		
	22.5	47	40	2662	1		
	18.7	64	75	2833	0.8	PU063 + MMM 040	6324
	15.6	70	90	3011	0.8		
	11.7	85	120	3314	0.6		
	46.7	24	60	2865	2.1	MMM 050	6312
	35	30	80	3153	1.5		
	28	34	100	3397	1.2		
	35	33	40	3153	2.3	MMM050	6324
	28	39	50	3397	1.9		
	23.3	44	60	3610	1.6		
	17.5	52	80	3973	1.2		
	14	59	100	4280	0.9		
	18	56	50	3936	1.4	MMM050	7116
	15	63	60	4183	1.1		
	11.3	75	80	4604	0.9		
	18.7	64	75	3889	1.4	PU063 + MMM 050	6324
	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	0.6		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s		
0.18	12	95	75	4506	1.2	PU071- MMM050	7116
	10	105	90	4788	1.4		
	7.5	126	120	4840	1		
	15	66	60	5467	2.1	MMM063	7116
	11.3	79	80	6018	1.6		
	9	90	100	6270	1.4		
	9.3	103	150	6270	1.7	PU063 - MMM063	6324
	7.8	117	180	6270	1.4		
	5.8	139	240	6270	1		
	4.7	155	300	6270	0.8		
	12	97	75	5889	2.2	PU071 - MMM063	7116
	10	107	90	6250	2.4		
	7.5	131	120	6270	1.8		
	6	152	150	6270	1.4		
	5	168	180	6270	1.2		
	3.8	197	240	6270	0.9		
	3	218	300	6270	0.7		
	3.5	216	400	6270	1	MMM030/063	6324
	2.8	252	500	6270	0.8		
	5	179	180	7380	1.7	PU071 - MMM075	7116
	3.8	211	240	7380	1.2		
	3	235	300	7380	1		
	2.3	336	600	7380	1.1	MMM040/075	6324
	1.9	371	750	7380	0.9		
	1.6	419	900	7380	0.8		
	1.2	544	1200	8180	1	MMM050/110	6324
	0.93	647	1500	8180	0.8		
	0.78	727	1800	10320	1.5	MMM050/110	6324
	0.58	948	2400	10320	1.1		
0.25	373.3	5.6	7.5	542	2.3	MMM030	6322
	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		
	93.3	18	30	861	0.8		
	186.7	11	7.5	1315	3.6	MMM040	7114
	140	14	10	1447	2.8		
	93.3	20	15	1657	1.9		
	70	26	20	1824	1.5		
	56	32	25	1964	1.2		
	46.7	35	30	2087	1.3		
	35	44	40	2298	0.9		

PERFORMANCE PARAMETER

P _{1n} [kW]	n ₂ [1/min]	M _{2n} [Nm]	i	Fr ₂ [N]	f _s		
0.25	120	17	7.5	1524	2.6	MMM040	7126
	90	22	10	1677	2		
	60	31	15	1920	1.4		
	45	39	20	2113	1.1		
	36	48	25	2276	0.9		
	30	53	30	2419	0.9		
	35	42	80	3153	1.1	MMM050	6322
	28	48	100	3397	0.8		
	70	27	20	2503	2.7	MMM050	7114
	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		
	45	40	20	2900	1.9	MMM050	7126
	36	48	25	3124	1.5		
	30	54	30	3320	1.7		
	22.5	67	40	3654	1.2		
	18	78	50	3936	1		
	15	88	60	4183	0.8		
	18.7	88	75	3889	1	PU071 - MMM050	7114
	15.6	98	90	4132	1.1		
	11.7	121	120	4548	0.8		
	28	55	50	4440	2.4	MMM063	7114
	23.3	64	60	4719	2		
	17.5	76	80	5193	1.6		
	14	87	100	5595	1.4		
	18	81	50	5145	1.8	MMM063	7126
	15	92	60	5467	1.5		
	11.3	110	80	6018	1.2		
	9	125	100	6270	1		
	18.7	91	75	5083	1.8	PU071 - MMM063	7114
	15.6	100	90	5401	2		
	11.7	125	120	5945	1.5		
	9.3	143	150	6270	1.2		
	7.8	163	180	6270	1		
	5.8	192	240	6270	0.7		
	4.7	215	300	6270	0.6		
	12	135	75	5889	1.6	PU071 - MMM063	7126
	10	148	90	6259	1.8		
	7.5	181	120	6270	1.3		
	6	211	150	6270	1		
	7	150	400	6270	1.4	MMM030 + 063	6322
	5.6	175	500	6270	1.2		
	17.5	80	80	6130	2.3	MMM075	7114
	14	94	100	6603	1.9		

PERFORMANCE PARAMETER

P _{1n} [kW]	n ₂ [1/min]	M _{2n} [Nm]	i	Fr ₂ [N]	f _s		
0.25	11.3 9	116 133	80 100	7103 7380	1.7 1.4	MMM075	7126
	9.3 7.8 5.8 4.7	151 172 201 230	150 180 240 300	7380 7380 7380 7380	1.7 1.4 1.1 0.9	PU071 -MMM075	7114
	12 10 7.5 6 5	139 155 191 219 248	75 90 120 150 180	6952 7380 7380 7380 7380	2.4 2.5 1.9 1.5 1.2	PU071 -MMM075	7126
	3.5 2.8	321 375	400 500	7380 7380	1.1 0.8	MMM040/075	7114
	5 3.8 3	263 318 358	180 240 300	8180 8180 8180	1.9 1.4 1.1	PU071 - MMM090	7126
	2.3 1.9 1.6	488 553 612	600 750 900	8180 8180 8180	1.2 0.9 0.8	MMM040/090	7114
	1.2 0.93 0.78	776 924 1010	1200 1500 1800	10320 10320 10320	1.3 1.2 1.1	MMM050/110	7114
	0.58 0.47 0.35 0.28	1358 1626 1910 2132	2400 3000 4000 5000	13500 13500 13500 13500	1 0.8 0.6 0.5	MMM063/130	7114
0.37	373.3 280 186.7 140 112	8.3 11 16 20 25	7.5 10 15 20 25	1044 1149 1315 1447 1559	3.3 2.6 1.9 1.4 1.1	MMM040	7112
	186.7 140 93.3 70 56 46.7	16 21 30 39 47 52	7.5 10 15 20 25 30	1315 1447 1657 1824 1964 2087	2.4 1.9 1.3 1 0.8 0.8	MMM040	7124
	112 93.3 70 56 46.7 35	25 29 37 44 50 62	25 30 40 50 60 80	2140 2274 2503 2696 2865 3153	2 2.2 1.6 1.2 1 0.7	MMM050	7112

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	Fr_2 [N]	f_s		
0.37	140	21	10	1987	3.3	MMM050	7124
	93.3	31	15	2274	2.4		
	70	39	20	2503	1.8		
	56	47	25	2696	1.5		
	46.7	54	30	2865	1.5		
	35	68	40	3153	1.1		
	28	80	50	3397	0.9		
	23.3	89	60	3610	0.8		
	120	25	7.5	2091	3.3	MMM050	8016
	90	33	10	2302	2.5		
	60	47	15	2635	1.8		
	45	59	20	2900	1.3		
	36	72	25	3124	1		
	30	80	30	3320	1.1		
	35	70	40	4122	2.1	MMM063	7124
	28	82	50	4440	1.6		
	23.3	94	60	4719	1.4		
	17.5	113	80	5193	1.1		
	14	129	100	5595	0.9		
	45	60	20	3791	2.4	MMM063	8016
	36	73	25	4084	1.9		
	30	82	30	4339	2.1		
	22.5	102	40	4776	1.6		
	18	120	50	5145	1.2		
	15	137	60	5467	1		
	18.7	134	75	5083	1.2	PU071 + MMM063	7124
	15.6	148	90	5401	1.4		
	11.7	185	120	5945	1		
	9.3	212	150	6270	0.8		
	9.3	182	300	6270	1.3	MMM030/063	7112
	7	222	400	6270	1		
	23.3	97	60	5569	2	MMM075	7124
	17.5	119	80	6130	1.6		
	14	139	100	6603	1.3		
	18	124	50	6073	1.8	MMM075	8016
	15	141	60	6453	1.5		
	11.3	172	80	7103	1.2		
	9	196	100	7380	1		
	18.7	138	75	6000	1.8	PU071 - MMM075	7124
	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	206	75	6952	1.6	PU080 - MMM075	8016
	10	230	90	7380	1.7		
	7.5	283	120	7380	1.3		
	6	324	150	7380	1		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	Fr_2 [N]	f_s		
0.37	4.7	383	300	7380	1	MMM040/075	7124
	3.5	474	400	7380	0.7		
	11.3	184	80	7859	1.7	MMM090	8016
	9	212	100	8180	1.3		
	7.8	268	180	8180	1.5	PU071 - MMM090	7124
	5.8	321	240	8180	1.1		
	4.7	371	300	8180	0.9		
	6	347	150	8180	1.6	PU080 - MMM090	8016
	5	389	180	8180	1.3		
	3.8	471	240	8180	1		
0.55	4.7	406	300	8180	1.5	MMM040/090	7124
	3.5	505	400	8180	1.2		
	2.8	593	500	8180	0.9		
	2.3	722	600	8180	0.8		
	3.8	509	240	10320	1.6	PU080 - MMM110	8016
	3	577	300	10320	1.3		
	1.9	837	750	10320	1.3	MMM050 /110	7124
	1.6	928	900	10320	1.2		
	1.2	1148	1200	10320	0.8		
	0.93	1444	1500	13500	1.1	MMM063/130	7124
	0.78	1586	1800	13500	0.9		
0.75	373.3	12	7.5	1044	2.2	MMM040	7122
	280	16	10	1149	1.8		
	186.7	24	15	1315	1.3		
	140	30	20	1447	0.9		
	112	37	25	1559	0.8		
	140	31	20	1987	1.7	MMM050	7122
	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		
	186.7	24	7.5	1805	2.9	MMM050	8014
	140	32	10	1987	2.2		
	93.3	46	15	2274	1.6		
	70	59	20	2503	1.2		
	56	70	25	2696	1		
	46.7	80	30	2865	1		
	120	37	7.5	2091	2.2	MMM050	8026
	90	48	10	2302	1.7		
	60	69	15	2635	1.2		
	45	88	20	2900	0.9		

PERFORMANCE PARAMETER

P _{1n} [kW]	n ₂ [1/min]	M _{2n} [Nm]	i	Fr ₂ [N]	f _s		
0.55	70	56	40	3272	1.9	MMM063	7122
	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		
	70	60	20	3272	2.2	MMM063	8014
	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		
	60	70	15	3444	2.2	MMM063	8026
	45	90	20	3791	1.6		
	36	108	25	4084	1.4		
	30	123	30	4339	1.3		
	22.5	152	40	4776	1.1		
	35	99	80	4865	1.3	MMM075	7122
	28	116	100	5241	1		
	35	108	40	4865	2	MMM075	8014
	28	128	50	5241	1.6		
	23.3	144	60	5569	1.4		
	17.5	177	80	6130	1.1		
	14	206	110	6603	0.9		
	30	124	30	5122	2	MMM075	8026
	22.5	156	40	5637	1.5		
	18	184	50	6073	1.2		
	15	210	60	6453	1		
	18.7	205	75	6000	1.2	PU080 - MMM075	8014
	15.6	230	90	6375	1.3		
	11.7	284	120	7017	1		
	9.3	332	150	7380	0.8		
	12	306	75	6952	1.1	PU080 - MMM075	8026
	10	341	90	7380	1.1		
	17.5	189	80	6783	1.5	MMM090	8014
	14	221	100	7306	1.2		
	18	196	50	6719	2	MMM090	8026
	15	224	60	7140	1.6		
	11.3	274	80	7859	1.1		
	9	315	100	8180	0.9		
	15.6	240	90	7054	2.3	PU080 - MMM090	8014
	11.7	297	120	7764	1.6		
	9.3	355	150	8180	1.3		
	7.8	398	180	8180	1		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	Fr_2 [N]	f_s		
0.55	10	357	90	8174	2	PU080 - MMM090	8025
	7.5	441	120	8180	1.4		
	6	516	150	8180	1.1		
	5	578	180	8180	0.9		
	9.3	305	300	8180	2	MMM040/090	7122
	7	375	400	8180	1.5		
	5.6	441	500	8180	1.2		
	17.5	201	80	8571	2.6	MMM110	8014
	14	236	100	9232	2		
	11.3	293	80	9931	1.9	MMM110	8026
	9	344	100	10320	1.5		
	7.8	425	180	10320	1.8	PU080 - MMM110	8014
	5.8	513	240	10320	1.3		
	4.7	597	300	10320	1		
	7.5	462	120	10320	2.6	PU080 - MMM110	8026
	6	552	150	10320	2		
	5	620	180	10320	1.6		
	3.8	756	240	10320	1.1		
	4.7	615	300	10320	2	MMM050/110	8014
	3.5	810	400	10320	1.4		
	2.8	938	500	10320	1.1		
	2.3	1096	600	10320	1		
	1.9	1244	750	10320	0.9		
	3.8	756	240	13500	1.6	PU080 - MMM130	8026
	3	858	300	13500	1.3		
	2.8	957	500	13500	1.6	MMM063/130	8014
	1.9	1382	750	13500	1.2		
	1.2	2057	1200	13500	0.8		
0.75	373.3	17	7.5	1433	3	MMM050	8012
	280	22	10	1577	2.4		
	186.7	31	15	1805	1.7		
	140	41	20	1987	1.3		
	112	49	25	2140	1		
	93.3	56	30	2274	1.1		
	186.7	33	7.5	1805	2.1	MMM050	8024
	140	43	10	1987	1.6		
	93.3	62	15	2274	1.2		
	70	80	20	2503	0.9		
	140	43	20	2597	2.3	MMM063	8012
	112	52	25	2797	1.8		
	93.3	60	30	2973	2		
	70	77	40	3272	1.4		
	56	92	50	3524	1.1		
	46.7	106	60	3745	0.9		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	Fr_2 [N]	f_s		
0.75	93.3	63	15	2973	2.2	MMM063	8024
	70	82	20	3272	1.6		
	56	98	25	3524	1.3		
	46.7	112	30	3745	1.4		
	35	141	40	4122	1		
	120	51	7.5	2734	2.9	MMM063	90S6
	90	67	10	3009	2.3		
	60	96	15	3444	1.6		
	45	123	20	3791	1.2		
	36	147	25	4084	0.9		
	30	167	30	4339	1		
	46.7	107	60	4421	1.3	MMM075	8012
	28	159	100	5241	0.8		
	56	101	25	4160	2	MMM075	8024
	46.7	117	30	4421	2		
	35	147	40	4865	1.5		
	28	174	50	5211	1.2		
	23.3	197	60	5569	1		
	60	97	15	4065	2.4	MMM 75	90S6
	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		
	18.7	280	75	6000	0.9	PU080 - MMM075	8024
	15.6	313	90	6375	1		
	35	143	80	5383	1.6	MMM090	8012
	28	169	100	5799	1.2		
	28	182	50	5799	1.8	MMM090	8024
	23.3	209	60	6163	1.5		
	17.5	258	80	6783	1.1		
	14	302	100	7306	0.9		
	30	179	30	5667	2.6	MMM090	90S6
	22.5	226	40	6238	1.8		
	18	267	50	6719	1.4		
	15	306	60	7140	1.1		
	15.6	327	90	7054	1.7	PU080 - MMM090	8024
	11.7	405	120	7764	1.2		
	9.3	483	150	8180	0.9		
	7.8	543	180	8180	0.7		
	7	512	400	8180	1.1	MMM040/090	8012
	5.6	601	500	8180	0.9		
	17.5	274	80	8571	1.9	MMM110	8024
	14	322	100	9232	1.5		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	Fr_2 [N]	f_s		
0.75	15	325	60	9023	2.1	MMM110	90S6
	11.3	399	80	9931	1.4		
	9	470	100	10320	1.1		
	11.7	430	120	9811	2.2	PU080 - MMM10	8024
	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	PU090 - MMM110	90S6
	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		
	9.3	424	300	10320	2.8	MMM050/110	8012
	7	553	400	10320	2.1		
	5.6	640	500	10320	1.6		
	4.7	838	300	10320	1.5	MMM050/110	8024
	3.5	1105	400	10320	1.1		
	11.3	399	80	12989	2.1	MMM130	90S6
	9	470	100	13500	1.7		
	5.8	712	240	13500	1.4	PU080 - MMM130	8024
	4.7	813	300	13500	1.1		
	12.4	399	73	12575	4.4	PU090 - MMM130	90S6
	9.3	508	96.8	13500	3.2		
	7.4	607	121	13500	2.6		
	6.2	682	145.2	13500	2.1		
	4.6	832	193.6	13500	1.5		
	3.7	944	242	13500	1.2		
	2.8	1305	500	13500	1.1	MMM063/130	8024
	2.3	1557	600	13500	1		
	1.9	1772	750	13500	0.9		
	1.6	2014	900	13500	0.8		
1.1	373.3	25	7.5	1433	2.1	MMM050	8022
	280	33	10	1577	1.6		
	186.7	48	15	1805	1.2		
	140	62	20	1987	0.9		
	186.7	46	15	2359	2.1	MMM063	8022
	140	60	20	2597	1.6		
	112	72	25	2797	1.2		
	93.3	82	30	2973	1.4		
	70	104	40	3272	1		
	120	75	7.5	2734	2	MMM063	90L6
	90	98	10	3009	1.5		
	60	140	15	3444	1.1		
	45	180	20	3791	0.8		

PERFORMANCE PARAMETER

P _{1n} [kW]	n ₂ [1/min]	M _{2n} [Nm]	i	Fr ₂ [N]	f _s		
0.75	15	325	60	9023	2.1	MMM110	90S6
	11.3	399	80	9931	1.4		
	9	470	100	10320	1.1		
	11.7	430	120	9811	2.2	PU080 - MMM110	8024
	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	PU090 - MMM110	90S6
	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		
	9.3	424	300	10320	2.8	MMM050/110	8012
	7	553	400	10320	2.1		
	5.6	640	500	10320	1.6		
	4.7	838	300	10320	1.5	MMM050/110	8024
	3.5	1105	400	10320	1.1		
	11.3	399	80	12989	2.1	MMM130	90S6
	9	470	100	13500	1.7		
	5.8	712	240	13500	1.4	PU080 - MMM130	8024
	4.7	813	300	13500	1.1		
	12.4	399	73	12575	4.4	PU090 - MMM130	90S6
	9.3	508	96.8	13500	3.2		
	7.4	607	121	13500	2.6		
	6.2	682	145.2	13500	2.1		
	4.6	832	193.6	13500	1.5		
	3.7	944	242	13500	1.2		
	2.8	1305	500	13500	1.1	MMM063/130	8024
	2.3	1557	600	13500	1		
	1.9	1772	750	13500	0.9		
	1.6	2014	900	13500	0.8		
1.1	373.3	25	7.5	1433	2.1	MMM050	8022
	280	33	10	1577	1.6		
	186.7	48	15	1805	1.2		
	140	62	20	1987	0.9		
	186.7	46	15	2359	2.1	MMM063	8022
	140	60	20	2597	1.6		
	112	72	25	2797	1.2		
	93.3	82	30	2973	1.4		
	70	104	40	3272	1		
	120	75	7.5	2734	2	MMM063	90L6
	90	98	10	3009	1.5		
	60	140	15	3444	1.1		
	45	180	20	3791	0.8		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s		
1.1	11.6	599	121	9838	1.5	PU090 - 110	90S4
	9.6	686	145.2	10320	1.1		
	7.2	828	193.6	10320	0.8		
	9.3	621	300	10320	1.9	MMM050/110	8022
	7	810	400	10320	1.4		
	5.6	938	500	10320	1.1		
	11.3	586	80	12989	1.4	MMM130	90L6
	9	689	100	13500	1.1		
	17.5	408	80	11210	2.1	MMM130	90S4
	14	480	100	12076	1.5		
	12.4	585	73	12575	3	PU090 - 130	90L6
	9.3	746	96.8	13500	2.2		
	7.4	890	121	13500	1.7		
	6.2	1000	145.2	13500	1.4		
	4.6	1220	193.6	13500	1		
	19.3	398	73	10853	3.5	PU090 - MMM130	90S4
	14.5	508	96.8	11945	2.6		
	11.6	608	121	12868	2		
	9.6	686	145.2	13500	1.6		
	7.2	843	193.6	13500	1.2		
	5.8	962	242	13500	0.9		
	4.7	1274	300	13500	1.3	MMM063/130	90S4
	3.5	1621	400	13500	1		
	2.8	1913	500	13500	0.8		
1.5	373.3	34	7.5	1433	1.5	050	80C2
	280	45	10	1577	1.2		
	186.7	65	15	1805	0.9		
	186.7	68	7.5	2359	1.9	MMM063	90L4
	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	MMM063	90S2
	280	45	10	2061	2.1		
	186.7	66	15	2359	1.6		
	140	86	20	2597	1.2		
	112	105	25	2797	0.9		
	93.3	120	30	2973	1		
	120	103	7.5	3227	2	MMM 075	100L6
	90	134	10	3551	1.7		
	60	193	15	4065	1.2		
	56	187	50	4160	0.8	MMM075	90S2
	46.7	215	60	4421	0.7		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	F_{r2} [N]	f_s		
1.5	140	89	10	3065	2.2	MMM 075	90L4
	93.3	129	15	3509	1.5		
	70	166	20	3862	1.3		
	56	202	25	4160	1		
	46.7	233	30	4421	1		
	280	45	10	2433	3.1	MMM075	90S2
	186.7	66	15	2785	2.2		
	140	86	20	3065	1.8		
	112	105	25	3302	1.4		
	93.3	121	30	3509	1.4		
	70	156	40	3862	1		
	90	137	10	3929	2.7	MMM090	100L6
	60	198	15	4498	2.1		
	45	258	20	4951	1.5		
	36	310	25	5333	1.2		
	30	358	30	5667	1.3		
	70	170	20	4273	2.1	MMM090	90L4
	56	207	25	4603	1.6		
	46.7	239	30	4891	1.7		
	35	303	40	5383	1.2		
	28	363	50	5799	0.9		
	23.3	418	60	6163	0.8		
	56	197	50	4603	1.4	MMM090	90S2
	46.7	227	60	4891	1.1		
	45	264	20	6256	2.7	MMM 110	100L6
	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		
	35	315	40	6803	2.2	MMM110	90L4
	28	379	50	7320	1.7		
	23.3	443	60	7787	1.4		
	17.5	548	80	8571	0.9		
	46.7	236	60	6181	2	MMM110	90S2
	35	299	80	6803	1.3		
	28	358	100	7328	1		
	19.3	535	73	8298	1.9	PU090 - MMM110	90L4
	14.5	693	96.8	9133	1.3		
	11.6	817	121	9838	1.1		
	9.6	936	145.2	10320	0.8		
	9.3	847	300	10320	1.4	MMM050/110	90S2
	7	1105	400	10320	1		
	5.6	1279	500	10320	0.8		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	Fr_2 [N]	f_s		
1.5	22.5	471	40	10309	2.3	MMM130	100L6
	18	565	50	11105	1.8		
	15	659	60	11801	1.4		
	11.3	799	80	12989	1.1		
	17.5	557	80	11210	1.5	MMM130	90L4
	14	655	100	12076	1.1		
	19.3	542	73	10853	2.6	PU090 - MMM130	90L4
	14.5	693	96.8	11945	1.9		
	11.6	830	121	12868	1.5		
	9.6	936	145.2	13500	1.1		
	7.2	1149	194	13500	0.8		
	9.3	878	300	13500	1.9	MMM063/130	90S2
	7	1105	400	13500	1.4		
	5.6	1305	500	13500	1.1		
	4.7	1737	300	13500	1	MMM063/130	90L4
	3.5	2210	400	13500	0.7		
2.2	373.3	51	7.5	1873	1.8	MMM063	90L2
	280	66	10	2061	1.5		
	186.7	97	15	2359	1.1		
	186.7	99	7.5	2785	1.8	MMM075	100LA4
	140	131	10	3065	1.5		
	93.3	189	15	3509	1		
	373.3	50	7.5	2210	2.5	MMM075	90L2
	280	66	10	2433	2.1		
	186.7	97	15	2785	1.5		
	140	126	20	3065	1.3		
	112	154	25	3302	1		
	93.3	178	30	3509	0.9		
	186.7	100	7.5	3081	2.9	MMM090	100LA4
	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		
	120	154	7.5	3570	2.2	MMM090	112M6
	90	201	10	3929	1.8		
	60	291	15	4498	1.4		
	45	378	20	4951	1		
	140	129	20	3391	2	MMM090	90L2
	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		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	Fr_2 [N]	f_s		
2.2	70	255	20	5399	2.5	MMM110	100LA4
	56	311	25	5816	2.2		
	46.7	355	30	6181	2		
	35	462	40	6803	1.5		
	28	555	50	7328	1.2		
	23.3	649	60	7787	1		
	90	203	10	4965	3.5	MMM110	112M6
	60	294	15	5684	2.6		
	45	388	20	6256	1.9		
	36	473	25	6739	1.6		
	30	532	30	7161	1.6		
	112	161	25	4616	3.1	MMM110	90L2
	93.3	187	30	4905	3		
	70	243	40	5399	2.1		
	56	296	50	5816	1.7		
	46.7	346	60	6181	1.4		
	38.6	398	73	6586	2.1	PU090 - MMM110	90L2
	28.9	516	96.8	7249	1.5		
	23.1	617	121	7809	1.2		
	35	468	40	8897	2.2	MMM130	100LA4
	28	565	50	9584	1.7		
	23.3	658	60	10185	1.4		
	17.5	816	80	11210	1		
	36	473	25	8814	2.2	MMM130	112M6
	30	539	30	9366	2.1		
	22.5	691	40	10309	1.6		
	18	829	50	11105	1.2		
	15	966	60	11801	1		
	35	444	80	8897	1.3	MMM130	90L2
	28	525	100	9584	1		
	38.6	409	73	8614	2.9	PU090 - MMM130	90L2
	28.9	545	96.8	9481	2		
	23.1	654	121	10213	1.6		
	19.3	752	145.2	10853	1.3		
3.0	373.3	68	7.5	2210	1.9	MMM075	100L2
	280	90	10	2433	1.6		
	186.7	135	7.5	2785	1.4	MMM075	100LB4
	140	178	10	3065	1.1		
	93.3	258	15	3509	0.8		
	373.3	70	7.5	2446	3	MMM090	100L2
	280	92	10	2692	2.6		
	186.7	137	7.5	3081	2.1	MMM090	100LB4
	140	180	10	3391	1.7		
	93.3	261	15	3882	1.4		

PERFORMANCE PARAMETER

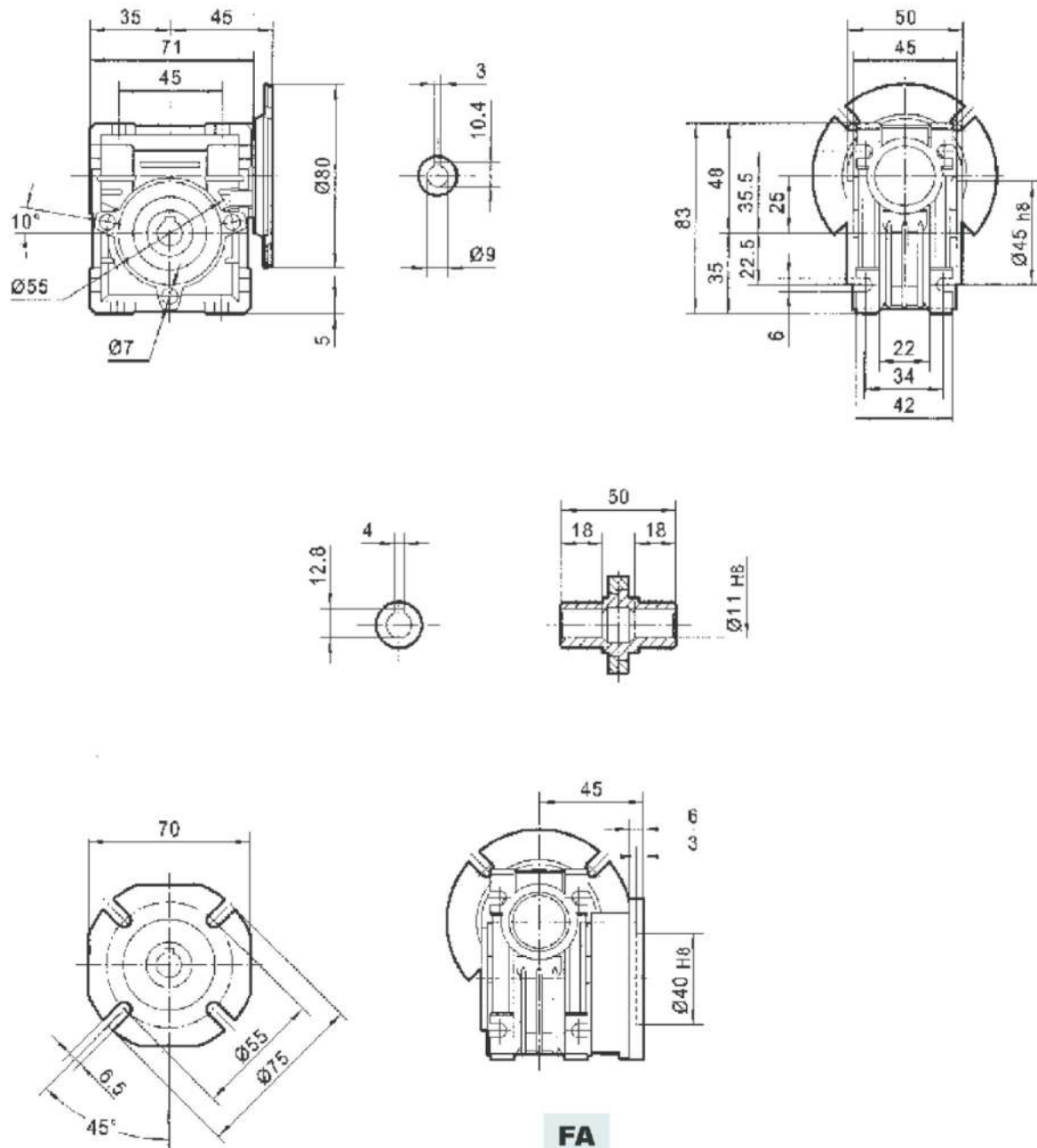
P _{1n} [kW]	n ₂ [1/min]	M _{2n} [Nm]	i	Fr ₂ [N]	f _s		
3.0	70	340	20	4273	1	MMM090	100LB4
	56	414	25	4603	0.8		
	46.7	479	30	4891	0.9		
	93.3	264	15	4905	2.5	MMM110	100LB4
	70	348	20	5399	1.9		
	56	425	25	5816	1.6		
	46.7	485	30	6181	1.5		
	35	630	40	6803	1.1		
	28	757	50	7328	0.9		
	120	210	7.5	4511	3.1	MMM110	132S6
	90	277	10	4965	2.5		
	60	401	15	5684	1.9		
	45	528	20	6256	1.4		
	56	430	25	7607	2.2	MMM130	100LB4
	46.7	491	30	8082	2.1		
	35	638	40	8897	1.6		
	28	767	50	9584	1.3		
	23.3	898	60	10185	1		
	17.5	1113	80	11210	0.8		
	90	277	10	6494	3.4	MMM130	132S6
	60	406	15	7434	2.6		
	45	528	20	8182	1.9		
	36	645	25	8814	1.6		
	30	735	30	9366	1.6		
	22.5	942	40	10309	1.2		
4.0	373.3	91	7.5	2210	1.4	MMM075	112M2
	280	120	10	2433	1.2		
	186.7	180	7.5	2785	1	MMM075	112M4
	140	237	10	3065	0.8		
	373.3	93	7.5	2446	2.2	MMM090	112M2
	280	123	10	2692	1.9		
	186.7	182	7.5	3081	1.6	MMM090	112M4
	140	240	10	3391	1.3		
	93.3	348	15	3882	1		
	70	453	20	4273	0.8		
	140	240	10	4285	2.5	MMM110	112M4
	93.3	352	15	4905	1.9		
	70	464	20	5399	1.4		
	56	566	25	5816	1.2		
	46.7	646	30	6181	1.1		
	120	280	7.5	4511	2.3	MMM110	132MA6
	90	369	10	4965	1.9		
	60	353	15	5684	1.4		

PERFORMANCE PARAMETER

P_{1n} [kW]	n_2 [1/min]	M_{2n} [Nm]	i	Fr_2 [N]	f_s		
4.0	56	573	25	7607	1.6	MMM130	112M4
	46.7	654	30	8084	1.6		
	35	851	40	8897	1.2		
	28	1023	50	9584	1		
	23.3	1197	60	10185	0.8		
	120	283	7.5	5901	3.1	MMM130	132MA6
	90	369	10	6494	2.6		
	60	541	15	7434	2		
	45	705	20	8182	1.5		
	36	860	25	8814	1.2		
5.5	186.7	250	7.5	3893	2.2	MMM110	132S4
	140	330	10	4285	1.8		
	93.3	484	15	4905	1.4		
	70	638	20	5399	1		
	140	334	10	5605	2.5	MMM130	132S4
	93.3	490	15	6416	1.9		
	70	638	20	7062	1.4		
	56	788	25	7607	1.2		
	46.7	900	30	8084	1.2		
	35	1171	40	8897	0.9		
7.5	186.7	341	7.5	3893	1.6	MMM110	132M4
	140	450	10	4285	1.3		
	93.3	660	15	4905	1		
	186.7	345	7.5	5092	2.1	MMM130	132M4
	140	455	10	5605	1.8		
	93.3	668	15	6416	1.4		
	70	870	20	7062	1		
	56	1074	25	7607	0.9		
	46.7	1227	30	8084	0.8		
	35	1596	40	8897	0.7		

OUTLINE DIMENSION SHEET

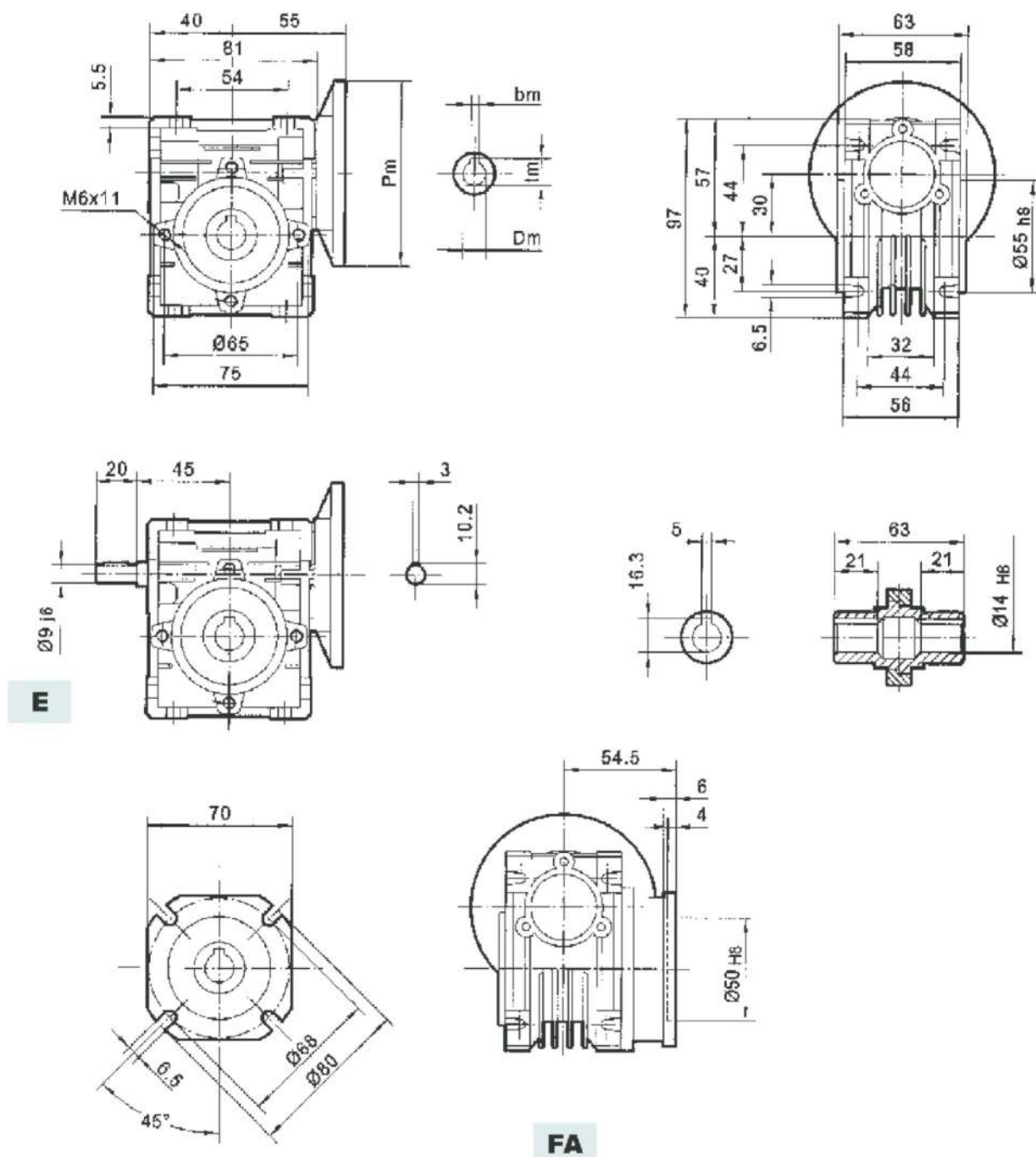
MMM - WORM GEAR UNITS - MMM025



Weight without motor $\approx$ 0.7 kg

OUTLINE DIMENSION SHEET

MMM 030

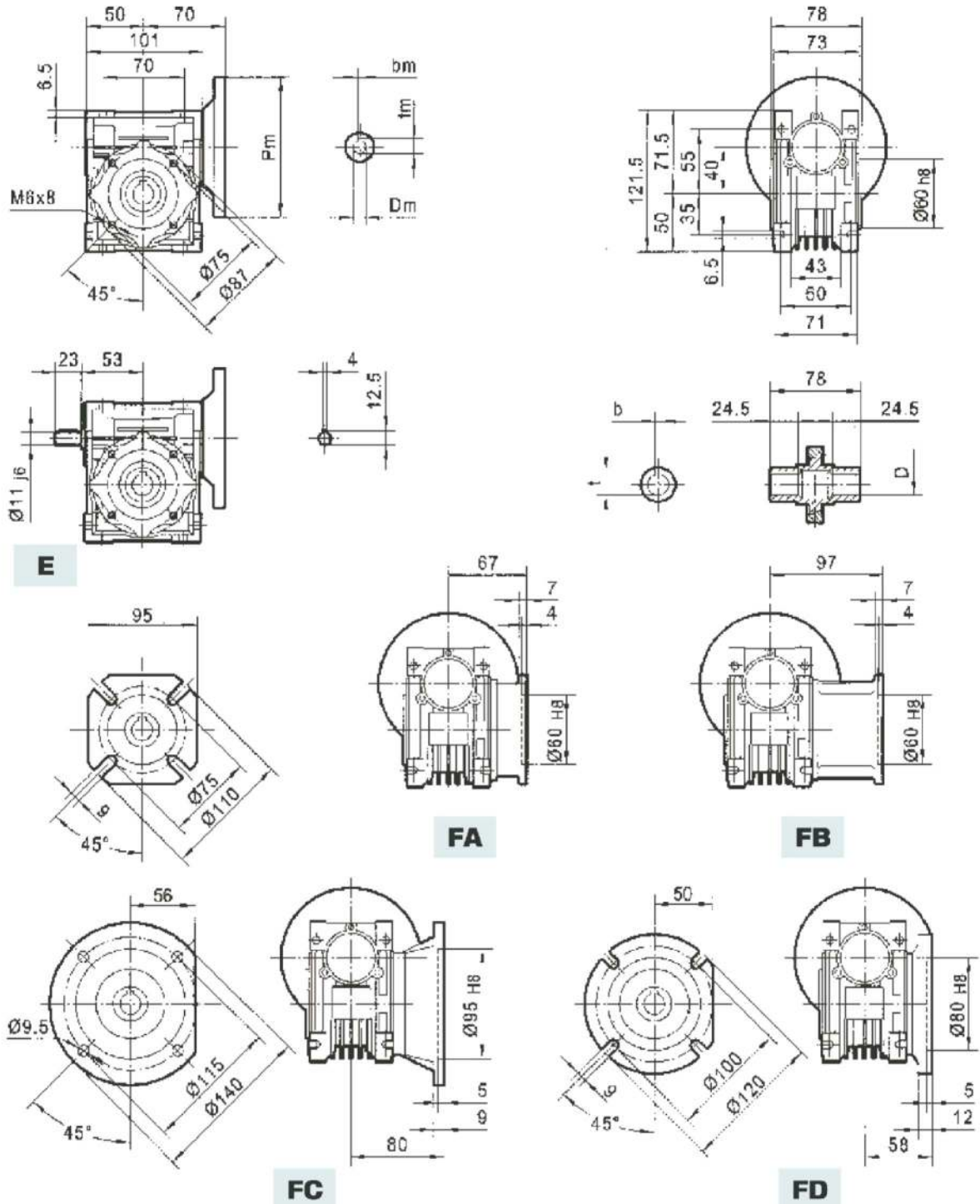


Motor Frame	P _m	D _m E8	b _m	t _m
63B5	140	11	4	12.8
56B5	120	9	3	10.4
63B14	90	11	4	12.8
56B14	80	9	3	10.4

Weight without motor ≈ 1.2 kg

OUTLINE DIMENSION SHEET

MMM040

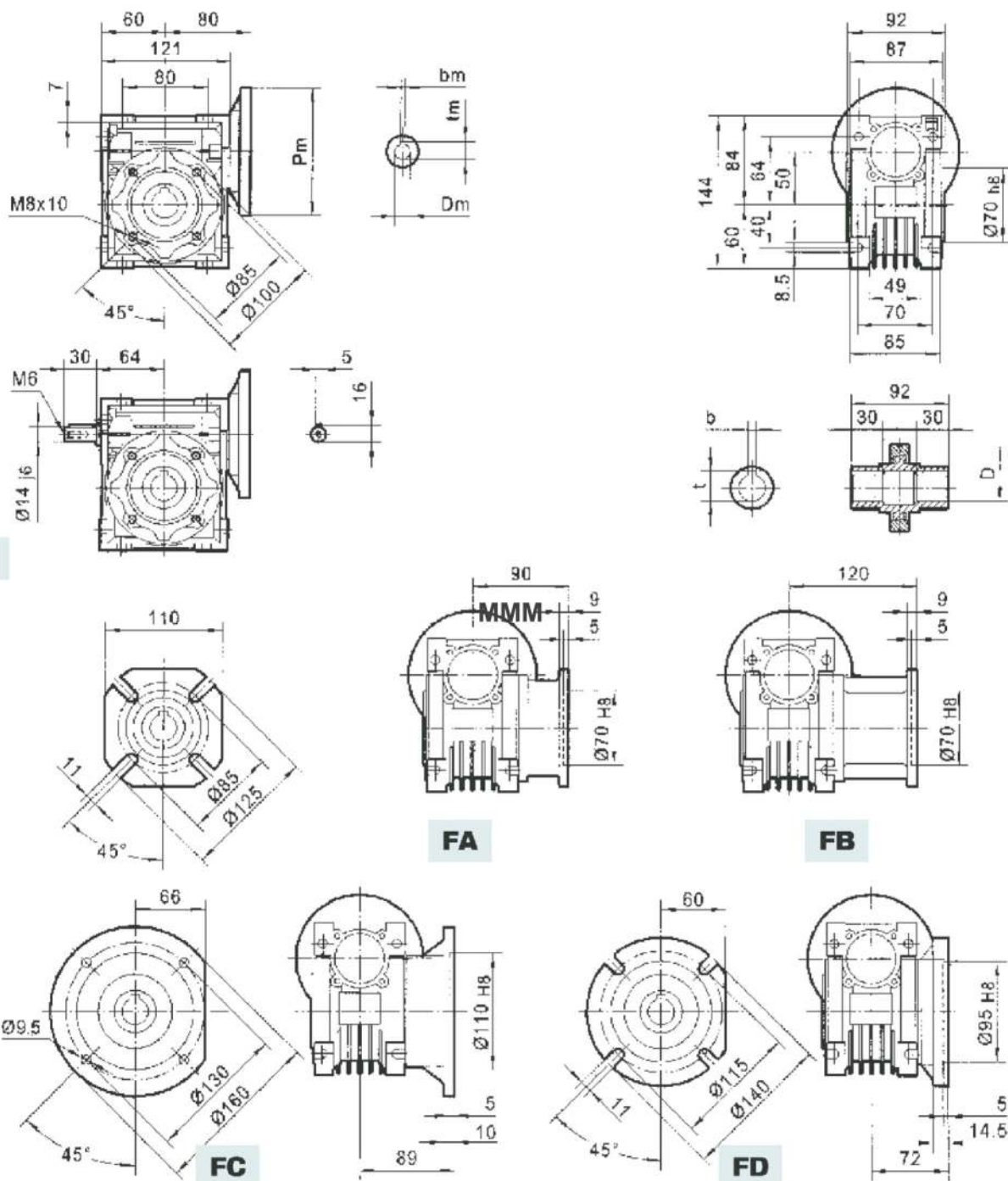


Motor Frame	P _m	D _m E8	b _m	t _m	D H8	b	t
71B5	160	14	5	16.3	18	6	20.8
63B5	140	11	4	12.8	19*	6*	21.8*
56B5	120	9	3	10.4	*Only on request		
71B14	105	14	5	16.3			
63B14	90	11	4	12.8			

Weight without motor ≈ 2.3 kg

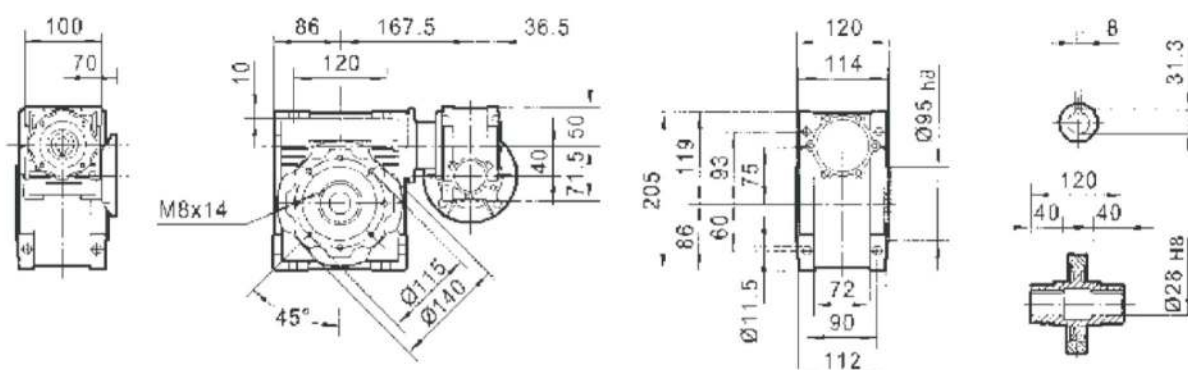
OUTLINE DIMENSION SHEET

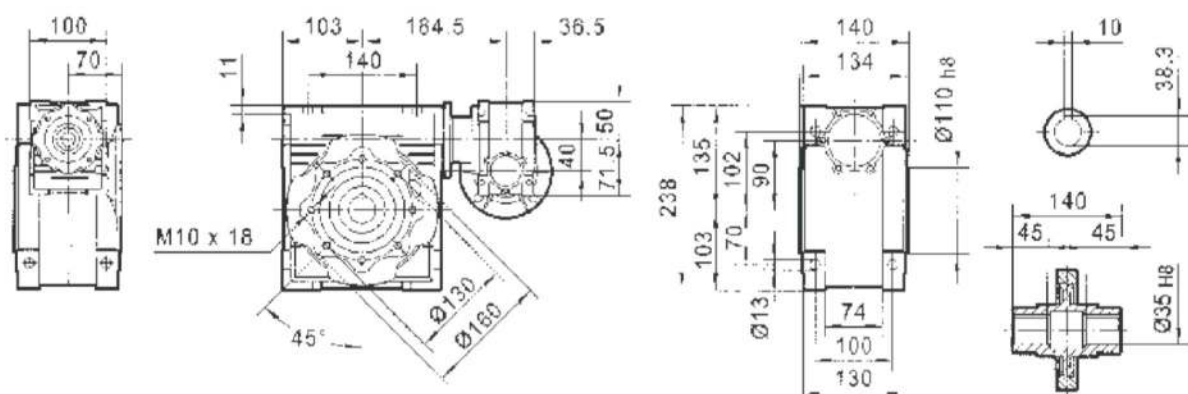
MMM050

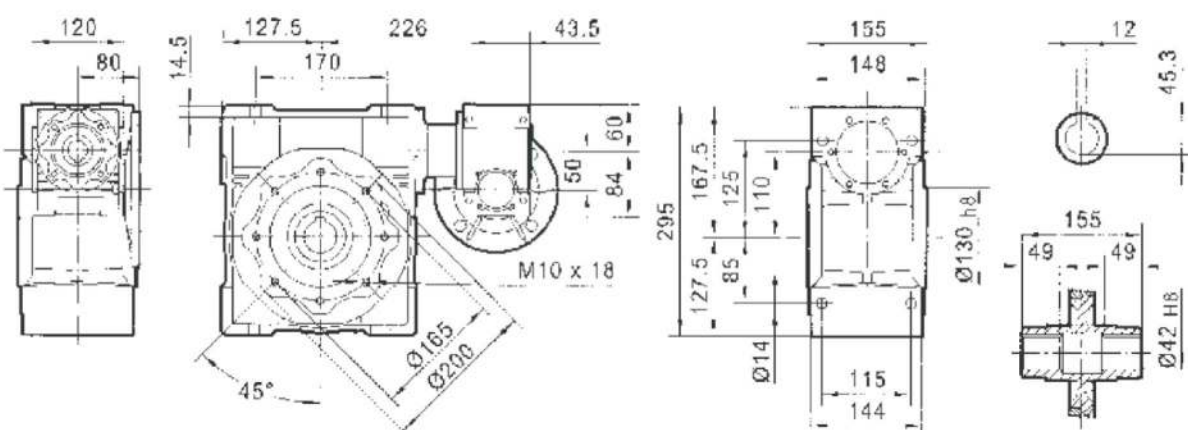


Motor Frame	P _m	D _m E8	b _m	t _m	D H8	b	t
80B5	200	19	6	21.8	25	8	28.3
71B5	160	14	5	16.3	24*	8*	27.3*
63B14	140	11	4	12.8	*Only on request		
80B14	120	19	6	21.8			
71B14	105	14	5	16.3			

Weight without motor ≈ 3.5 kg

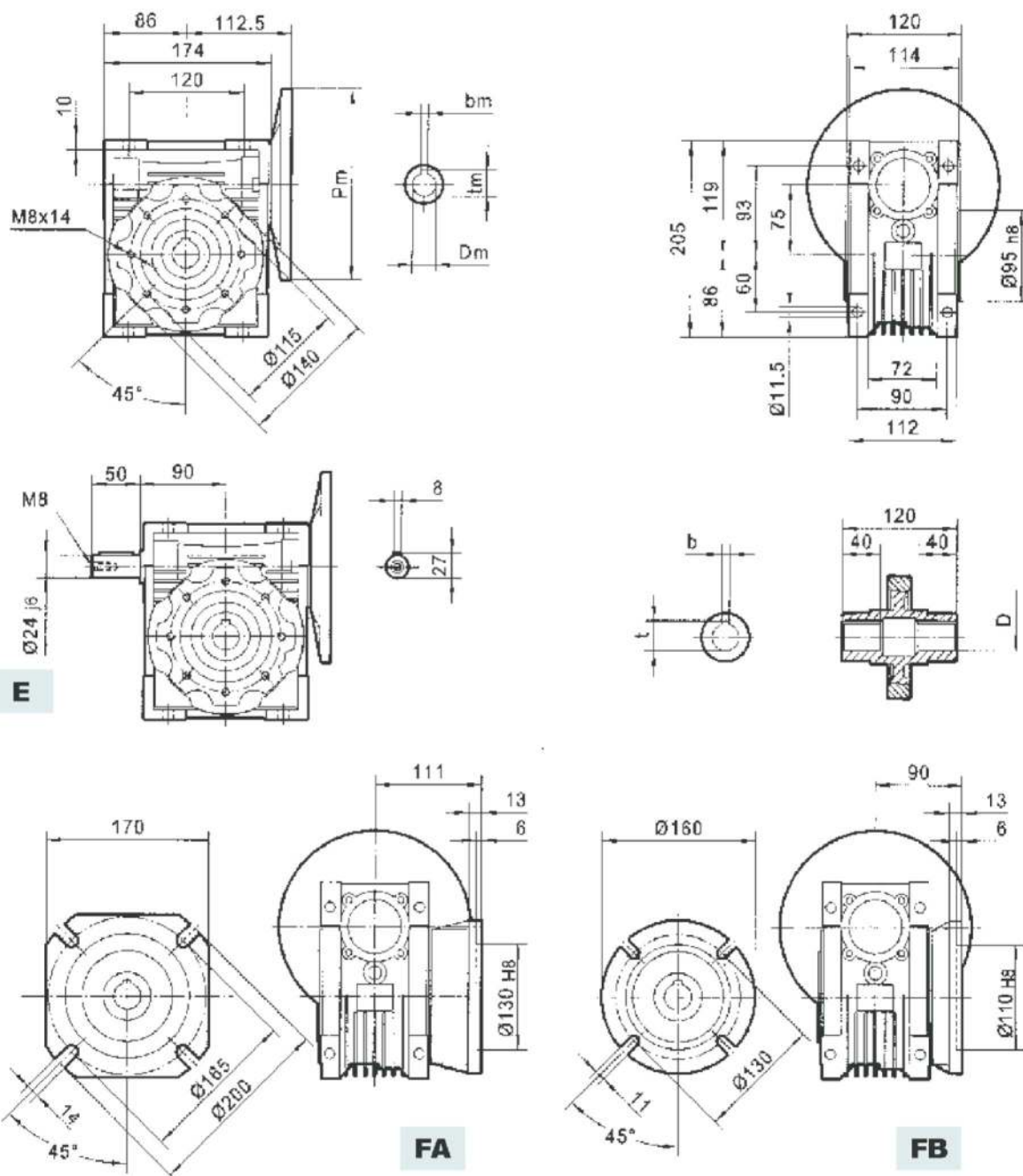






OUTLINE DIMENSION SHEET

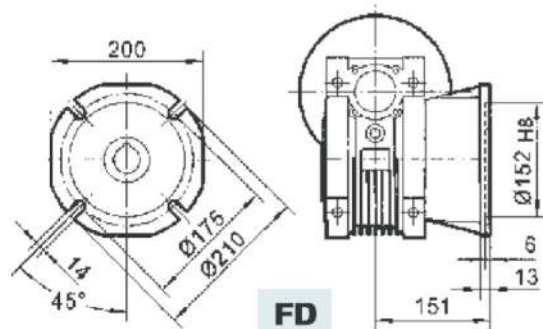
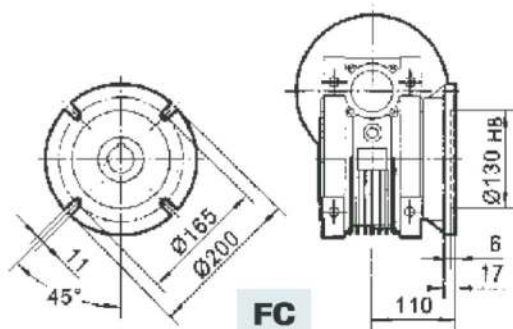
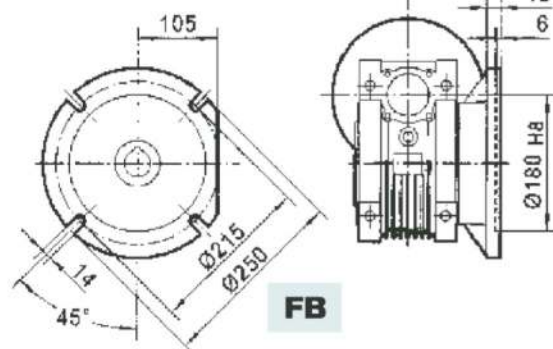
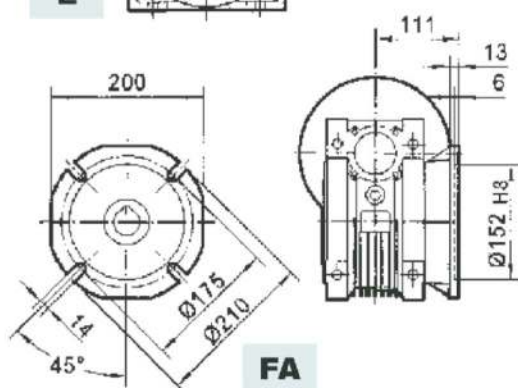
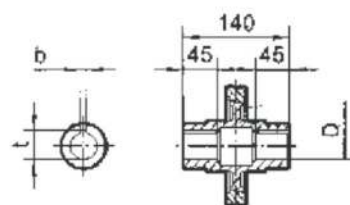
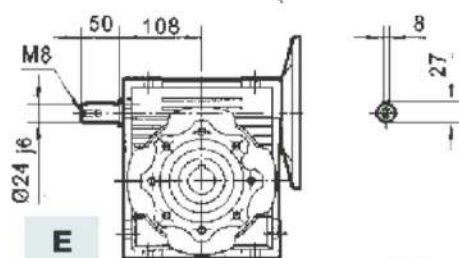
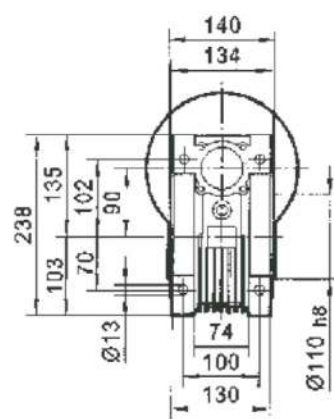
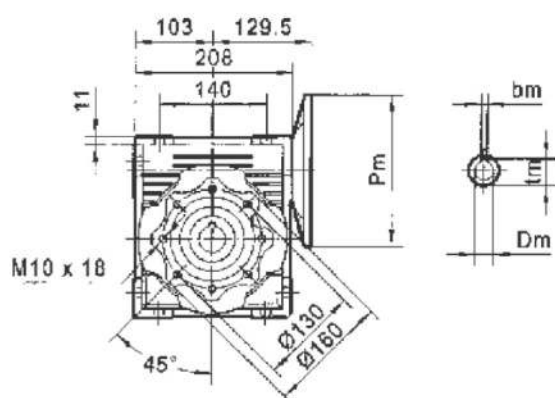
MMM075



Motor Frame	P _m	D _m E8	b _m	t _m	D HB	b	t
100/112B5	250	28	8	31.3	28	8	31.3
90B5	200	24	8	27.3	35*	10*	38.3*
80B5	200	19	6	21.8	*Only on request		
71B5	160	14	5	16.3			
100/112B14	160	28	8	31.3			
90B14	140	24	8	27.3			
80B14	120	19	6	21.8			

Weight without motor ≈ 9 kg

OUTLINE DIMENSION SHEET

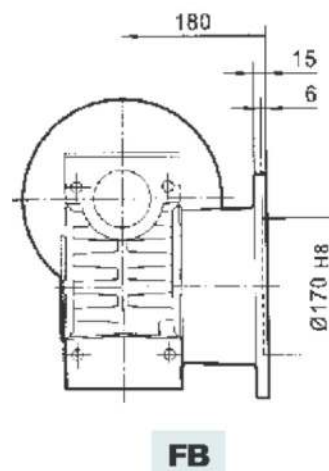
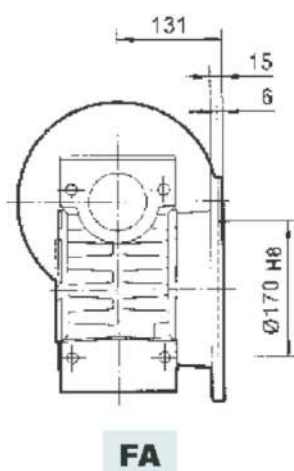
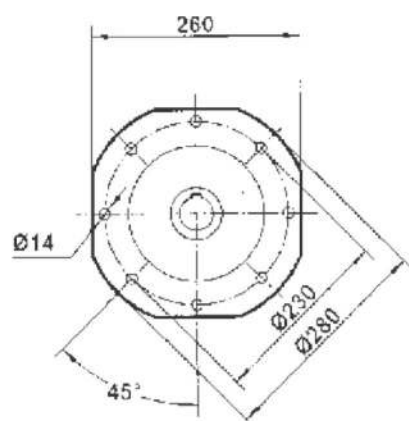
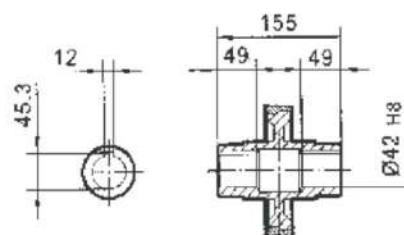
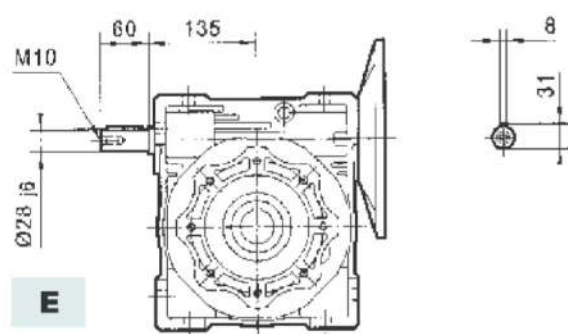
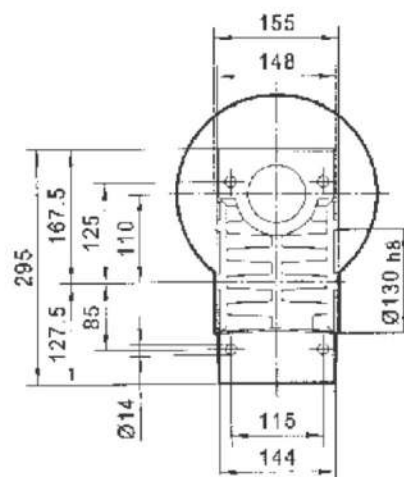
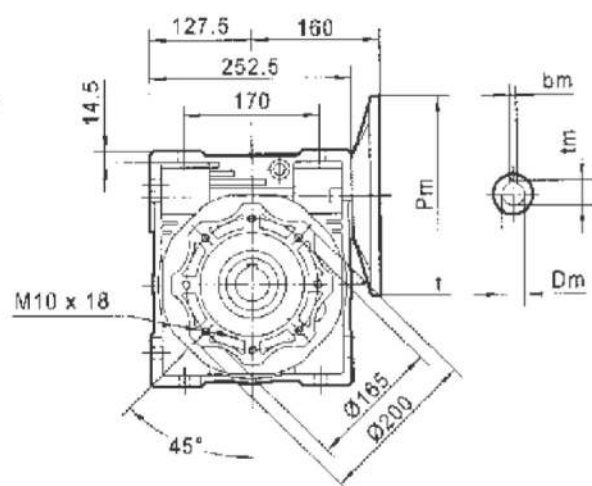
MMM090

Motor Frame	P _m	D _m E8	b _m	t _m	D HB	b	t
100/112B5	250	28	8	31.3	35	10	38.3
90B5	200	24	8	27.3	38*	10*	41.3*
80B5	200	19	6	21.8	*Only on request		
100/112B14	160	28	8	31.3			
90B14	140	24	8	27.3			
80B14	120	19	6	21.8			

Weight without motor ≈ 13 kg

OUTLINE DIMENSION SHEET

MMM110

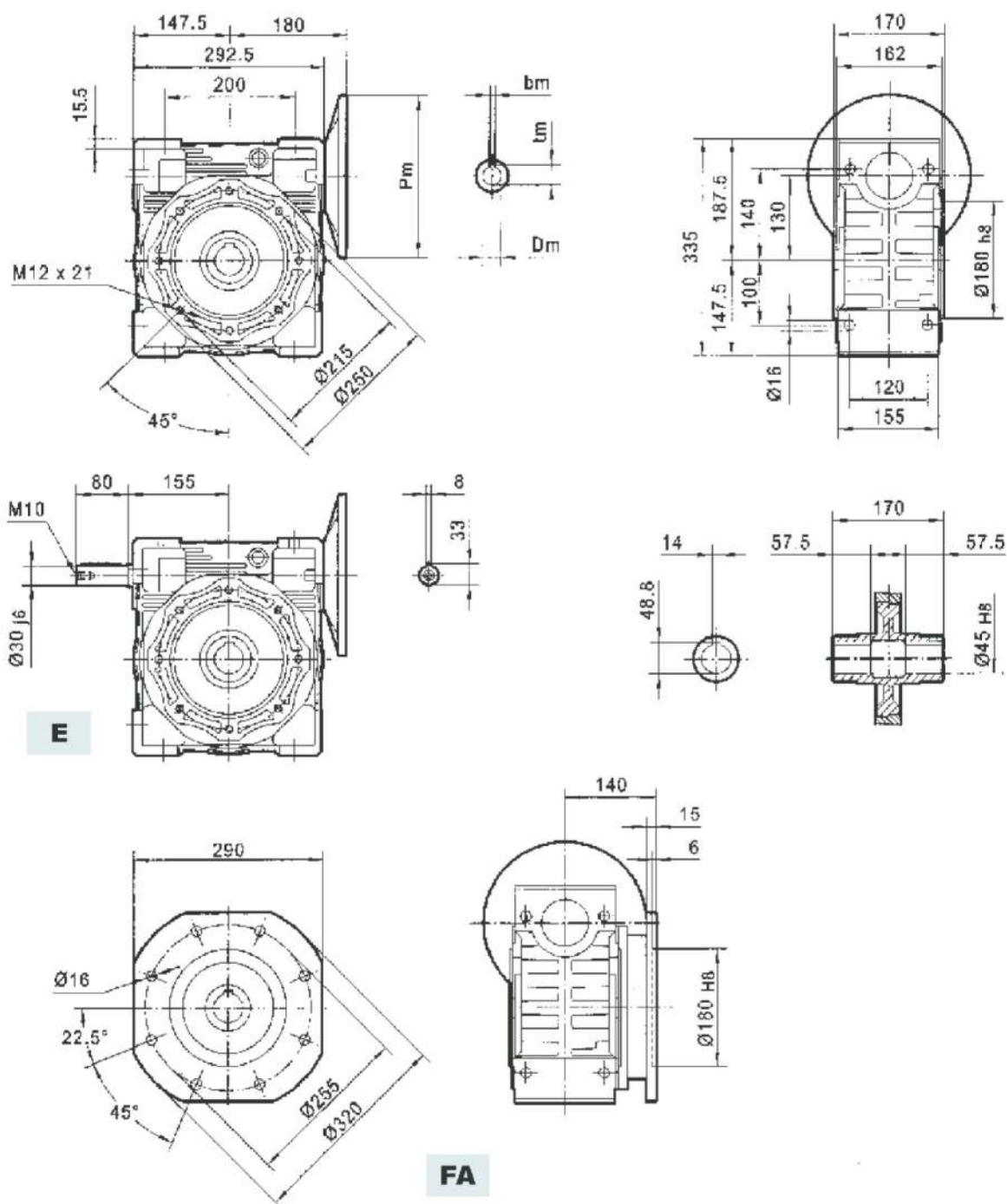


Motor Frame	P _m	D _m E8	b _m	t _m
132B5	300	38	10	41.3
112B5	250	28	8	31.3
100B5	250	28	8	31.3
90B5	200	24	8	27.3
80B5	200	19	6	21.8

Weight without motor ≈ 35 kg

OUTLINE DIMENSION SHEET

MMM130

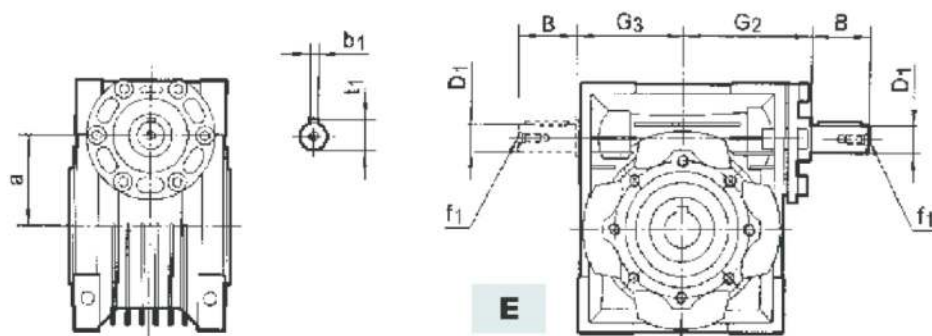


Motor Frame	P_m	$D_m \text{ E8}$	b_m	t_m
132B5	300	38	10	41.3
112B5	250	28	8	31.3
100B5	250	28	8	31.3
90B5	200	24	8	27.3

Weight without motor $\approx 48 \text{ kg}$

OUTLINE DIMENSION SHEET

WORM GEAR UNIT with Solid Input / Hollow Output Shaft



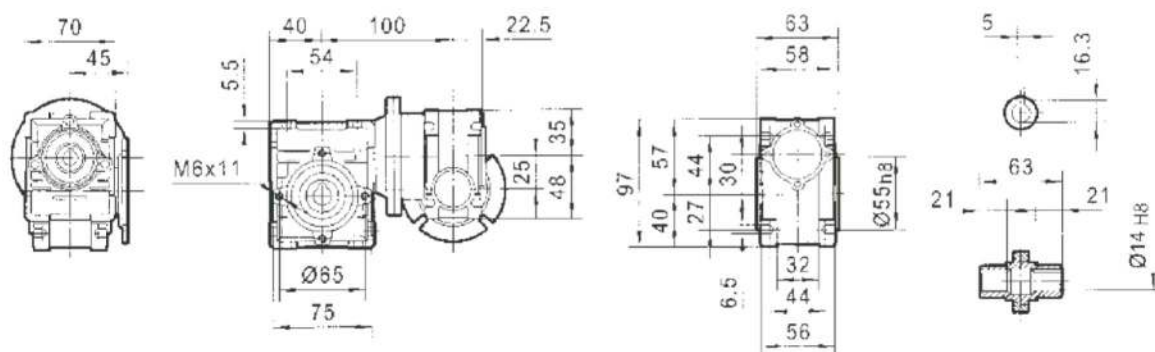
MMM	030	040	050	063	075	090	110	130
B	20	23	30	40	50	50	60	80
D_{1j}⁶	9	11	14	19	24	24	28	30
G₂	51	60	74	90	105	125	142	162
G₃	45	53	64	75	90	108	135	155
a	30	40	50	63	75	90	110	130
b₁	3	4	5	6	8	8	8	8
f₁	-	-	M6	M6	M8	M8	M10	M10
t₁	10.2	12.5	16	21.5	27	27	31	33

OUTLINE DIMENSION SHEET

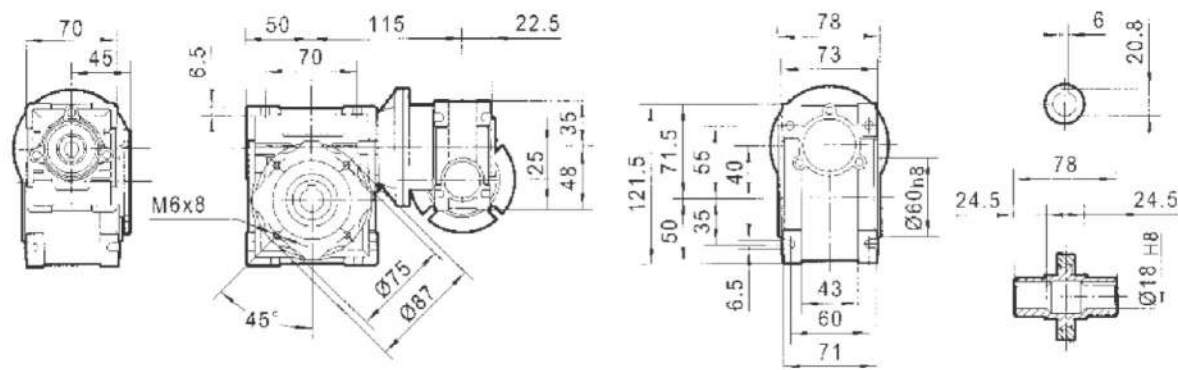
Double Reduction Worm Gear Units

- For the dimensions of the output flanges, please refer to pages 25 - 34
- For the dimensions of the hollow shafts, please refer to pages 25 - 34
- For the dimensions of the double extension worm shafts, please refer to page 35

MMM - 025 / 030

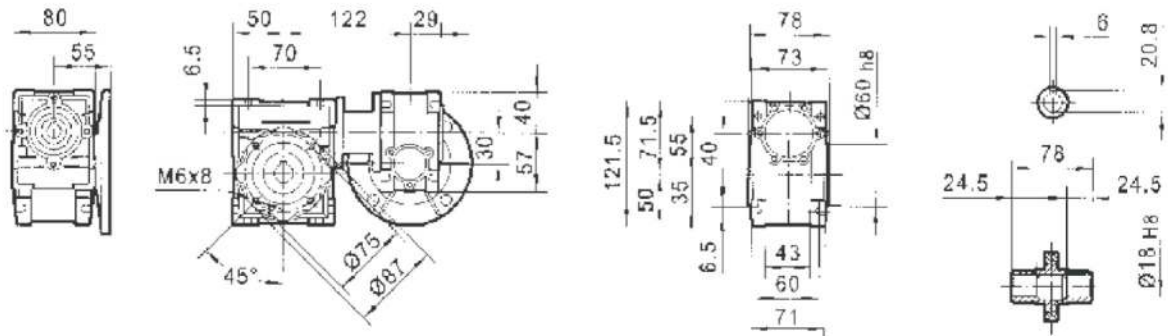


MMM - 025 / 040

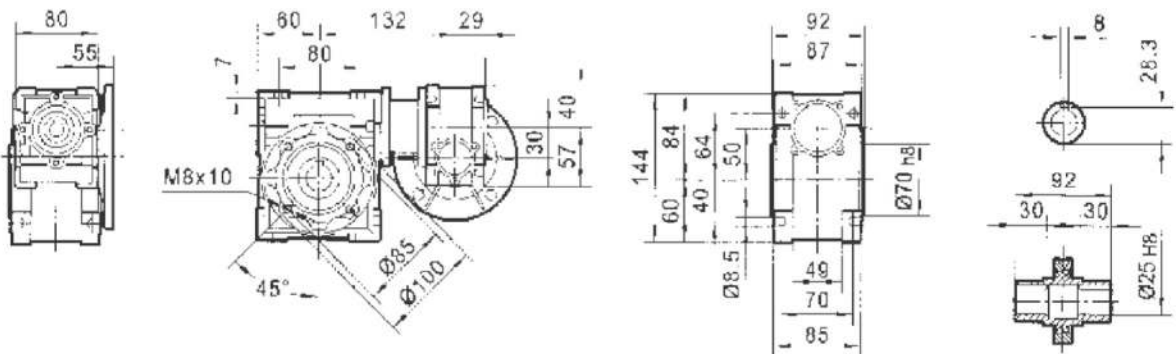


OUTLINE DIMENSION SHEET

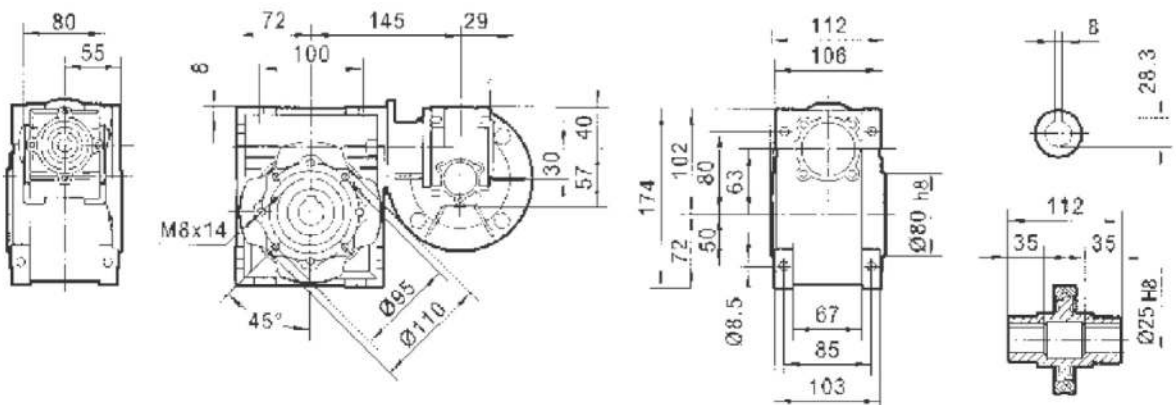
- 030 / 040



- 030 / 050

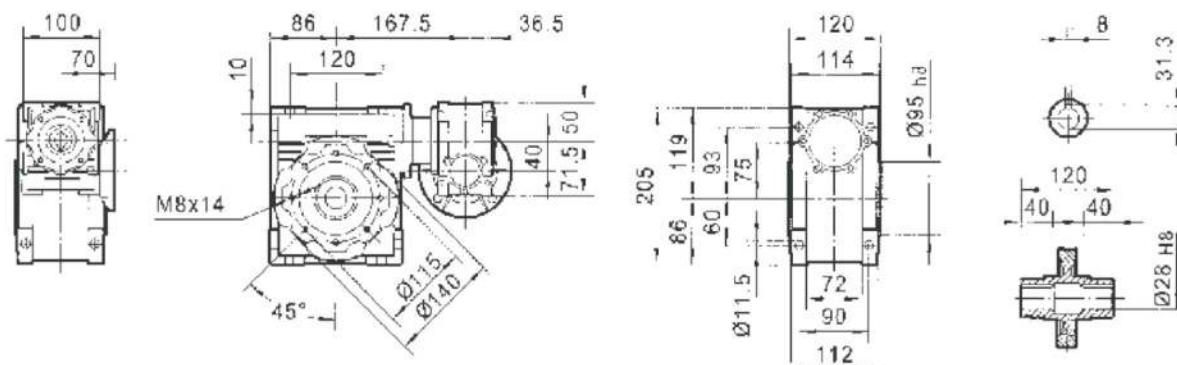


- 030 / 063

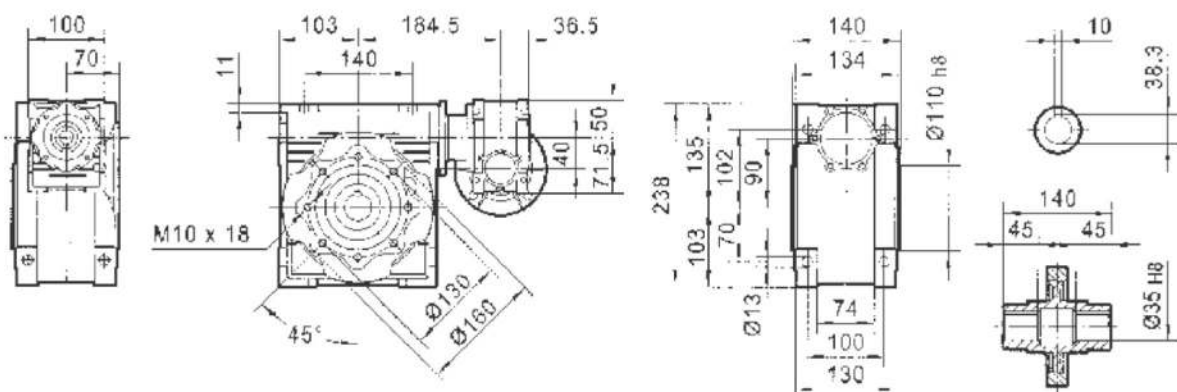


OUTLINE DIMENSION SHEET

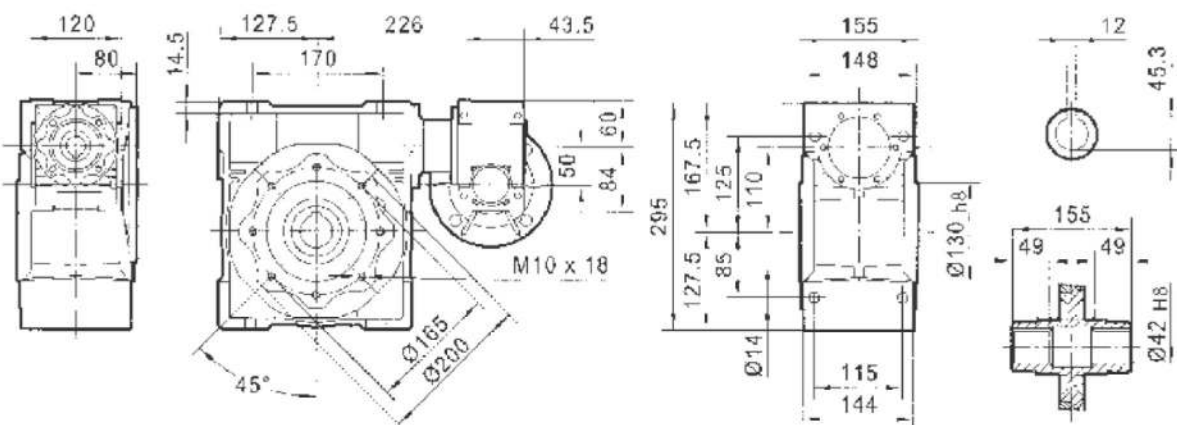
MMM - 040 / 075



MMM - 040 / 090

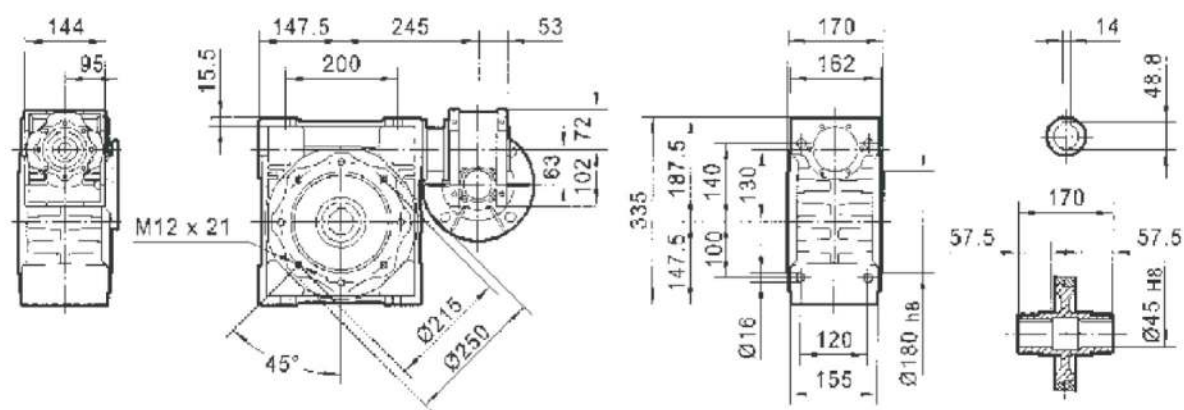


MMM - 050 / 110

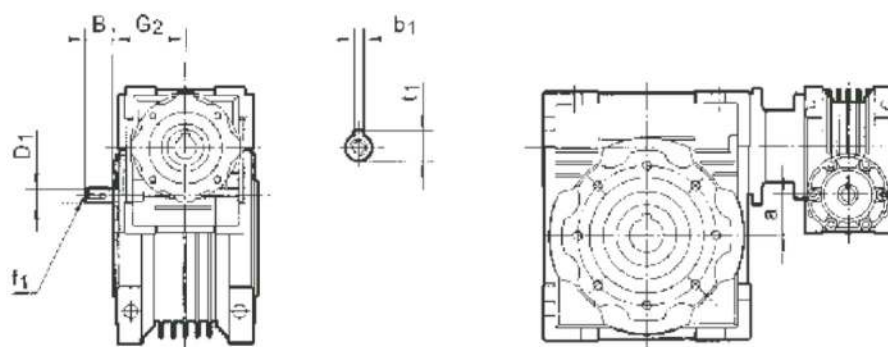


OUTLINE DIMENSION SHEET

MMM - 063 / 130



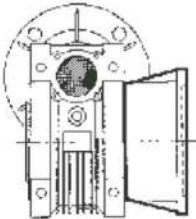
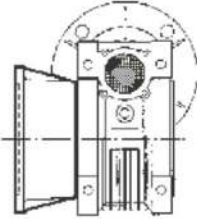
MMM + MMM DOUBLE REDUCTION WORM GEAR UNIT WITH SOLID INPUT SHAFT



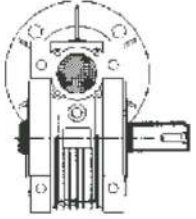
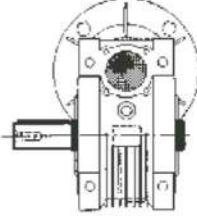
	030 / 040	030 / 050	030 / 063	040 / 075	040 / 090	050 / 110	063 / 130
B	20	20	20	23	23	30	40
D ₁ ⁶	9	9	9	11	11	14	19
G ₂	51	51	51	60	60	74	90
a	10	20	33	35	50	60	67
b ₁	3	3	3	4	4	5	6
f ₁	-	-	-	-	-	M6	M6
t ₁	10.2	10.2	10.2	12.5	12.5	16	21.5

ACCESSORIES

POSITION DIAGRAM FOR OUTPUT FLANGE

FA 1, FB 1, FC 1, FD 1, FE 1	FA 2, FB 2, FC 2, FD 2, FE 2
	

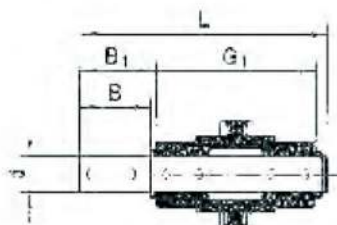
POSITION DIAGRAM FOR SINGLE OUTPUT SHAFT

AS 1	AS 2
	

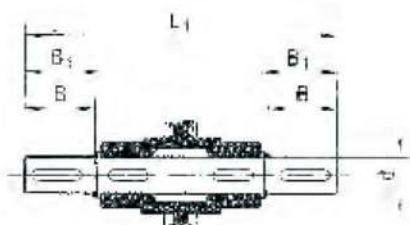
Unless specified otherwise, the reduction unit is supplied with the flange in pos. F..1 referred to position B3.

ACCESSORIES

OUTPUT SHAFTS



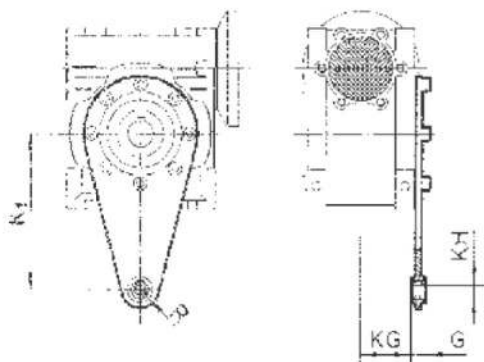
Single Output Shaft



Double Output Shaft

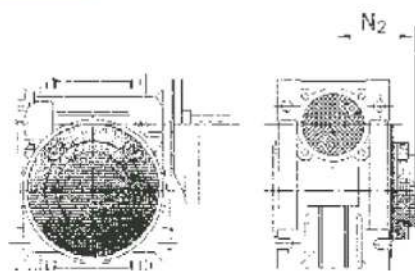
	d_{sh}	B	B1	G ₁	L	L ₁	f	b ₁	t ₁
MMM025	11 g6	23	25.5	50	51	101	...	4	12.5
	9*	25*	30*	50	85.5*	101	...	3*	10.2*
MMM030	14	30	32.5	63	102	128	M6	5	16
MMM040	18	40	43	78	128	164	M6	6	20.5
MMM050	25	50	53.5	92	153	199	M10	8	28
MMM063	25	50	53.5	112	173	219	M10	8	28
MMM075	28	60	63.5	120	192	247	M10	8	31
MMM090	35	80	84.5	140	234	309	M12	10	38
MMM110	42	80	84.5	155	249	324	M16	12	45
MMM130	45	80	85	170	265	340	M16	14	48.5

TORQUE ARM



	K1	G	KG	KH	R
MMM025	70	14	17.5	8	15
MMM030	85	14	24	8	15
MMM040	100	14	31.5	10	18
MMM050	100	14	38.5	10	18
MMM063	150	14	49	10	18
MMM075	200	25	47.5	20	30
MMM090	200	25	57.5	20	30
MMM110	250	30	62	25	35
MMM130	250	30	69	25	35

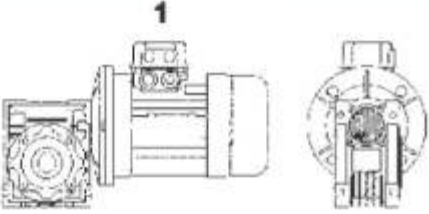
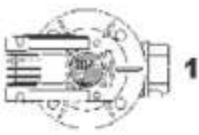
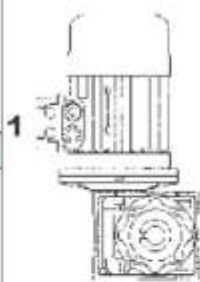
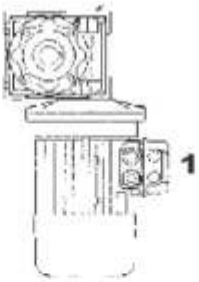
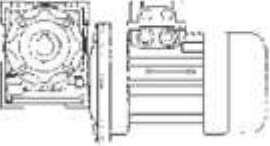
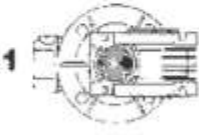
COVER



	N2		N2
MMM030	47	075	79
MMM040	55	090	94
MMM050	63	110	102
MMM063	73	130	117

INSTALLATION

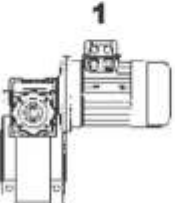
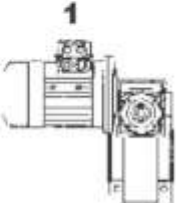
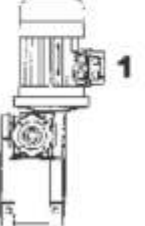
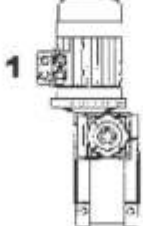
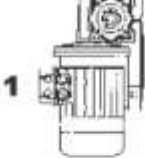
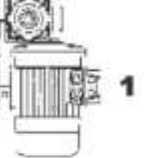
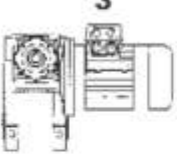
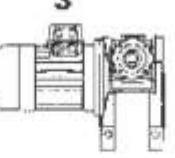
MMM ...OR MMM INSTALLATION POSITIONS DIAGRAM

MMM...U - B3	B6	V5	V6
 1	 1	 1	 1
B8	B7		
 3	 1		

"U" version is related to sizes from 025 to 075 and ALW030- 063. For these sizes it is not necessary to specify mounting position.

- For vertical positions, please refer to the table on page 48.
- Unless specified otherwise, the standard positions are **B3**.
- For positions not envisaged, it is necessary to call our Technical Service.

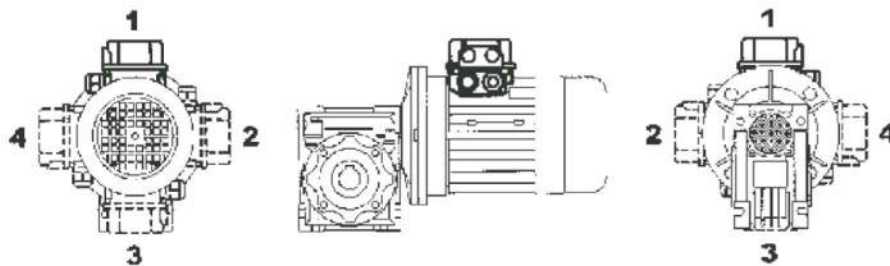
MMM..-MMM.. / MMM ... MMM...

AS1	AS2	VS1	VS2
 1	 1	 1	 1
PS1	PS2	BS1	BS2
 1	 1	 3	 3

The position of the 1st reducer with respect with to the 2nd gear reducer depends on the versions. Unless specified at the time of order, combination groups are supplied in version BS2. The specified mounting position refers to the 1st gear reducer, see page 57 for the possible mounting positions.

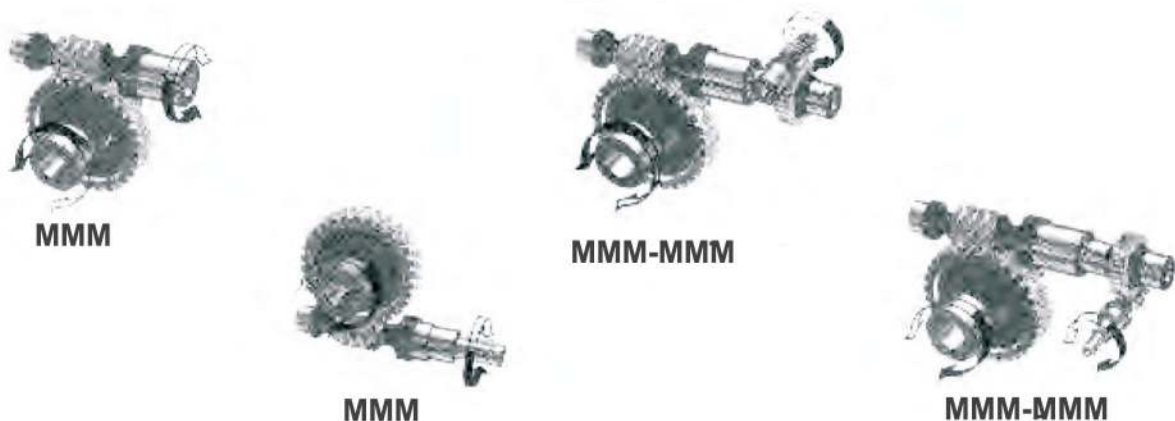
INSTALLATION

POSITION OF TERMINAL BOX



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

DIRECTION OF ROTATION



INSTALLATION

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 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 shaft, please grease the joint to avoid lock or oxidation.
8. Check the correct level of the lubricant through the indicator, if there 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 directly and the weight 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 $< -5^{\circ}\text{C}$ or $+40^{\circ}\text{C}$ call the Technical Service.

LUBRICANTS

LUBRICANT FILL QUANTITY

	B3	B6	B7	B8	V5	V6
MMM 025				0.023		
MMM 030				0.05		
MMM 040				0.1		
MMM 050				0.15		
MMM 063				0.3		
MMM 075				0.5		
MMM 190				1		
MMM 110	3	2.5	2.5	2.2	3	2.2
MMM 130	4.5	3.5	3.5	3.3	4.5	3.3
PU 063				0.05		
PU 071				0.07		
PU 080				0.15		
PU 090				0.16		
MMMV0.18		0.13			0.2	
MMMV0.37		0.15			0.25	
MMMV0.55		0.33			0.45	
MMMV0.75		0.33			0.45	
MMMV1.1		0.8			1	
MMMV1.5		0.8			1	
MMMV2.2		1.2			1.2	
MMMV3.0		1.2			1.2	
MMMV4.0		1.2			1.2	

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

In the case of temperature 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 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 TEVELA 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, otherwise the reduction units are supplied with the quantity of oil relating to pos. B3.

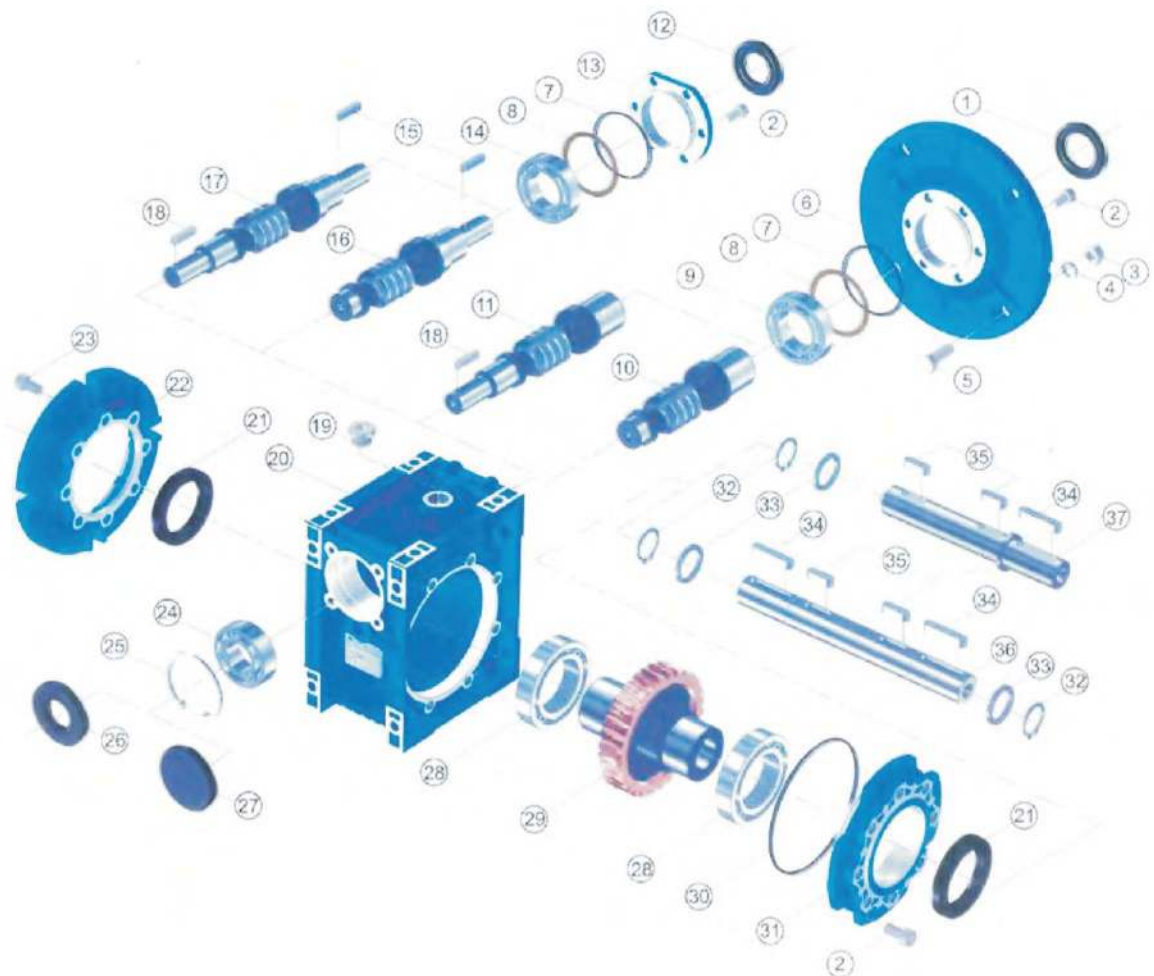
Only reduction units 110 and 130 are fitted with breather, level and oil drainage plugs. It is necessary, after installation, to replace the closed plug used for transportation with the breather plug supplied with the unit.

PC is supplied complete with life-long lubricant, synthetic oil (SHELL TEVELA OIL 320), and can therefore be mounted in all the positions.

1. Please refer to the sheet of performance parameter. ALM 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.

EXPLODED VIEW & NAME OF PARTS



1. Oil Seal
2. Inner Hex Screw
3. Nut
4. Spring Washer
5. Hex Screw
6. Input Flange
7. O-Ring
8. Adjust Spacer
9. Bearing
10. Hole Input Worm
11. Hole Input and Shaft Output Worm
12. Oil Seal
13. Input Cover
14. Bearing
15. Key
16. Shaft Input Worm
17. Shaft Input and Shaft Output Worm
18. Key
19. Oil Plug

20. Casing
21. Oil Seal
22. Output Flange
23. Inner Hex Screw
24. Bearing
25. Hole-Circlip
26. Oil Seal
27. Cover
28. Bearing
29. Worm Wheel
30. O-Ring
31. Output Cover
32. Shaft-Circlip
33. Spacer
34. Key
35. Key
36. Double Output Shaft
37. Single Output Shaft

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