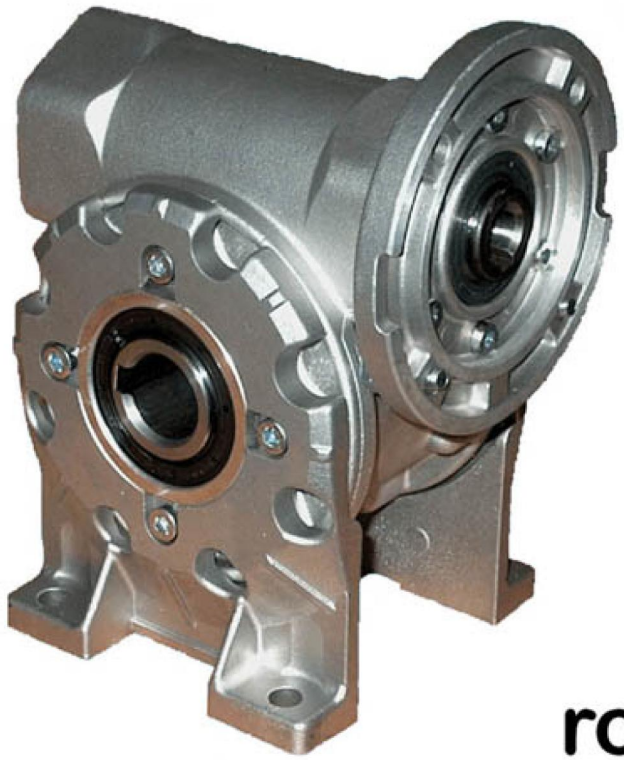
NOTTINGHAM
ELECTRICAL
TRANSMISSIONS

MRT

WORM GEAR REDUCERS



rotor nl®

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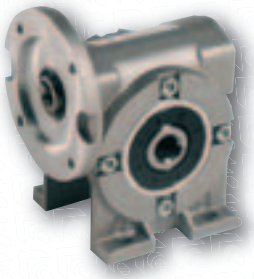
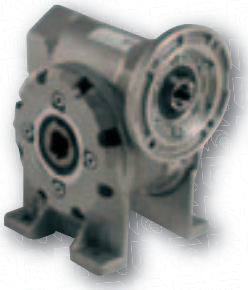
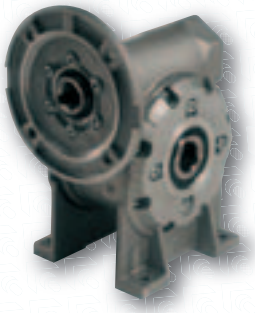
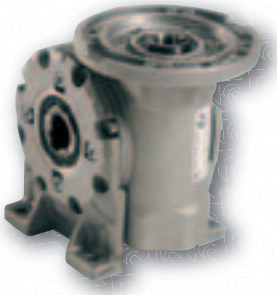
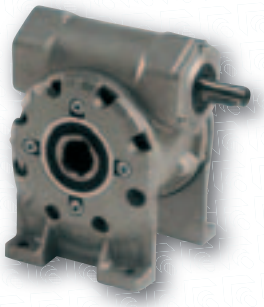
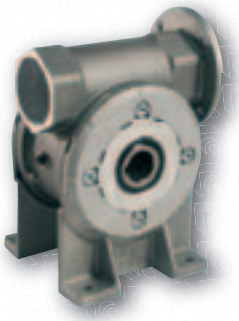
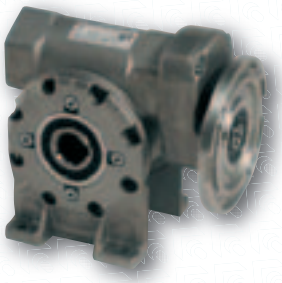
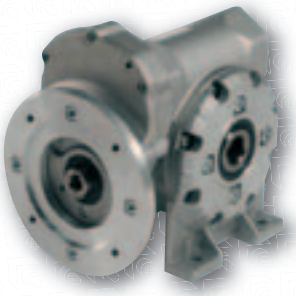
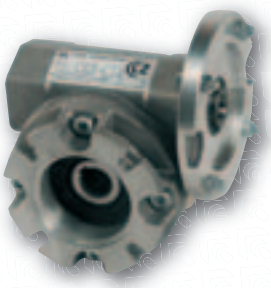
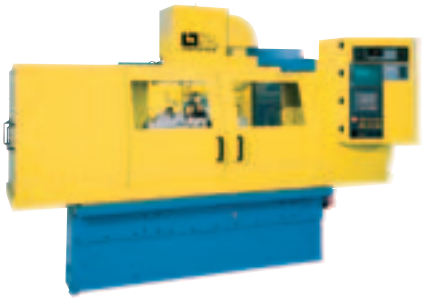









Manufacturing of worm gear-reducers is being carried out using the latest CNC machines:

Machining of gearbox housing using Daewoo ACE VC 500 and HP 500 machining centres.



Grinding of involute worms at JUMAXIMAT CNC grinders. Grinding of shaft surfaces using BUAJ 30 CNC grinding machine.

Machining of worm wheel gearing with OFA 16 NC hobbing cutter.

Machining of various parts with SP 30 CNC, SP 12 CNC lathes.

Quality control of dimensions of various parts using DEA GLOBAL IMAGE coordinate table.

INDEX

WORM-GEAR UNITS

MRT..A WORM-GEAR UNITS

1. GENERAL

Modern design, proved quality, reliability and the involute gear profile used at the worm gearing guarantee trouble-free service of **RT/MRT..A** series gear units. The **RT/MRT 30A** to **RT/MRT 80A** gear unit housings, feet and flanges are made of aluminium alloy and are supplied unpainted as standard. The **RT/MRT 100A** to **RT/MRT 180A** gear units housings are of cast iron and are supplied RAL5021 green-blue painted. By request any worm-gear unit can be supplied in **stainless steel** execution.

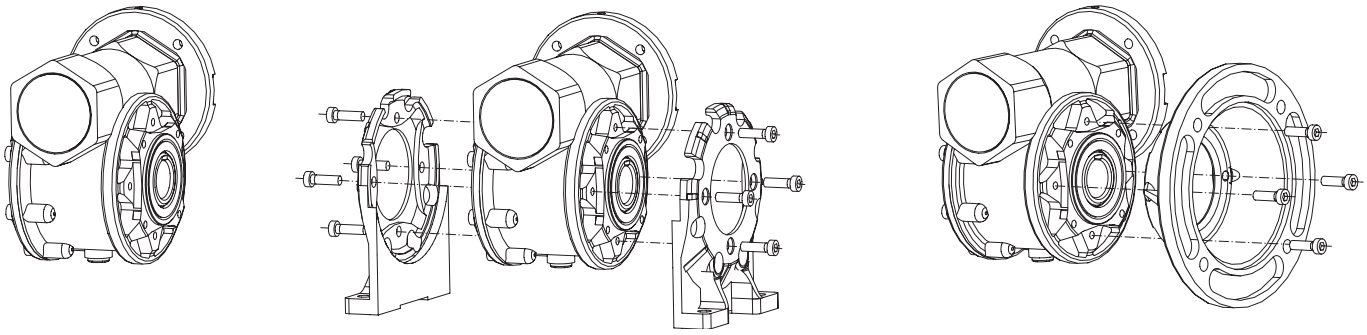
Characteristic properties of worm-gear units

- High gear ratio 5 to 100 achieved by one gear unit only
- Noise-free operation
- High load capacity
- Self-locking ability
- Reduced weight
- Easy integration to the driven machine

2. DESIGN

The RT/MRT 30A to RT/MRT 80A gear units are supplied as FT-RL as standard. FF, FB flanges and feet enable combinations as shown in the Mounting Position Table. As the flanges and feet are not parts of the compact housing, the final mounting position can be modified at later stage as required.

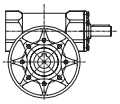
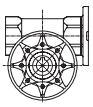
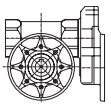
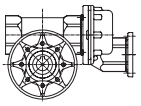
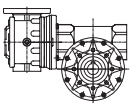
Fig. 2.1 **Flanges & Feet**



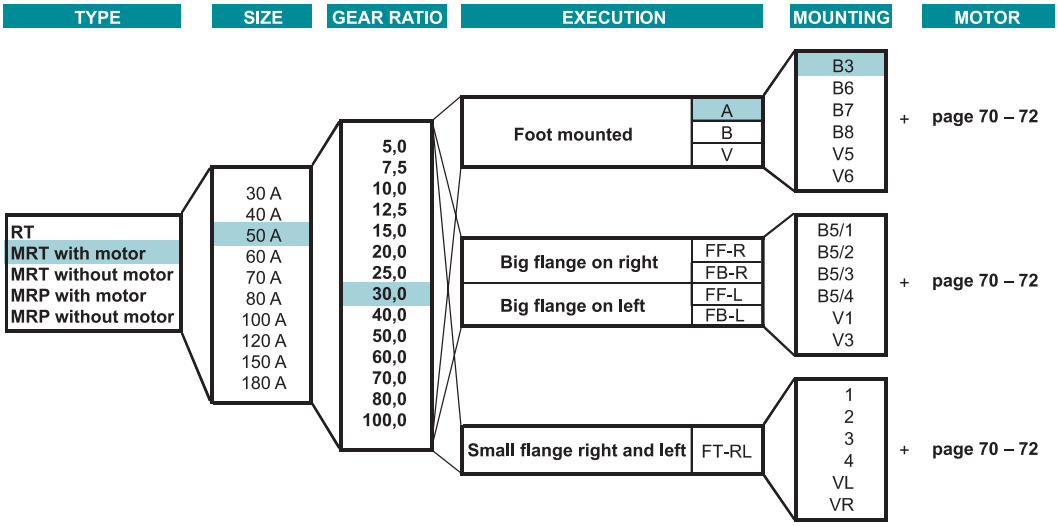
Ground worm with ZI involute profile made of cemented and hardened steel is used for the complete RT/MRT 30A to RT/MRT 180A series. The worm wheel is made of G – CuSn12Ni bronze cast on a steel hub. Precise gearing with involute profile is advantageous for its high efficiency, minimum friction and noise-free operation.

3. TYPE IDENTIFICATION

Identification of basic design

RT..	Worm-gear unit with the solid input shaft	
MRT..	Worm-gear unit with an electric motor or with hollow input shaft fitted with a flange for B5 mounted electric motor or B14A mounted motor or B14B mounted motor	
MRP..	Worm-gear unit with spur gear step (i = 3) at the input shaft	
MAT..	MRT worm-gear unit with ATC in-line gearbox at the input shaft (i = 3,4 and/or i = 6, and/or i = 8	
MRT..x..	Combination of two worm-gear units to achieve very high gear ratios i = 4,000. Gearbox combinations up to i = 10,000 ratio are available as an option.	

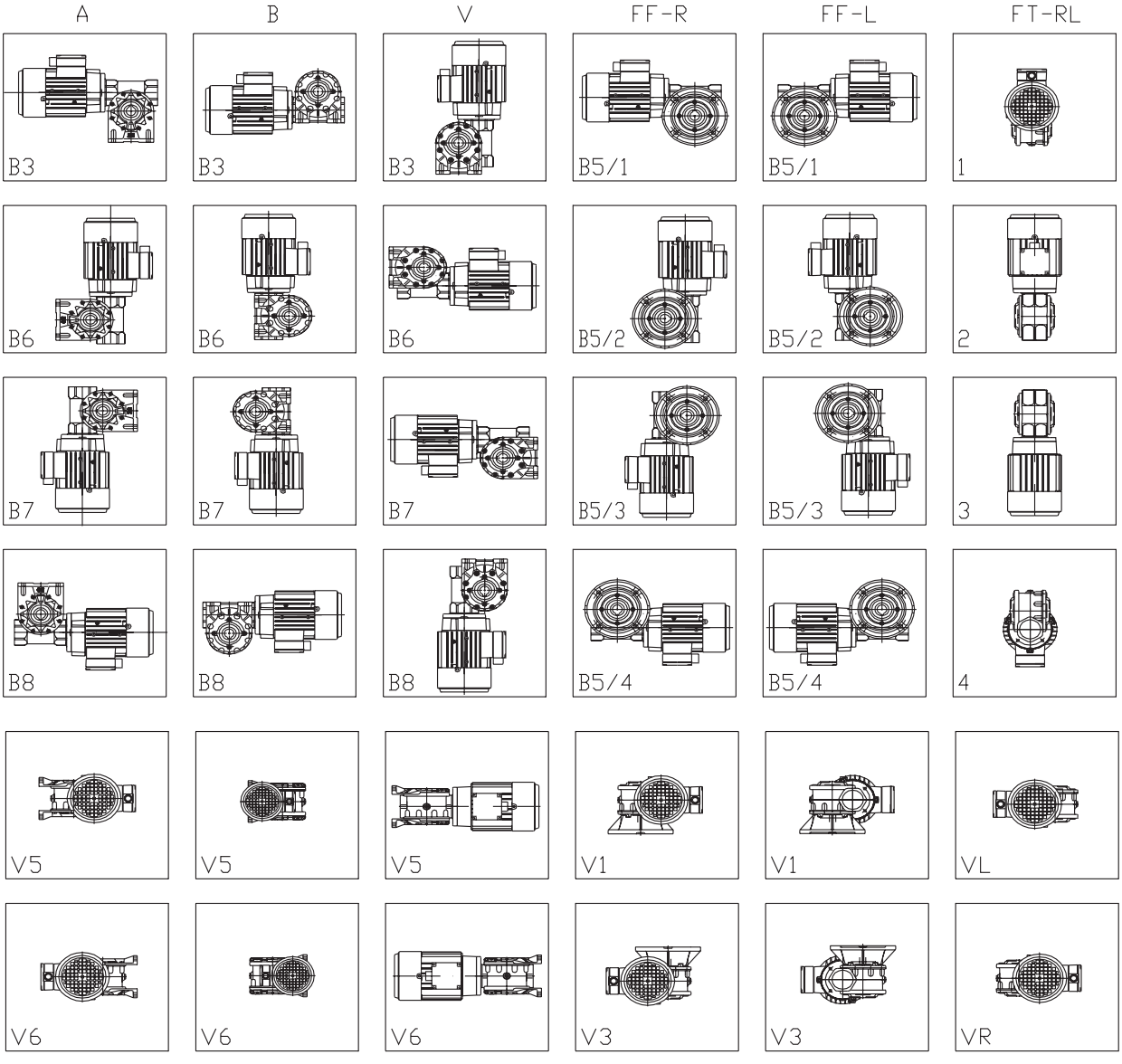
Type Identification Diagram



Example: MRT with motor 50 A 30 A B3 71-4p 0,25 kW

MRT 50 A worm-gear unit, gear ratio 30:1, mounting version A/B3, 71/100-4p 0,25 kW electric motor with 100 mm flange

Table 3.1 **Mounting Positions and Design**



Note: *Mounting position and design at FF and FB flanges are identical.*

4. GEAR UNIT SELECTION

General

The wide range of ratios specified in the catalogue enables to solve any requirements resulting from the operation of various equipment. The following data are necessary to specify a suitable gear unit:

a) input and output speed determining the gear ratio **i**
b) required torque $\mathbf{M_k}$ or input power $\mathbf{P_1}$

The data given in the tables 7.1 to 7.4 enable easy selection of a suitable gear unit. Should a non-standard unit be required please contact your distributors for the technical support.

Gear Ratio i

Gear ratio is a relation between input speed n_1 [rpm] and output speed n_2 [rpm].

$$i = \frac{n_1}{n_2}[-]$$

Gear ratios from 5 to 100 are used at worm-gear units. The use of squirrel cage asynchronous motors is recommended to drive the equipment as their speed n_1 [rpm] is almost constant even if under load. The following speed can be used for 50 Hz:

2-pole motor n_1 = 2800 rpm	6-pole motor n_1 = 900 rpm
4-pole motor n_1 = 1400 rpm	8-pole motor n_1 = 700 rpm

Two-pole motors are usually suitable for short-time operation. Their use should be consulted with the manufacturers. When 60 Hz supply frequency is used the increase of the input as well as output speed by 20 % need to be taken into consideration.

Torque M_2

The required torque M_k is determined by the load applied on the gear unit. It can be described as force **F** applied at certain distance of the arm **r**.

$$M_k\,[Nm] = F\,[N] \times r\,[m]$$

The output torque M_2 can be calculated from the following formula:

$$M_2\,[Nm] = \frac{9550 \times P_1\,[kW] \times \eta\,[\%] \times i}{100 \times n_1\,[rpm]}$$

The output torque M_2 need to be selected at a higher value than the required torque. Output torque related to individual gear ratios is specified in the Gear Unit Selection Table 7.4.

Input and Output Power P_1 and P_2

Motor input power can be calculated from the general relation between torque M and speed n:

$$P\,[kW] = \frac{M\,[Nm] \times n\,[rpm]}{9550}$$

The efficiency η of a gear unit is given by the ratio of the output power P_2 and the input power P_1, see Table 7.1 to 7.3.

$$P_1\,[kW] = \frac{M_k\,\text{required}\,[Nm] \times n_2\,[rpm]}{9550 \times \eta\,[\%]}$$

5. SERVICE FACTOR

Operation factor S_m

In order to guarantee operation safety at various loads and operation conditions the type of the gearbox (and motor) must be specified through the operation factor S_m. The values of operation factor S_m can be found in Table 5.1 taking the type of load, the average daily operation, the number of starts per hour into consideration. These values are applicable when the gear unit is used in conjunction with an electric motor. Should a brake motor be used the operation factor S_m needs to be multiplied by a coefficient of 1.15.

When selecting an actual gear unit the operation factor S_m must be lower than the gear unit service factor S_f or the required output torque M_p must be increased as per the following formula:

$$M_2 = M_p \times S_m$$

Table 6.1 **Service Factors**

Kind of load	Number of starts per hour	Average daily operation [hr]			
		<2	2÷8	9÷16	17÷24
Normal shock-free operation, small inertia (fans, gear pumps, assembly lines, conveyer screws, liquid mixers, filling machines and wrapping machines)	<10	0.8	1.0	1.2	1.3
Light jolts at starting, irregular operation, medium inertia (conveyer belts, hoists, winches, kneading and mixing machines, woodworking machines, printing machines, textile machines)	<10	1.0	1.3	1.5	1.6
	10÷50	1.2	1.4	1.7	1.9
	50÷100	1.3	1.6	2.0	2.1
	100÷200	1.5	1.9	2.3	2.4
Heavy shock irregular operation, high inertia (concrete mixers, suction pumps, compressors, rams, rolling mills, heavy goods conveyer belts, bending machines, presses, machines with irregular load and motion)	<10	1.2	1.5	1.8	2.0
	10÷50	1.4	1.7	2.1	2.2
	50÷100	1.6	2.0	2.3	2.5
	100÷200	1.8	2.3	2.7	2.9

Service factor S_f

Service factor S_f is a ratio between the maximum output torque the gearbox can continuously develop and the actual output torque which can be developed by the selected electric motor.

$$S_f = \frac{M_{2max}}{M_2} \; [-]$$

The maximum torque M_{2max} is established for the operation factor $S_m = 1$. Service factor values for individual gearbox executions and sizes, the gear ratios and a selection of electric motors are shown in the Table 7.4.

6. RADIAL AND AXIAL SHAFT LOADS

Worm-gear units are supplied with a hollow output shaft where a solid output shaft can be inserted. The robust housing of the hollow shaft and its bearings enable absorption of high radial forces while its service life is comparable with the other gearbox parts. The values shown in the Table 7.1 have been calculated for the input speed of 1400 rpm. The maximum applied load shown in the Table 7.1 must not be exceeded. Taper bearings can be used on the output shaft at sizes 40 to 150 if required. A use of different bearings at the gear units need to be consulted with the manufacturers.

Radial Load F_{rad}

To establish the radial load F_{rad} the middle of the solid inserted shaft length is considered to be the point where the force is applied. (see Fig. 6. 1.) Should the actual radial load be applied on the shaft at a greater length, the maximum load must be reduced. For example only 80 % of the radial load shown in the table is applicable should the force be applied at 75 % of the shaft length. The radial load higher by 25 % can be applied should the force be applicable at 30 % of the shaft length. If a pulley, chain sprocket or gear wheel, etc. is fitted on the output shaft, the radial load can be determined from the following formula:

$$F_{rad} = \frac{M_2 \times k \times 2000}{D} \; [N]$$

F_{rad} = radial load [N]
M_2 = output torque [Nm]
D = calculated pulley diameter (pitch circle) [mm]
k = load factor
1,00 for chain sprockets
1,25 for spur gears wheels
1,50 for pulleys

It means that the shaft radial load can be decreased by the increase of the pulley diameter, if at all possible. Should the radial load be too high or the force be applied on the shaft at a long distance, an external support by bearings must be opted for to absorb the additional forces.

Axial load F_{ax}

Permissible values of axial load F_{ax} represent approximately 20 % of permissible radial load F_{rad}

Fig. 6.1 **Load of Shaft**

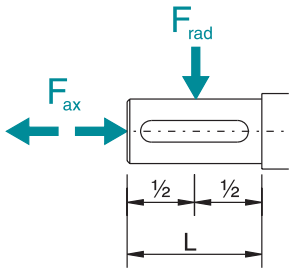


Table 6.1 Radial and Axial Load

Max. Permissible Radial and Axial Load [N]

			RT/MRT 30A		RT/MRT 40A		RT/MRT 50A		RT/MRT 60A		RT/MRT 70A		RT/MRT 80A		RT/MRT 100A		RT/MRT 120A		RT/MRT 150A		RT/MRT 180A	
	i	rpm	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}
n_1		1400.0	20	100	40	200	60	300	70	340	70	360	90	450	130	650	170	850	260	1300	500	1550
n_2	5.0	280.0	110	600	150	780	200	980	300	1490	380	1880	450	2180	520	2655	750	3730	1020	5050	1100	5480
n_2	7.5	187.0	130	660	170	870	220	1100	330	1650	420	2090	500	2490	580	2880	810	4050	1100	5480	1190	5950
n_2	10.0	140.0	150	730	190	960	240	1220	360	1810	460	2300	550	2740	630	3170	890	4460	1210	6040	1310	6550
n_2	12.5	112.0	160	790	210	1030	260	1310	390	1950	490	2470	590	2950	680	3410	960	4800	1300	6510	1410	7060
n_2	15.0	93.0	170	840	220	1090	280	1390	420	2080	530	2630	630	3140	730	3630	1020	5110	1380	6920	1500	7510
n_2	20.0	70.0	180	920	240	1200	310	1530	460	2280	580	2890	690	3450	800	3990	1120	5610	1520	7610	1650	8260
n_2	25.0	56.0	200	990	260	1300	330	1650	490	2460	620	3120	740	3720	860	4300	1210	6050	1640	8200	1780	8890
n_2	30.0	47.0	210	1050	270	1370	350	1750	520	2610	660	3300	790	3940	910	4560	1280	6410	1740	8690	1890	9430
n_2	40.0	35.0	230	1160	300	1520	390	1930	580	2880	730	3650	870	4350	1010	5030	1410	7070	1920	9590	2080	10400
n_2	50.0	28.0	250	1250	330	1630	420	2080	620	3100	790	3930	940	4680	1080	5420	1520	7620	2070	10330	2240	11210
n_2	60.0	23.0	270	1330	350	1740	440	2220	660	3310	840	4190	1000	5000	1160	5790	1630	8140	2210	11030	2390	11960
n_2	70.0	20.0	280	1380	360	1830	460	2320	680	3480	880	4360	1050	5240	1220	6065	1700	8530	2320	11560	2510	12540
n_2	80.0	17.5	290	1460	380	1910	490	2430	720	3620	920	4590	1100	5480	1270	6340	1780	8910	2420	12080	2620	13110
n_2	100.0	14.0	310	1570	410	2060	520	2620	780	3900	990	4950	1180	5900	1370	6830	1920	9600	2600	13010	2820	14120

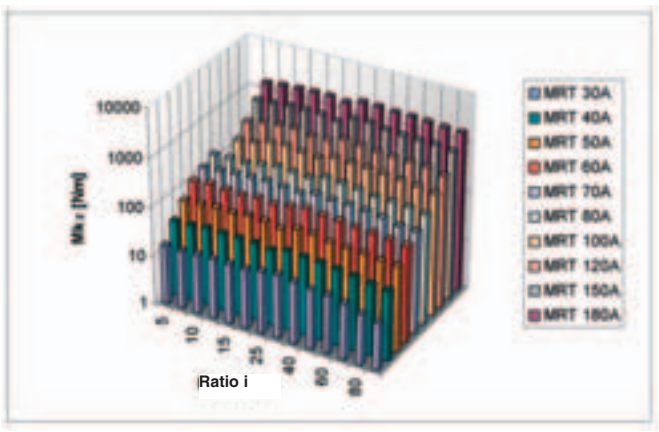
Max. Permissible Radial and Axial Load for Taper Bearings [N]

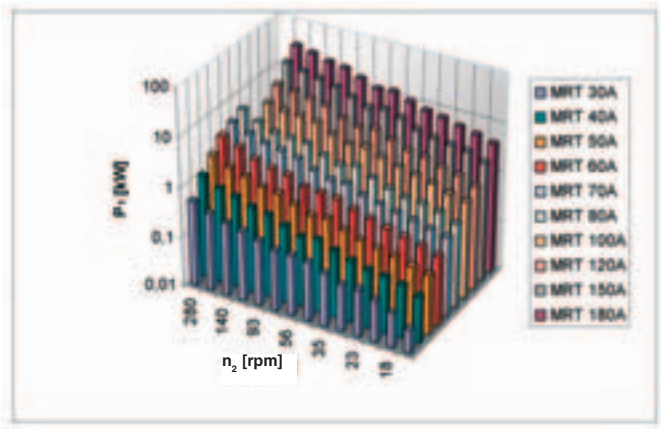
			RT/MRT 30A		RT/MRT 40A		RT/MRT 50A		RT/MRT 60A		RT/MRT 70A		RT/MRT 80A		RT/MRT 100A		RT/MRT 120A		RT/MRT 150A		RT/MRT 180A	
	i	rpm	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}	F_{ax}	F_{rad}
n_1		1400.0	20	100	40	200	60	300	70	340	70	360	90	450	130	650	170	850	260	1300	500	1550
n_2	5.0	280.0	150	720	340	1690	430	2130	750	3620	830	4200	860	4410	1220	6080	1640	8160	1740	8670	1790	8970
n_2	7.5	187.0	160	790	370	1850	470	2350	820	4090	920	4620	960	4800	1310	6550	1760	8780	1870	9330	1930	9650
n_2	10.0	140.0	170	860	400	2010	510	2570	890	4460	1010	5040	1050	5230	1430	7150	1910	9570	2040	10180	2100	10520
n_2	12.5	112.0	180	920	430	2150	550	2750	950	4770	1080	5390	1120	5590	1530	7640	2050	10240	2180	10880	2250	11250
n_2	15.0	93.0	200	980	460	2280	580	2900	1010	5040	1140	5700	1180	5920	1620	8080	2160	10820	2300	11510	2380	11900
n_2	20.0	70.0	210	1060	500	2480	630	3160	1100	5490	1240	6210	1290	6440	1760	8800	2360	11790	2510	12530	2590	12960
n_2	25.0	56.0	230	1140	530	2650	680	3380	1170	5870	1330	6640	1380	6890	1880	9410	2520	12600	2680	13400	2770	13850
n_2	30.0	47.0	240	1200	560	2790	710	3560	1240	6190	1400	7000	1450	7260	1980	9910	2660	13280	2820	14120	2920	14600
n_2	40.0	35.0	260	1310	610	3050	780	3890	1350	6760	1530	7640	1590	7930	2170	10830	2900	14510	3090	15430	3190	15950
n_2	50.0	28.0	280	1400	650	3260	830	4160	1450	7230	1630	8170	1700	8480	2320	11580	3100	15510	3300	16490	3410	17050
n_2	60.0	23.0	300	1490	690	3460	880	4420	1530	7670	1730	8670	1800	9000	2460	12280	3290	16460	3500	17500	3620	18090
n_2	70.0	20.0	310	1550	720	3610	910	4610	1600	8020	1810	9030	1870	9370	2560	12800	3440	17160	3650	18250	3770	18860
n_2	80.0	17.5	320	1610	750	3760	960	4790	1660	8320	1880	9410	1950	9760	2670	13330	3570	17860	3800	18990	3930	19640
n_2	100.0	14.0	350	1730	800	4020	1030	5130	1780	8900	2010	10060	2090	10440	2850	14260	3820	19100	4060	20310	4200	21000

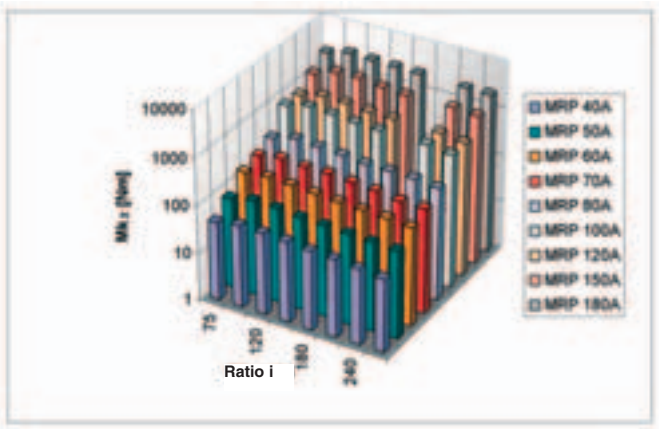
7. PERFORMANCE DATA

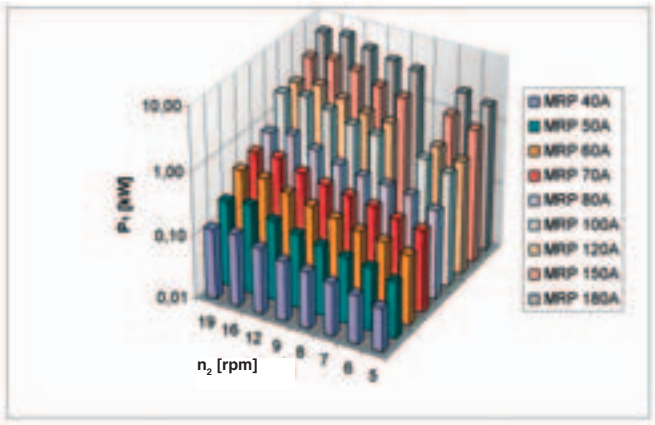
The series of MRT..A worm-gear units covers a wide range of transmitted torque and power (see Fig. 7.1)

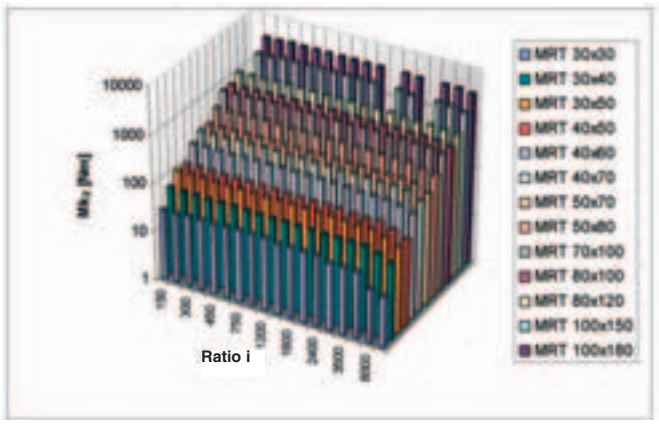
Fig. 7.1 Performance Data of Gear Units for n_1=1400 [rpm]

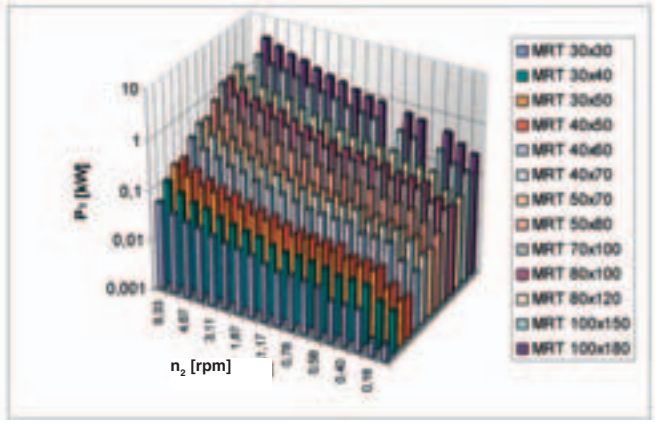












Performance data of gear units are shown in the Tables 7.1 to 7.4

Tables 7.1 to 7.3 show max. values of the output torque M_{k2} and power P_1 with operation factor = 1. The values shown in the Tables 7.1 to 7.3 also applicable for the RT execution.

Example:

n_1 = 1400 [rpm]					
Type –	**i –**	**n_2 [rpm**	**Mk_2 [Nm]**	**P_1 [kW]**	**η_d [%]**
(M)RT 30A	5	280	16	0.54	87

i – gear ratio
n_1 – input shaft speed
n_2 – output shaft speed
M_{k2} – output torque
P_1 – rated input power
η_d – dynamic gear unit efficiency

The Table 8.4 shows parameters of MRT and MRP gear units with an electric motor classified by power and the output speed.

Example:

P_1 = 0,37 kW		n_1 = 1400 [rpm]			71-4p
n_2 [rpm]	**i [–]**	**M_2 [Nm]**	**Sf [–]**	**Size –**	**St. As. Flange**
280	5	11	3.3	MRT 40	F40M (85)
187	7,5	16	2.2	MRT 40	F40M (85)

P_1 – electric motor power
n_1 – input shaft speed
n_2 – output shaft speed
i – gear ratio
M_2 – output torque
Sf – gear unit service factor
St. As. Flange – standard motor flange fitted – see Table 11.1

7.1 Table of Rated Data RT/MRT

Type -	n_1=2800 [rpm]					n_1=1400 [rpm]					n_1=900 [rpm]					n_1=500 [rpm]				
	i -	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]	i -	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]	i -	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]	i -	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]
(M)RT 30A	5	560	13	0.87	88	5	280	16	0.54	87	5	180	18	0.39	86	5	100	21	0.27	82
	7.5	373	13	0.60	85	7.5	187	16	0.37	84	7.5	120	18	0.27	83	7.5	67	21	0.19	79
	10	280	14	0.48	85	10	140	17	0.30	84	10	90	19	0.22	83	10	50	22	0.15	79
	13	224	14	0.42	79	13	112	17	0.26	78	13	72	19	0.19	77	13	40	22	0.13	73
	15	187	14	0.35	79	15	93	17	0.21	78	15	60	19	0.16	77	15	33	22	0.11	73
	20	140	14	0.28	74	20	70	17	0.17	73	20	45	19	0.12	72	20	25	22	0.08	68
	25	112	16	0.28	68	25	56	19	0.17	67	25	36	21	0.12	66	25	20	25	0.08	63
	30	93	18	0.27	64	30	47	21	0.16	63	30	30	23	0.12	62	30	17	27	0.08	59
	40	70	16	0.20	59	40	35	19	0.12	58	40	23	21	0.09	57	40	13	25	0.06	54
	50	56	14	0.15	55	50	28	17	0.09	54	50	18	19	0.07	53	50	10	22	0.05	50
	60	47	13	0.14	46	60	23	16	0.09	45	60	15	18	0.06	44	60	8	21	0.04	42
	70	40	12	0.11	45	70	20	14	0.07	43	70	13	16	0.05	41	70	7	19	0.04	39
	80	35	9	0.07	44	80	18	11	0.05	42	80	11	12	0.04	40	80	6	14	0.02	38
	100	28	8	0.06	40	100	14	9	0.03	38	100	9	10	0.03	36	100	5	12	0.02	34
(M)RT 40A	5	560	30	2.00	88	5	280	36	1.21	87	5	180	40	0.88	86	5	100	47	0.60	82
	7.5	373	31	1.38	88	7.5	187	37	0.83	87	7.5	120	41	0.60	86	7.5	67	48	0.41	82
	10	280	34	1.16	86	10	140	41	0.71	85	10	90	46	0.52	84	10	50	54	0.35	80
	13	224	33	0.91	85	13	112	39	0.54	84	13	72	44	0.4	83	13	40	52	0.28	79
	15	187	34	0.79	84	15	93	40	0.47	83	15	60	45	0.34	82	15	33	53	0.24	78
	20	140	33	0.60	80	20	70	39	0.36	79	20	45	44	0.27	78	20	25	52	0.18	74
	25	112	30	0.45	78	25	56	36	0.27	77	25	36	40	0.20	76	25	20	47	0.14	72
	30	93	36	0.49	72	30	47	43	0.30	71	30	30	48	0.22	70	30	17	56	0.15	67
	40	70	34	0.38	66	40	35	41	0.23	65	40	23	46	0.17	64	40	13	54	0.12	61
	50	56	33	0.31	63	50	28	39	0.18	62	50	18	44	0.14	61	50	10	52	0.09	58
	60	47	30	0.25	58	60	23	36	0.15	57	60	15	40	0.11	56	60	8	47	0.08	53
	70	40	29	0.23	52	70	20	34	0.14	51	70	13	38	0.10	50	70	7	45	0.07	48
	80	35	25	0.19	48	80	18	30	0.12	46	80	11	34	0.09	44	80	6	40	0.06	42
	100	28	24	0.15	47	100	14	28	0.09	45	100	9	31	0.07	43	100	5	36	0.05	41
(M)RT 50A	5	560	55	3.54	91	5	280	65	2.12	90	5	180	73	1.55	89	5	100	86	1.06	85
	7.5	373	56	2.49	88	7.5	187	67	1.51	87	7.5	120	75	1.10	86	7.5	67	88	0.75	82
	10	280	60	2.00	88	10	140	71	1.20	87	10	90	79	0.87	86	10	50	93	0.59	82
	13	224	57	1.54	87	13	112	68	0.93	86	13	72	76	0.67	85	13	40	89	0.46	81
	15	187	64	1.45	86	15	93	76	0.87	85	15	60	85	0.64	84	15	33	100	0.44	80
	20	140	62	1.08	84	20	70	74	0.65	83	20	45	83	0.48	82	20	25	97	0.33	78
	25	112	54	0.80	79	25	56	64	0.48	78	25	36	71	0.35	77	25	20	83	0.24	73
	30	93	67	0.87	75	30	47	80	0.53	74	30	30	89	0.38	73	30	17	104	0.26	69
	40	70	65	0.65	73	40	35	77	0.39	72	40	23	86	0.29	71	40	13	101	0.20	67
	50	56	58	0.52	66	50	28	69	0.31	65	50	18	77	0.23	64	50	10	90	0.15	61
	60	47	56	0.45	61	60	23	67	0.27	60	60	15	75	0.20	59	60	8	88	0.14	56
	70	40	54	0.38	59	70	20	64	0.23	58	70	13	71	0.17	57	70	7	83	0.11	54
	80	35	50	0.31	59	80	18	60	0.19	57	80	11	67	0.14	55	80	6	79	0.10	52
	100	28	48	0.27	53	100	14	57	0.16	51	100	9	64	0.12	49	100	5	75	0.08	47
(M)RT 60A	5	560	93	5.99	91	5	280	110	3.58	90	5	180	123	2.60	89	5	100	144	1.77	85
	7.5	373	101	4.39	90	7.5	187	120	2.64	89	7.5	120	134	1.91	88	7.5	67	157	1.30	84
	10	280	94	3.06	90	10	140	112	1.84	89	10	90	125	1.34	88	10	50	147	0.92	84
	13	224	93	2.48	88	13	112	110	1.48	87	13	72	123	1.08	86	13	40	144	0.74	82
	15	187	101	2.27	87	15	93	120	1.36	86	15	60	134	0.99	85	15	33	157	0.68	81
	20	140	94	1.64	84	20	70	112	0.99	83	20	45	125	0.72	82	20	25	147	0.49	78
	25	112	106	1.55	80	25	56	126	0.94	79	25	36	141	0.68	78	25	20	166	0.47	74
	30	93	117	1.49	77	30	47	139	0.89	76	30	30	155	0.65	75	30	17	182	0.45	71
	40	70	110	1.12	72	40	35	131	0.68	71	40	23	146	0.49	70	40	13	171	0.33	67
	50	56	103	0.93	65	50	28	122	0.56	64	50	18	136	0.41	63	50	10	160	0.28	60
	60	47	96	0.74	63	60	23	114	0.45	62	60	15	127	0.33	61	60	8	149	0.22	58
	70	40	92	0.62	62	70	20	109	0.37	61	70	13	122	0.27	60	70	7	143	0.19	57
	80	35	87	0.51	63	80	18	104	0.31	61	80	11	116	0.23	59	80	6	136	0.16	56
	100	28	81	0.41	58	100	14	96	0.25	56	100	9	107	0.19	54	100	5	126	0.13	51
(M)RT 70A	5	560	124	7.90	92	5	280	147	4.74	91	5	180	164	3.43	90	5	100	193	2.35	86
	7.5	373	129	5.54	91	7.5	187	153	3.32	90	7.5	120	171	2.41	89	7.5	67	201	1.65	85
	10	280	139	4.43	92	10	140	165	2.66	91	10	90	184	1.93	90	10	50	216	1.31	86
	13	224	150	3.91	90	13	112	178	2.35	89	13	72	199	1.70	88	13	40	234	1.17	84
	15	187	153	3.4	88	15	93	182	2.04	87	15	60	203	1.48	86	15	33	238	1.01	82
	20	140	143	2.44	86	20	70	170	1.47	85	20	45	190	1.07	84	20	25	223	0.73	80
	25	112	136	1.92	83	25	56	162	1.16	82	25	36	181	0.84	81	25	20	212	0.58	77
	30	93	162	2.03	78	30	47	193	1.22	77	30	30	216	0.89	76	30	17	254	0.62	72
	40	70	149	1.48	74	40	35	177	0.89	73	40	23	198	0.65	72	40	13	232	0.45	68
	50	56	151	1.25	71	50	28	180	0.75	70	50	18	201	0.55	69	50	10	236	0.37	66
	60	47	140	1.07	64	60	23	166	0.64	63	60	15	185	0.47	62	60	8	217	0.32	59
	70	40	128	0.92	58	70	20	152	0.56	57	70	13	170	0.41	56	70	7	200	0.28	53
	80	35	110	0.73	55	80.0	18	131	0.45	53	80	11	146	0.34	51	80	6	171	0.23	48
	100	28	108	0.65	49	100.0	14	128	0.40	47	100	9	143	0.30	45	100	5	168	0.20	43

7.1 Table of Rated Data RT/MRT

Type -	n_1=2800 [rpm]					n_1=1400 [rpm]					n_1=900 [rpm]					n_1=500 [rpm]				
	i -	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]	i -	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]	i -	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]	i -	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]
(M)RT 80A	5	560	160	9.98	94	5.0	280	190	5.99	93	5	180	212	4.34	92	5	100	249	3.00	87
	7.5	373	164	6.89	93	7.5	187	195	4.14	92	7.5	120	218	3.01	91	7.5	67	256	2.08	86
	10	280	160	5.10	92	10.0	140	190	3.06	91	10	90	212	2.22	90	10	50	249	1.52	86
	13	224	185	4.82	90	13.0	112	220	2.90	89	13	72	246	2.11	88	13	40	289	1.44	84
	15	187	210	4.72	87	15.0	93	250	2.84	86	15	60	279	2.06	85	15	33	328	1.41	81
	20	140	198	3.34	87	20.0	70	236	2.01	86	20	45	264	1.46	85	20	25	310	1.00	81
	25	112	189	2.64	84	25.0	56	225	1.59	83	25	36	251	1.15	82	25	20	295	0.79	78
	30	93	241	3.10	76	30.0	47	286	1.86	75	30	30	319	1.35	74	30	17	375	0.93	70
	40	70	227	2.25	74	40.0	35	270	1.36	73	40	23	302	0.99	72	40	13	355	0.68	68
	50	56	209	1.70	72	50.0	28	249	1.03	71	50	18	278	0.75	70	50	10	326	0.51	67
	60	47	188	1.41	65	60.0	23	223	0.85	64	60	15	249	0.62	63	60	8	292	0.42	60
	70	40	188	1.31	60	70.0	20	224	0.80	59	70	13	250	0.58	58	70	7	294	0.40	55
	80	35	180	1.12	59	80.0	18	214	0.69	57	80	11	239	0.51	55	80	6	281	0.35	52
	100	28	159	0.82	57	100.0	14	189	0.50	55	100	9	211	0.38	53	100	5	248	0.26	50
(M)RT 100A	7.5	373	269	11.40	92	7.5	187	320	6.87	91	7.5	120	357	4.98	90	7.5	67	419	3.40	86
	10	280	294	9.58	90	10.0	140	350	5.77	89	10	90	391	4.19	88	10	50	459	2.86	84
	13	224	370	9.54	91	13.0	112	440	5.73	90	13	72	491	4.16	89	13	40	576	2.84	85
	15	187	391	8.59	89	15.0	93	465	5.16	88	15	60	519	3.75	87	15	33	609	2.56	83
	20	140	345	5.95	85	20.0	70	410	3.58	84	20	45	458	2.60	83	20	25	538	1.78	79
	25	112	336	4.81	82	25.0	56	400	2.90	81	25	36	447	2.11	80	25	20	525	1.45	76
	30	93	421	5.21	79	30.0	47	500	3.13	78	30	30	559	2.28	77	30	17	656	1.57	73
	40	70	404	4.00	74	40.0	35	480	2.41	73	40	23	536	1.75	72	40	13	629	1.21	68
	50	56	387	3.24	70	50.0	28	460	1.95	69	50	18	514	1.42	68	50	10	603	0.97	65
	60	47	370	2.78	65	60.0	23	440	1.68	64	60	15	491	1.22	63	60	8	576	0.84	60
	70	40	340	2.23	64	70.0	20	415	1.38	63	70	13	460	1.00	62	70	7	540	0.68	59
	80	35	320	1.83	64	80.0	18	380	1.11	63	80	11	424	0.81	62	80	6	498	0.55	59
	100	28	286	1.55	54	100.0	14	340	0.96	52	100	9	380	0.72	50	100	5	446	0.49	48
(M)RT 120A	7.5	373	454	18.90	94	7.5	187	540	11.40	93	7.5	120	603	8.24	92	7.5	67	708	5.68	87
	10	280	538	17.00	93	10.0	140	640	10.20	92	10	90	715	7.40	91	10	50	839	5.11	86
	13	224	580	14.80	92	13.0	112	690	8.89	91	13	72	771	6.46	90	13	40	905	4.41	86
	15	187	606	13.20	90	15.0	93	720	7.91	89	15	60	804	5.74	88	15	33	944	3.92	84
	20	140	530	9.03	86	20.0	70	630	5.43	85	20	45	704	3.95	84	20	25	826	2.7	80
	25	112	530	7.31	85	25.0	56	630	4.40	84	25	36	704	3.20	83	25	20	826	2.19	79
	30	93	681	8.22	81	30.0	47	810	4.95	80	30	30	905	3.60	79	30	17	1062	2.47	75
	40	70	639	6.25	75	40.0	35	760	3.76	74	40	23	849	2.74	73	40	13	997	1.89	69
	50	56	589	4.73	73	50.0	28	700	2.85	72	50	18	782	2.08	71	50	10	918	1.43	67
	60	47	572	4.24	66	60.0	23	680	2.56	65	60	15	760	1.87	64	60	8	892	1.28	61
	70	40	556	3.33	70	70.0	20	655	1.99	69	70	13	740	1.47	68	70	7	866	1.00	65
	80	35	538	2.86	69	80.0	18	640	1.72	68	80	11	715	1.26	67	80	6	839	0.86	64
	100	28	454	2.08	64	100.0	14	540	1.28	62	100	9	603	0.95	60	100	5	708	0.65	57
(M)RT 150A	7.5	373	900	37.40	94	7.5	187	1070	22.50	93	7.5	120	1195	16.30	92	7.5	67	1403	11.30	87
	10	280	942	30.00	92	10.0	140	1120	18.00	91	10	90	1251	13.10	90	10	50	1469	8.94	86
	13	224	1034	26.40	92	13.0	112	1230	15.90	91	13	72	1374	11.50	90	13	40	1613	7.86	86
	15	187	1026	22.30	90	15.0	93	1220	13.40	89	15	60	1363	9.73	88	15	33	1600	6.65	84
	20	140	1018	16.60	90	20.0	70	1210	9.97	89	20	45	1352	7.24	88	20	25	1587	4.95	84
	25	112	900	12.60	84	25.0	56	1070	7.56	83	25	36	1195	5.49	82	25	20	1403	3.77	78
	30	93	1245	14.30	85	30.0	47	1480	8.61	84	30	30	1653	6.26	83	30	17	1941	4.29	79
	40	70	1295	11.90	80	40.0	35	1540	7.14	79	40	23	1720	5.20	78	40	13	2019	3.57	74
	50	56	1127	8.37	79	50.0	28	1340	5.04	78	50	18	1497	3.66	77	50	10	1757	2.52	73
	60	47	1060	7.10	73	60.0	23	1260	4.28	72	60	15	1407	3.11	71	60	8	1652	2.15	67
	70	40	1055	6.40	69	70.0	20	1255	3.87	68	70	13	1400	2.81	67	70	7	1646	1.87	66
	80	35	1051	5.84	66	80.0	18	1250	3.52	65	80	11	1396	2.57	64	80	6	1639	1.76	61
	100	28	967	4.30	66	100.0	14	1150	2.63	64	100	9	1285	1.95	62	100	5	1509	1.34	59
(M)RT 180A	7.5	373	1421	59.10	94	7.5	187	1690	35.50	93	7.5	120	1888	25.80	92	7.5	67	2217	17.8	87
	10	280	1564	49.80	92	10.0	140	1860	30.00	91	10	90	2078	21.80	90	10	50	2440	14.9	86
	13	224	1590	41.00	91	13.0	112	1890	24.60	90	13	72	2111	17.90	89	13	40	2478	12.2	85
	15	187	1665	37.00	88	15.0	93	1980	22.20	87	15	60	2212	16.20	86	15	33	2597	11.10	82
	20	140	1716	28.30	89	20.0	70	2040	17.00	88	20	45	2279	12.30	87	20	25	2676	8.44	83
	25	112	1531	21.10	85	25.0	56	1820	12.70	84	25	36	2033	9.23	83	25	20	2387	6.33	79
	30	93	1909	22.80	82	30.0	47	2270	13.70	81	30	30	2536	9.96	80	30	17	2977	6.84	76
	40	70	1867	17.30	79	40.0	35	2220	10.40	78	40	23	2480	7.59	77	40	13	2912	5.22	73
	50	56	1783	14.10	74	50.0	28	2120	8.51	73	50	18	2368	6.20	72	50	10	2780	4.28	68
	60	47	1766	12.50	69	60.0	23	2100	7.55	68	60	15	2346	5.50	67	60	8	2754	3.75	64
	70	42	1680	10.40	68	70.0	20	2000	6.25	67	70	13	2235	4.56	66	70	7	2620	3.01	65
	80	35	1598	8.87	66	80.0	18	1900	5.36	65	80	11	2122	3.91	64	80	6	2491	2.67	61
	100	28	1581	7.13	65	100.0	14	1880	4.31	64	100	9	2100	3.14	63	100	5	2465	2.15	60

7.2 Table of Rated Data MRP

Type [–]	n_1=2800 [rpm]							n_1=1400 [rpm]							n_1=900 [rpm]							n_1=500 [rpm]						
	i_1 [–]	i_2 [–]	i [–]	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]	i_1 [–]	i_2 [–]	i [–]	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]	i_1 [–]	i_2 [–]	i [–]	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]	i_1 [–]	i_2 [–]	i [–]	n_2 [rpm]	Mk_2 [Nm]	P_1 [kW]	η_d [%]
MRP 40	3	25	75	37	39	0.22	70	3	25	75	19	47	0.13	68	3	25	75	12	53	0.10	67	3	25	75	7	62	0.07	66
	3	30	90	31	47	0.23	65	3	30	90	16	56	0.14	64	3	30	90	10	63	0.11	62	3	30	90	6	74	0.07	61
	3	40	120	23	45	0.19	59	3	40	120	12	54	0.11	58	3	40	120	8	60	0.08	57	3	40	120	4	71	0.06	56
	3	50	150	19	43	0.15	56	3	50	150	9	52	0.09	55	3	50	150	6	58	0.07	54	3	50	150	3	68	0.05	53
	3	60	180	16	39	0.12	51	3	60	180	8	47	0.08	50	3	60	180	5	53	0.06	49	3	60	180	3	62	0.04	48
	3	70	210	13	38	0.11	47	3	70	210	7	45	0.07	46	3	70	210	4	50	0.05	45	3	70	210	2	59	0.03	44
	3	80	240	12	33	0.10	41	3	80	240	6	40	0.06	40	3	80	240	4	45	0.04	39	3	80	240	2	53	0.03	38
	3	100	300	9	30	0.07	40	3	100	300	5	36	0.05	39	3	100	300	3	40	0.03	38	3	100	300	2	47	0.02	37
MRP 50	3	25	75	37	69	0.38	71	3	25	75	19	83	0.23	69	3	25	75	12	93	0.17	68	3	25	75	7	109	0.11	67
	3	30	90	31	87	0.42	67	3	30	90	16	104	0.26	66	3	30	90	10	116	0.19	64	3	30	90	6	137	0.13	63
	3	40	120	23	84	0.32	65	3	40	120	12	101	0.19	64	3	40	120	8	113	0.14	62	3	40	120	4	133	0.09	61
	3	50	150	19	75	0.25	59	3	50	150	9	90	0.15	58	3	50	150	6	101	0.11	57	3	50	150	3	118	0.07	56
	3	60	180	16	73	0.22	54	3	60	180	8	88	0.13	53	3	60	180	5	99	0.10	52	3	60	180	3	116	0.07	51
	3	70	210	13	69	0.18	52	3	70	210	7	83	0.11	51	3	70	210	4	93	0.08	50	3	70	210	2	109	0.06	49
	3	80	240	12	66	0.16	50	3	80	240	6	79	0.10	49	3	80	240	4	88	0.07	48	3	80	240	2	104	0.05	47
	3	100	300	9	63	0.13	46	3	100	300	5	75	0.08	45	3	100	300	3	84	0.06	44	3	100	300	2	99	0.04	43
MRP 60	3	25	75	37	138	0.75	72	3	25	75	19	166	0.46	70	3	25	75	12	186	0.34	69	3	25	75	7	218	0.23	68
	3	30	90	31	152	0.72	69	3	30	90	16	182	0.44	67	3	30	90	10	204	0.32	66	3	30	90	6	239	0.21	65
	3	40	120	23	143	0.54	65	3	40	120	12	171	0.33	64	3	40	120	8	192	0.24	62	3	40	120	4	225	0.16	61
	3	50	150	19	133	0.45	58	3	50	150	9	160	0.27	57	3	50	150	6	179	0.20	56	3	50	150	3	210	0.13	55
	3	60	180	16	124	0.36	56	3	60	180	8	149	0.22	55	3	60	180	5	167	0.16	54	3	60	180	3	196	0.11	53
	3	70	210	13	119	0.30	55	3	70	210	7	143	0.18	54	3	70	210	4	160	0.14	53	3	70	210	2	188	0.09	52
	3	80	240	12	113	0.26	54	3	80	240	6	136	0.16	53	3	80	240	4	152	0.11	52	3	80	240	2	179	0.08	51
	3	100	300	9	105	0.21	49	3	100	300	5	126	0.13	48	3	100	300	3	141	0.09	47	3	100	300	2	166	0.06	47
MRP 70	3	25	75	37	177	0.93	75	3	25	75	19	212	0.57	73	3	25	75	12	237	0.42	72	3	25	75	7	279	0.28	70
	3	30	90	31	212	0.99	70	3	30	90	16	254	0.60	68	3	30	90	10	284	0.44	67	3	30	90	6	334	0.30	66
	3	40	120	23	193	0.72	66	3	40	120	12	232	0.44	65	3	40	120	8	260	0.32	63	3	40	120	4	305	0.21	62
	3	50	150	19	197	0.60	64	3	50	150	9	236	0.37	63	3	50	150	6	264	0.27	61	3	50	150	3	310	0.18	60
	3	60	180	16	181	0.52	57	3	60	180	8	217	0.32	56	3	60	180	5	243	0.23	55	3	60	180	3	285	0.15	54
	3	70	210	13	167	0.45	51	3	70	210	7	200	0.28	50	3	70	210	4	224	0.20	49	3	70	210	2	263	0.14	48
	3	80	240	12	143	0.37	47	3	80	240	6	171	0.23	46	3	80	240	4	192	0.17	45	3	80	240	2	225	0.11	44
	3	100	300	9	140	0.33	42	3	100	300	5	168	0.20	41	3	100	300	3	188	0.15	40	3	100	300	2	221	0.10	39
MRP 80	3	25	75	37	246	1.27	76	3	25	75	19	295	0.78	74	3	25	75	12	330	0.57	73	3	25	75	7	388	0.38	71
	3	30	90	31	313	1.50	68	3	30	90	16	375	0.92	67	3	30	90	10	420	0.67	65	3	30	90	6	493	0.45	64
	3	40	120	23	296	1.10	66	3	40	120	12	355	0.67	65	3	40	120	8	398	0.49	63	3	40	120	4	467	0.33	62
	3	50	150	19	272	0.82	65	3	50	150	9	326	0.50	64	3	50	150	6	365	0.37	62	3	50	150	3	429	0.24	61
	3	60	180	16	243	0.68	58	3	60	180	8	292	0.42	57	3	60	180	5	327	0.31	56	3	60	180	3	384	0.20	55
	3	70	210	13	245	0.64	53	3	70	210	7	294	0.39	52	3	70	210	4	329	0.29	51	3	70	210	2	387	0.19	50
	3	80	240	12	234	0.57	50	3	80	240	6	281	0.35	49	3	80	240	4	315	0.26	48	3	80	240	2	369	0.17	47
	3	100	300	9	207	0.42	48	3	100	300	5	248	0.26	48	3	100	300	3	278	0.19	47	3	100	300	2	326	0.12	46
MRP 100	3	25	75	37	438	2.32	74	3	25	75	19	525	1.42	72	3	25	75	12	588	1.04	71	3	25	75	7	690	0.69	69
	3	30	90	31	547	2.52	71	3	30	90	16	656	1.54	69	3	30	90	10	735	1.13	68	3	30	90	6	863	0.75	67
	3	40	120	23	524	1.94	66	3	40	120	12	629	1.19	65	3	40	120	8	704	0.87	63	3	40	120	4	827	0.58	62
	3	50	150	19	503	1.56	63	3	50	150	9	603	0.95	62	3	50	150	6	675	0.70	61	3	50	150	3	793	0.47	59
	3	60	180	16	480	1.34	58	3	60	180	8	576	0.82	57	3	60	180	5	645	0.60	56	3	60	180	3	757	0.40	55
	3	80	240	12	415	0.89	57	3	80	240	6	498	0.54	56	3	80	240	4	558	0.40	55	3	80	240	2	655	0.27	54
	3	100	300	9	372	0.78	47	3	100	300	5	446	0.48	46	3	100	300	3	500	0.35	45	3	100	300	2	586	0.23	44
MRP 120	3	25	75	37	688	3.52	77	3	25	75	19	826	2.15	75	3	25	75	12	925	1.58	74	3	25	75	7	1086	1.05	72
	3	30	90	31	885	3.97	73	3	30	90	16	1062	2.43	71	3	30	90	10	1189	1.78	70	3	30	90	6	1396	1.19	68
	3	40	120	23	831	3.04	67	3	40	120	12	997	1.86	66	3	40	120	8	1117	1.37	64	3	40	120	4	1311	0.91	63
	3	50	150	19	765	2.30	65	3	50	150	9	918	1.41	64	3	50	150	6	1028	1.04	62	3	50	150	3	1207	0.69	61
	3	60	180	16	743	2.05	59	3	60	180	8	892	1.25	58	3	60	180	5	999	0.92	57	3	60	180	3	1173	0.61	56
	3	80	240	12	699	1.38	62	3	80	240	6	839	0.84	61	3	80	240	4	940	0.62	60	3	80	240	2	1103	0.41	58
	3	100	300	9	590	1.04	55	3	100	300	5	708	0.64	54	3	100	300	3	793	0.47	53	3	100	300	2	931	0.31	52
MRP 150	3	25	75	37	1169	6.05	76	3	25	75	19	1403	3.70	74	3	25	75	12	1571	2.72	73	3	25	75	7	1845	1.81	71
	3	30	90	31	1618	6.88	77	3	30	90	16	1941	4.21	75	3	30	90	10	2174	3.10	74	3	30	90	6	2552	2.06	72
	3	40	120	23	1683	5.73	72	3	40	120	12	2019	3.51	70	3	40	120	8	2261	2.58	69	3	40	120	4	2655	1.72	68
	3	50	150	19	1464	4.05	71	3	50	150	9	1757	2.48	69	3	50	150	6	1968	1.82	68	3	50	150	3	2310	1.21	67
	3	60	180	16	1377	3.45	65	3	60	180	8	1652	2.11	64	3	60	180	5	1850	1.55	62	3	60	180	3	2172	1.03	61
	3	80	240	12	1366	2.82	59	3	80	240	6	1639	1.73	58	3	80	240	4	1836	1.27	57	3	80	240	2	2155	0.84	56
	3	100	300	9	1258	2.15	57	3	100	300	5	1509	1.32	56	3	100	300	3	1690	0.97	55	3	100	300	2	1984	0.64	54
MRP 180	3	25	75	37	1989	10.16	77	3	25	75	19	2387	6.22	75	3	25	75	12	2673	4.57	74	3	25	75	7	3139	3.04	72
	3	30	90	31	2481	10.97	74	3	30	90	16	2977	6.72	72	3	30	90	10	3334	4.93	71	3	30	90	6	3914	3.28	69
	3	40	120	23	2427	8.38	71	3	40	120	12	2912	5.13	69	3	40	120	8	3261	3.77	68	3	40	120	4	3829	2.51	67
	3	50	150	19	2317	6.87	66	3	50	150	9	2780	4.21	65	3	50	150	6	3114	3.09	63	3	50	150	3	3655	2.06	62
	3	60	180	16	2295	6.03	62	3	60	180	8	2754	3.69	61	3	60	180	5	3084	2.71	60	3	60	180	3	3621	1.80	58
	3	80	240	12	2076	4.29	59	3	80	240	6	2491	2.63	58	3	80	240	4	2790	1.93	57	3	80	240	2	3275	1.28	56
	3	100	300	9	2054	3.45	58	3	100	300	5	2465	2.11	57	3	100	300	3	2761	1.55	56	3	100	300	2	3241	1.03	55

7.3 Table of Rated Data RT/MRT ..x.. Combinations

n_1=1400 [rpm]							
Type [–]	i_1 [–]	i_2 [–]	i [–]	n_2 [rpm]	Mk_2 [Nm]	P_{1mot} * [kW]	η_d [%]
(M)RT 30×30	5	30	150	9.33	28	0.09	46
	7.5	30	225	6.22	28	0.09	44
	10	30	300	4.67	30	0.09	43
	12.5	30	375	3.73	30	0.09	39
	15	30	450	3.11	30	0.09	38
	20	30	600	2.33	32	0.09	35
	25	30	750	1.87	32	0.09	31
	30	30	900	1.56	32	0.09	29
	40	30	1200	1.17	32	0.09	26
	50	30	1500	0.93	30	0.09	24
	60	30	1800	0.78	30	0.09	19
	70	30	2100	0.67	30	0.09	18
	80	30	2400	0.58	30	0.09	17
	60	50	3000	0.47	25	0.09	18
	70	50	3500	0.40	25	0.09	14
	80	50	4000	0.35	25	0.09	13
	100	80	8000	0.18	13	0.09	12
	100	100	10000	0.14	11	0.09	8
(M)RT 30×40	5	30	150	9.33	60	0.12	52
	7.5	30	225	6.22	60	0.12	50
	10	30	300	4.67	60	0.09	49
	12.5	30	375	3.73	60	0.09	44
	15	30	450	3.11	60	0.09	43
	20	30	600	2.33	60	0.09	40
	25	30	750	1.87	60	0.09	36
	30	30	900	1.56	60	0.09	33
	40	30	1200	1.17	60	0.09	29
	50	30	1500	0.93	60	0.09	27
	60	30	1800	0.78	60	0.09	22
	70	30	2100	0.67	60	0.09	20
	80	30	2400	0.58	60	0.09	19
	60	50	3000	0.47	60	0.09	18
	70	50	3500	0.40	60	0.09	16
	80	50	4000	0.35	60	0.09	15
	100	80	8000	0.18	50	0.09	10
	100	100	10000	0.14	40	0.09	9
(M)RT 30×50	5	30	150	9.33	100	0.18	54
	7.5	30	225	6.22	100	0.12	51
	10	30	300	4.67	100	0.12	50
	12.5	30	375	3.73	100	0.12	46
	15	30	450	3.11	100	0.12	45
	20	30	600	2.33	100	0.12	41
	25	30	750	1.87	100	0.12	37
	30	30	900	1.56	100	0.12	34
	40	30	1200	1.17	100	0.12	30
	50	30	1500	0.93	100	0.09	28
	60	30	1800	0.78	100	0.09	22
	70	30	2100	0.67	100	0.09	21
	80	30	2400	0.58	100	0.09	20
	60	50	3000	0.47	95	0.09	18
	70	50	3500	0.40	95	0.09	17
	80	50	4000	0.35	95	0.09	16
	100	80	8000	0.18	80	0.09	12
	100	100	10000	0.14	60	0.09	11
(M)RT 40×50	5	30	150	9.33	100	0.18	54
	7.5	30	225	6.22	100	0.12	53
	10	30	300	4.67	100	0.12	51
	12.5	30	375	3.73	100	0.12	49
	15	30	450	3.11	100	0.12	48
	20	30	600	2.33	100	0.12	44
	25	30	750	1.87	100	0.12	42
	30	30	900	1.56	100	0.12	38
	40	30	1200	1.17	100	0.12	34
	50	30	1500	0.93	100	0.12	32
	60	30	1800	0.78	100	0.12	28
	70	30	2100	0.67	100	0.12	25
	80	30	2400	0.58	100	0.09	22
	60	50	3000	0.47	95	0.09	23
	70	50	3500	0.40	95	0.09	20
	80	50	4000	0.35	95	0.09	18
	100	80	8000	0.18	80	0.09	14
	100	100	10000	0.14	60	0.09	13
(M)RT 40×60	5	30	150	9.33	200	0.25	56
	7.5	30	225	6.22	200	0.25	55
	10	30	300	4.67	200	0.18	52
	12.5	30	375	3.73	200	0.18	51
	15	30	450	3.11	210	0.18	49

n_1=900 [rpm]							
Type [–]	i_1 [–]	i_2 [–]	i [–]	n_2 [rpm]	Mk_2 [Nm]	P_{1mot} * [kW]	η_d [%]
(M)RT 30×30	5	30	150	6.00	29	0.09	45
	7.5	30	225	4.00	29	0.09	43
	10	30	300	3.00	31	0.09	42
	12.5	30	375	2.40	31	0.09	38
	15	30	450	2.00	31	0.09	37
	20	30	600	1.50	33	0.09	34
	25	30	750	1.20	33	0.09	30
	30	30	900	1.00	33	0.09	28
	40	30	1200	0.75	33	0.09	25
	50	30	1500	0.60	31	0.09	23
	60	30	1800	0.50	31	0.09	18
	70	30	2100	0.43	31	0.09	17
	80	30	2400	0.38	31	0.09	16
	60	50	3000	0.30	26	0.09	17
	70	50	3500	0.26	26	0.09	13
	80	50	4000	0.23	26	0.09	12
	100	80	8000	0.11	14	0.09	11
	100	100	10000	0.09	12	0.09	7
(M)RT 30×40	5	30	150	6.00	63	0.09	51
	7.5	30	225	4.00	63	0.09	49
	10	30	300	3.00	63	0.09	48
	12.5	30	375	2.40	63	0.09	43
	15	30	450	2.00	63	0.09	42
	20	30	600	1.50	63	0.09	39
	25	30	750	1.20	63	0.09	35
	30	30	900	1.00	63	0.09	32
	40	30	1200	0.75	63	0.09	28
	50	30	1500	0.60	63	0.09	26
	60	30	1800	0.50	63	0.09	21
	70	30	2100	0.43	63	0.09	19
	80	30	2400	0.38	63	0.09	18
	60	50	3000	0.30	63	0.09	17
	70	50	3500	0.26	63	0.09	15
	80	50	4000	0.23	63	0.09	14
	100	80	8000	0.11	53	0.09	9
	100	100	10000	0.09	43	0.09	8
(M)RT 30×50	5	30	150	6.00	105	0.12	53
	7.5	30	225	4.00	105	0.12	50
	10	30	300	3.00	105	0.12	49
	12.5	30	375	2.40	105	0.12	45
	15	30	450	2.00	105	0.12	44
	20	30	600	1.50	105	0.12	40
	25	30	750	1.20	105	0.12	36
	30	30	900	1.00	105	0.12	33
	40	30	1200	0.75	105	0.09	29
	50	30	1500	0.60	105	0.09	27
	60	30	1800	0.50	105	0.09	21
	70	30	2100	0.43	105	0.09	20
	80	30	2400	0.38	105	0.09	19
	60	50	3000	0.30	100	0.09	17
	70	50	3500	0.26	100	0.09	16
	80	50	4000	0.23	100	0.09	15
	100	80	8000	0.11	85	0.09	11
	100	100	10000	0.09	65	0.09	10
(M)RT 40×50	5	30	150	6.00	105	0.12	53
	7.5	30	225	4.00	105	0.12	52
	10	30	300	3.00	105	0.12	50
	12.5	30	375	2.40	105	0.12	48
	15	30	450	2.00	105	0.12	47
	20	30	600	1.50	105	0.09	43
	25	30	750	1.20	105	0.09	41
	30	30	900	1.00	105	0.09	37
	40	30	1200	0.75	105	0.09	33
	50	30	1500	0.60	105	0.09	31
	60	30	1800	0.50	105	0.09	27
	70	30	2100	0.43	105	0.09	24
	80	30	2400	0.38	105	0.09	21
	60	50	3000	0.30	100	0.09	22
	70	50	3500	0.26	100	0.09	19
	80	50	4000	0.23	100	0.09	17
	100	80	8000	0.11	85	0.09	13
	100	100	10000	0.09	65	0.09	12
(M)RT 40×60	5	30	150	6.00	205	0.25	55
	7.5	30	225	4.00	205	0.18	54
	10	30	300	3.00	205	0.12	51
	12.5	30	375	2.40	205	0.12	50
	15	30	450	2.00	215	0.12	48

* recommended motor power

7.3 Table of Rated Data RT/MRT ..x.. Combinations

n_1=1400 [rpm]							
Type [–]	i_1 [–]	i_2 [–]	i [–]	n_2 [rpm]	Mk_2 [Nm]	P_{1mot} * [kW]	η_d [%]
(M)RT 40×60	20	30	600	2.33	210	0.12	46
	25	30	750	1.87	210	0.12	43
	30	30	900	1.56	210	0.12	39
	40	30	1200	1.17	210	0.12	35
	50	30	1500	0.93	210	0.12	33
	60	30	1800	0.78	210	0.12	29
	70	30	2100	0.67	210	0.12	26
	80	30	2400	0.58	210	0.12	22
	60	50	3000	0.47	195	0.09	23
	70	50	3500	0.40	195	0.09	20
	80	50	4000	0.35	195	0.09	18
	100	80	8000	0.18	180	0.09	16
	100	100	10000	0.14	150	0.09	14
(M)RT 40×70	5	30	150	9.33	280	0.37	56
	7.5	30	225	6.22	280	0.25	55
	10	30	300	4.67	280	0.25	53
	12.5	30	375	3.73	290	0.18	51
	15	30	450	3.11	290	0.18	50
	20	30	600	2.33	290	0.18	46
	25	30	750	1.87	290	0.12	44
	30	30	900	1.56	290	0.12	40
	40	30	1200	1.17	290	0.12	36
	50	30	1500	0.93	290	0.12	33
	60	30	1800	0.78	290	0.12	30
	70	30	2100	0.67	290	0.12	26
	80	30	2400	0.58	290	0.12	23
	60	50	3000	0.47	280	0.09	25
	70	50	3500	0.40	280	0.09	22
	80	50	4000	0.35	280	0.09	19
	100	80	8000	0.18	270	0.09	13
	100	100	10000	0.14	200	0.09	12
(M)RT 50×70	5	30	150	9.33	280	0.37	58
	7.5	30	225	6.22	280	0.37	55
	10	30	300	4.67	280	0.25	54
	12.5	30	375	3.73	290	0.25	52
	15	30	450	3.11	290	0.18	51
	20	30	600	2.33	290	0.18	49
	25	30	750	1.87	290	0.18	45
	30	30	900	1.56	290	0.18	41
	40	30	1200	1.17	290	0.12	39
	50	30	1500	0.93	290	0.12	35
	60	30	1800	0.78	290	0.12	31
	70	30	2100	0.67	290	0.12	29
	80	30	2400	0.58	290	0.12	28
	60	50	3000	0.47	280	0.12	27
	70	50	3500	0.40	280	0.12	25
	80	50	4000	0.35	280	0.12	24
	100	80	8000	0.18	270	0.09	15
	100	100	10000	0.14	200	0.09	13
(M)RT 50×80	5	30	150	9.33	460	0.75	57
	7.5	30	225	6.22	460	0.55	54
	10	30	300	4.67	460	0.37	53
	12.5	30	375	3.73	480	0.37	51
	15	30	450	3.11	480	0.37	49
	20	30	600	2.33	480	0.25	47
	25	30	750	1.87	480	0.25	43
	30	30	900	1.56	480	0.18	40
	40	30	1200	1.17	480	0.18	38
	50	30	1500	0.93	480	0.18	34
	60	30	1800	0.78	480	0.18	30
	70	30	2100	0.67	480	0.18	29
	80	30	2400	0.58	480	0.12	27
	60	50	3000	0.47	460	0.12	27
	70	50	3500	0.40	460	0.12	25
	80	50	4000	0.35	460	0.12	24
	100	80	8000	0.18	400	0.12	16
	100	100	10000	0.14	350	0.12	15
(M)RT 70×100	5	30	150	9.33	800	1.10	60
	7.5	30	225	6.22	800	0.75	58
	10	30	300	4.67	800	0.75	57
	12.5	30	375	3.73	850	0.55	55
	15	30	450	3.11	850	0.55	53
	20	30	600	2.33	850	0.55	50
	25	30	750	1.87	850	0.37	48
	30	30	900	1.56	850	0.37	44
	40	30	1200	1.17	850	0.37	40

n_1=900 [rpm]							
Type [–]	i_1 [–]	i_2 [–]	i [–]	n_2 [rpm]	Mk_2 [Nm]	P_{1mot} * [kW]	η_d [%]
(M)RT 40×60	20	30	600	1.50	215	0.12	45
	25	30	750	1.20	215	0.12	42
	30	30	900	1.00	215	0.12	38
	40	30	1200	0.75	215	0.12	34
	50	30	1500	0.60	215	0.12	32
	60	30	1800	0.50	215	0.09	28
	70	30	2100	0.43	215	0.09	25
	80	30	2400	0.38	215	0.09	21
	60	50	3000	0.30	200	0.09	22
	70	50	3500	0.26	200	0.09	19
	80	50	4000	0.23	200	0.09	17
	100	80	8000	0.11	185	0.09	15
	100	100	10000	0.09	155	0.09	13
(M)RT 40×70	5	30	150	6.00	290	0.25	55
	7.5	30	225	4.00	290	0.25	54
	10	30	300	3.00	290	0.18	52
	12.5	30	375	2.40	300	0.12	50
	15	30	450	2.00	300	0.12	49
	20	30	600	1.50	300	0.12	45
	25	30	750	1.20	300	0.12	43
	30	30	900	1.00	300	0.12	39
	40	30	1200	0.75	300	0.09	35
	50	30	1500	0.60	300	0.09	32
	60	30	1800	0.50	300	0.09	29
	70	30	2100	0.43	300	0.09	25
	80	30	2400	0.38	300	0.09	22
	60	50	3000	0.30	290	0.09	24
	70	50	3500	0.26	290	0.09	21
	80	50	4000	0.23	290	0.09	18
	100	80	8000	0.11	280	0.09	12
	100	100	10000	0.09	210	0.09	11
(M)RT 50×70	5	30	150	6.00	290	0.25	57
	7.5	30	225	4.00	290	0.25	54
	10	30	300	3.00	290	0.18	53
	12.5	30	375	2.40	300	0.18	51
	15	30	450	2.00	300	0.18	50
	20	30	600	1.50	300	0.12	48
	25	30	750	1.20	300	0.12	44
	30	30	900	1.00	300	0.12	40
	40	30	1200	0.75	300	0.12	38
	50	30	1500	0.60	300	0.12	34
	60	30	1800	0.50	300	0.12	30
	70	30	2100	0.43	300	0.12	28
	80	30	2400	0.38	300	0.12	27
	60	50	3000	0.30	290	0.12	26
	70	50	3500	0.26	290	0.09	24
	80	50	4000	0.23	290	0.09	23
	100	80	8000	0.11	280	0.09	14
	100	100	10000	0.09	210	0.09	12
(M)RT 50×80	5	30	150	6.00	480	0.37	56
	7.5	30	225	4.00	480	0.37	53
	10	30	300	3.00	480	0.25	52
	12.5	30	375	2.40	500	0.25	50
	15	30	450	2.00	500	0.25	48
	20	30	600	1.50	500	0.18	46
	25	30	750	1.20	500	0.18	42
	30	30	900	1.00	500	0.18	39
	40	30	1200	0.75	500	0.18	37
	50	30	1500	0.60	500	0.12	33
	60	30	1800	0.50	500	0.12	29
	70	30	2100	0.43	500	0.12	28
	80	30	2400	0.38	500	0.12	26
	60	50	3000	0.30	480	0.12	26
	70	50	3500	0.26	480	0.12	24
	80	50	4000	0.23	480	0.12	23
	100	80	8000	0.11	420	0.09	15
	100	100	10000	0.09	370	0.09	14
(M)RT 70×100	5	30	150	6.00	830	1.10	59
	7.5	30	225	4.00	830	0.75	57
	10	30	300	3.00	830	0.55	56
	12.5	30	375	2.40	880	0.55	54
	15	30	450	2.00	880	0.37	52
	20	30	600	1.50	880	0.37	49
	25	30	750	1.20	880	0.25	47
	30	30	900	1.00	880	0.25	43
	40	30	1200	0.75	880	0.25	39

* recommended motor power

7.3 Table of Rated Data RT/MRT ..x.. Combinations

n_1=1400 [rpm]							
Type [–]	i_1 [–]	i_2 [–]	i [–]	n_2 [rpm]	Mk_2 [Nm]	P_{1mot} * [kW]	η_d [%]
(M)RT 70×100	50	30	1500	0.93	850	0.25	38
	60	30	1800	0.78	850	0.25	33
	70	30	2100	0.67	850	0.25	29
	80	30	2400	0.58	850	0.25	27
	60	50	3000	0.47	830	0.25	27
	70	50	3500	0.40	830	0.25	24
	80	50	4000	0.35	830	0.25	22
	100	80	8000	0.18	800	0.12	17
	100	100	10000	0.14	700	0.12	14
(M)RT 80x100	5	30	150	9.33	800	1.10	61
	7.5	30	225	6.22	800	1.10	59
	10	30	300	4.67	800	0.75	57
	12.5	30	375	3.73	850	0.75	55
	15	30	450	3.11	850	0.55	52
	20	30	600	2.33	850	0.55	51
	25	30	750	1.87	850	0.37	48
	30	30	900	1.56	850	0.37	43
	40	30	1200	1.17	850	0.37	40
	50	30	1500	0.93	850	0.25	38
	60	30	1800	0.78	850	0.25	34
	70	30	2100	0.67	850	0.25	30
	80	30	2400	0.58	850	0.25	29
	60	50	3000	0.47	830	0.25	28
	70	50	3500	0.40	830	0.25	25
	80	50	4000	0.35	830	0.25	24
	100	80	8000	0.18	800	0.18	20
	100	100	10000	0.14	700	0.18	16
(M)RT 80x120	5	30	150	9.33	1100	1.50	63
	7.5	30	225	6.22	1100	1.10	61
	10	30	300	4.67	1100	1.10	59
	12.5	30	375	3.73	1150	0.75	57
	15	30	450	3.11	1150	0.75	53
	20	30	600	2.33	1150	0.55	52
	25	30	750	1.87	1150	0.55	49
	30	30	900	1.56	1150	0.55	44
	40	30	1200	1.17	1150	0.37	42
	50	30	1500	0.93	1150	0.37	39
	60	30	1800	0.78	1150	0.37	35
	70	30	2100	0.67	1150	0.37	31
	80	30	2400	0.58	1150	0.37	29
	60	50	3000	0.47	1050	0.25	29
	70	50	3500	0.40	1050	0.25	26
	80	50	4000	0.35	1050	0.25	24
	100	80	8000	0.18	1000	0.25	22
	100	100	10000	0.14	950	0.25	19
(M)RT 100x150	7.5	30	225	6.22	2400	2.20	63
	10	30	300	4.67	2400	2.20	61
	12.5	30	375	3.73	2600	1.50	60
	15	30	450	3.11	2600	1.50	58
	20	30	600	2.33	2600	1.10	54
	25	30	750	1.87	2600	1.10	51
	30	30	900	1.56	2600	1.10	48
	40	30	1200	1.17	2600	0.75	44
	50	30	1500	0.93	2600	0.75	40
	60	30	1800	0.78	2600	0.55	37
	80	30	2400	0.58	2600	0.55	34
	60	50	3000	0.47	2300	0.55	29
	80	50	4000	0.35	2300	0.55	27
	100	80	8000	0.18	2300	0.37	21
	100	100	10000	0.14	2000	0.25	18
(M)RT 100x180	7.5	30	225	6.22	3900	4.00	61
	10	30	300	4.67	3900	3.00	58
	12.5	30	375	3.73	4000	3.00	58
	15	30	450	3.11	4000	2.20	55
	20	30	600	2.33	4000	2.20	52
	25	30	750	1.87	4000	1.50	49
	30	30	900	1.56	4000	1.50	46
	40	30	1200	1.17	4000	1.10	42
	50	30	1500	0.93	4000	1.10	39
	60	30	1800	0.78	4000	1.10	35
	80	30	2400	0.58	4000	0.75	33
	60	50	3000	0.47	3900	0.55	29
	80	50	4000	0.35	3900	0.55	27
	100	80	8000	0.18	3900	0.55	20
	100	100	10000	0.14	3500	0.37	19

n_1=900 [rpm]							
Type [–]	i_1 [–]	i_2 [–]	i [–]	n_2 [rpm]	Mk_2 [Nm]	P_{1mot} * [kW]	η_d [%]
(M)RT 70×100	50	30	1500	0.60	880	0.18	37
	60	30	1800	0.50	880	0.18	32
	70	30	2100	0.43	880	0.18	28
	80	30	2400	0.38	880	0.18	26
	60	50	3000	0.30	860	0.18	26
	70	50	3500	0.26	860	0.18	23
	80	50	4000	0.23	860	0.18	21
	100	80	8000	0.11	830	0.12	16
	100	100	10000	0.09	730	0.12	13
(M)RT 80x100	5	30	150	6.00	830	1.10	60
	7.5	30	225	4.00	830	0.75	58
	10	30	300	3.00	830	0.55	56
	12.5	30	375	2.40	880	0.55	54
	15	30	450	2.00	880	0.37	51
	20	30	600	1.50	880	0.37	50
	25	30	750	1.20	880	0.25	47
	30	30	900	1.00	880	0.25	42
	40	30	1200	0.75	880	0.25	39
	50	30	1500	0.60	880	0.25	37
	60	30	1800	0.50	880	0.25	33
	70	30	2100	0.43	880	0.25	29
	80	30	2400	0.38	880	0.25	28
	60	50	3000	0.30	860	0.18	27
	70	50	3500	0.26	860	0.18	24
	80	50	4000	0.23	860	0.18	23
	100	80	8000	0.11	830	0.18	19
	100	100	10000	0.09	730	0.18	15
(M)RT 80x120	5	30	150	6.00	1140	1.10	62
	7.5	30	225	4.00	1140	1.10	60
	10	30	300	3.00	1140	0.75	58
	12.5	30	375	2.40	1190	0.75	56
	15	30	450	2.00	1190	0.55	52
	20	30	600	1.50	1190	0.55	51
	25	30	750	1.20	1190	0.37	48
	30	30	900	1.00	1190	0.37	43
	40	30	1200	0.75	1190	0.37	41
	50	30	1500	0.60	1190	0.37	38
	60	30	1800	0.50	1190	0.37	34
	70	30	2100	0.43	1190	0.25	30
	80	30	2400	0.38	1190	0.25	28
	60	50	3000	0.30	1090	0.25	28
	70	50	3500	0.26	1090	0.25	25
	80	50	4000	0.23	1090	0.25	23
	100	80	8000	0.11	1040	0.25	21
	100	100	10000	0.09	990	0.25	18
(M)RT 100x150	7.5	30	225	4.00	2500	1.50	62
	10	30	300	3.00	2500	1.50	60
	12.5	30	375	2.40	2700	1.10	59
	15	30	450	2.00	2700	1.10	57
	20	30	600	1.50	2700	1.10	53
	25	30	750	1.20	2700	0.75	50
	30	30	900	1.00	2700	0.75	47
	40	30	1200	0.75	2700	0.55	43
	50	30	1500	0.60	2700	0.55	39
	60	30	1800	0.50	2700	0.55	36
	80	30	2400	0.38	2700	0.55	33
	60	50	3000	0.30	2400	0.55	28
	80	50	4000	0.23	2400	0.55	26
	100	80	8000	0.11	2400	0.37	20
	100	100	10000	0.09	2100	0.25	17
(M)RT 100x180	7.5	30	225	4.00	4050	3.00	60
	10	30	300	3.00	4050	2.20	57
	12.5	30	375	2.40	4150	2.20	57
	15	30	450	2.00	4150	1.50	54
	20	30	600	1.50	4150	1.50	51
	25	30	750	1.20	4150	1.10	48
	30	30	900	1.00	4150	1.10	45
	40	30	1200	0.75	4150	0.75	41
	50	30	1500	0.60	4150	0.75	38
	60	30	1800	0.50	4150	0.55	34
	80	30	2400	0.38	4150	0.55	32
	60	50	3000	0.30	4050	0.55	28
	80	50	4000	0.23	4050	0.55	26
	100	80	8000	0.11	4050	0.37	19
	100	100	10000	0.09	3650	0.37	18

* recommended motor power

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
P_1=0,09kW		n_1=2800 [rpm]			56-2p
140	20	5	3.1	MRT 30	F30S (65)
112	25	5	3.1	MRT 30	F30S (65)
93	30	6	3.1	MRT 30	F30S (65)
70	40	7	2.2	MRT 30	F30S (65)
56	50	8	1.7	MRT 30	F30S (65)
47	60	8	1.5	MRT 30	F30S (65)
40	70	10	1.2	MRT 30	F30S (65)
35	80	11	0.8	MRT 30	F30S (65)

P_1=0.09kW		n_1=1400 [rpm]			56-4p
140	10	5	3.3	MRT 30	F30S (65)
112	12.5	6	2.8	MRT 30	F30S (65)
93	15	7	2.4	MRT 30	F30S (65)
70	20	9	1.9	MRT 30	F30S (65)
56	25	10	1.8	MRT 30	F30S (65)
56	25	12	3.0	MRT 40	F40M (85)
47	30	12	1.8	MRT 30	F30S (65)
47	30	13	3.3	MRT 40	F40M (85)
35	40	14	1.3	MRT 30	F30S (65)
35	40	16	2.6	MRT 40	F40M (85)
28	50	17	1.0	MRT 30	F30S (65)
28	50	19	2.0	MRT 40	F40M (85)
23	60	17	1.0	MRT 30	F30S (65)
23	60	21	1.7	MRT 40	F40M (85)
20	70	18	0.8	MRT 30	F30S (65)
20	70	22	1.6	MRT 40	F40M (85)
18	80	23	1.3	MRT 40	F40M (85)
14	100	28	1.0	MRT 40	F40M (85)

P_1=0.09kW		n_1=900 [rpm]			63-6p
120	7.5	6	3.0	MRT 30	F30M (75)
90	10	8	2.4	MRT 30	F30M (75)
72	12.5	9	2.1	MRT 30	F30M (75)
60	15	11	1.7	MRT 30	F30M (75)
45	20	14	1.4	MRT 30	F30M (75)
45	20	15	3.0	MRT 40	F40S (75)
36	25	16	1.3	MRT 30	F30M (75)
36	25	18	2.2	MRT 40	F40S (75)
30	30	18	1.3	MRT 30	F30M (75)
30	30	20	2.4	MRT 40	F40S (75)
23	40	22	1.0	MRT 30	F30M (75)
23	40	24	1.9	MRT 40	F40S (75)
23	40	27	3.2	MRT 50	F50S (75)
18	50	25	0.8	MRT 30	F30M (75)
18	50	29	1.5	MRT 40	F40S (75)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	size [–]	Standard m. flange
18	50	31	2.5	MRT 50	F50S (75)
15	60	32	1.2	MRT 40	F40S (75)
15	60	34	2.2	MRT 50	F50S (75)
13	70	33	1.1	MRT 40	F40S (75)
13	70	38	1.9	MRT 50	F50S (75)
13	70	40	3.0	MRT 60	F60S (100)
11	80	34	1.0	MRT 40	F40S (75)
11	80	42	1.6	MRT 50	F50S (75)
11	80	45	2.6	MRT 60	F60S (100)
9	100	41	0.8	MRT 40	F40S (75)
9	100	47	1.4	MRT 50	F50S (75)
9	100	52	2.1	MRT 60	F60S (100)

P_1=0.09kW		n_1=2800 [rpm]			56-2p
37	75	16	2.4	MRP 40	F40L (100)
31	90	18	2.6	MRP 40	F40L (100)
23	120	22	2.1	MRP 40	F40L (100)
19	150	26	1.7	MRP 40	F40L (100)
16	180	28	1.4	MRP 40	F40L (100)
13	210	30	1.3	MRP 40	F40L (100)
12	240	30	1.1	MRP 40	F40L (100)
9	300	37	0.8	MRP 40	F40L (100)

P_1=0.09kW		n_1=1400 [rpm]			56-4p
19	75	31	1.5	MRP 40	F40L (100)
19	75	32	2.6	MRP 50	F50L (100)
16	90	35	1.6	MRP 40	F40L (100)
16	90	36	2.9	MRP 50	F50L (100)
12	120	43	1.3	MRP 40	F40L (100)
12	120	47	2.2	MRP 50	F50L (100)
9	150	51	1.0	MRP 40	F40L (100)
9	150	53	1.7	MRP 50	F50L (100)
8	180	56	0.8	MRP 40	F40L (100)
8	180	59	1.5	MRP 50	F50L (100)
7	210	59	0.8	MRP 40	F40L (100)
7	210	66	1.3	MRP 50	F50L (100)
6	240	73	1.1	MRP 50	F50L (100)
5	300	82	0.9	MRP 50	F50L (100)

P_1=0.09kW		n_1=900 [rpm]			63-6p
12	75	48	1.1	MRP 40	F40L (100)
12	75	49	1.9	MRP 50	F50L (100)
10	90	54	1.2	MRP 40	F40L (100)
10	90	55	2.1	MRP 50	F50L (100)
8	120	65	0.9	MRP 40	F40L (100)
8	120	71	2.7	MRP 60	F60M (115)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft prior to alterations*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
8	120	71	1.6	MRP 50	F50L (100)
6	150	77	0.8	MRP 40	F40L (100)
6	150	80	2.2	MRP 60	F60M (115)
6	150	81	1.2	MRP 50	F50L (100)
5	180	90	1.1	MRP 50	F50L (100)
5	180	93	1.8	MRP 60	F60M (115)
4	210	101	0.9	MRP 50	F50L (100)
4	210	106	1.5	MRP 60	F60M (115)
4	240	111	0.8	MRP 50	F50L (100)
4	240	119	1.3	MRP 60	F60M (115)
3	300	136	1.0	MRP 60	F60M (115)

P_1=0.12kW		n_1=2800 [rpm]			56-2p
224	12.5	4	3.5	MRT 30	F30S (65)
187	15	5	2.9	MRT 30	F30S (65)
140	20	6	2.3	MRT 30	F30S (65)
112	25	7	2.3	MRT 30	F30S (65)
93	30	8	2.3	MRT 30	F30S (65)
70	40	10	1.7	MRT 30	F30S (65)
56	50	11	1.2	MRT 30	F30S (65)
47	60	11	1.2	MRT 30	F30S (65)

P_1=0.12kW		n_1=1400 [rpm]			63-4p
187	7.5	5	3.1	MRT 30	F30M (75)
140	10	7	2.5	MRT 30	F30M (75)
112	12.5	8	2.1	MRT 30	F30M (75)
93	15	10	1.8	MRT 30	F30M (75)
70	20	12	1.4	MRT 30	F30M (75)
70	20	13	3.0	MRT 40	F40S (75)
56	25	14	1.4	MRT 30	F30M (75)
56	25	16	2.3	MRT 40	F40S (75)
47	30	15	1.4	MRT 30	F30M (75)
47	30	17	2.5	MRT 40	F40S (75)
35	40	19	1.0	MRT 30	F30M (75)
35	40	21	1.9	MRT 40	F40S (75)
35	40	24	3.3	MRT 50	F50S (75)
28	50	22	0.8	MRT 30	F30M (75)
28	50	25	1.5	MRT 40	F40S (75)
28	50	27	2.6	MRT 50	F50S (75)
23	60	28	1.3	MRT 40	F40S (75)
23	60	29	2.3	MRT 50	F50S (75)
20	70	29	1.2	MRT 40	F40S (75)
20	70	33	1.9	MRT 50	F50S (75)
20	70	35	3.1	MRT 60	F60S (100)
18	80	30	1.0	MRT 40	F40S (75)
18	80	37	1.6	MRT 50	F50S (75)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
18	80	40	2.6	MRT 60	F60S (100)
14	100	37	0.8	MRT 40	F40S (75)
14	100	38	3.3	MRT 70	F70S (100)
14	100	42	1.4	MRT 50	F50S (75)
14	100	46	2.1	MRT 60	F60S (100)

P_1=0.12kW		n_1=900 [rpm]			63-6p
180	5	5	3.3	MRT 30	F30M (75)
120	7.5	8	2.3	MRT 30	F30M (75)
90	10	11	1.8	MRT 30	F30M (75)
72	12.5	12	1.6	MRT 30	F30M (75)
72	12.5	13	3.3	MRT 40	F40S (75)
60	15	15	1.3	MRT 30	F30M (75)
60	15	16	2.9	MRT 40	F40S (75)
45	20	18	1.0	MRT 30	F30M (75)
45	20	20	2.2	MRT 40	F40S (75)
36	25	21	1.0	MRT 30	F30M (75)
36	25	24	1.7	MRT 40	F40S (75)
36	25	25	2.9	MRT 50	F50S (75)
30	30	24	1.0	MRT 30	F30M (75)
30	30	27	1.8	MRT 40	F40S (75)
30	30	28	3.2	MRT 50	F50S (75)
23	40	33	1.4	MRT 40	F40S (75)
23	40	36	2.4	MRT 50	F50S (75)
18	50	39	1.1	MRT 40	F40S (75)
18	50	40	3.4	MRT 60	F60S (100)
18	50	41	1.9	MRT 50	F50S (75)
15	60	43	0.9	MRT 40	F40S (75)
15	60	45	1.7	MRT 50	F50S (75)
15	60	47	2.7	MRT 60	F60S (100)
13	70	45	0.9	MRT 40	F40S (75)
13	70	50	3.4	MRT 70	F60S (100)
13	70	51	1.4	MRT 50	F50S (75)
13	70	53	2.3	MRT 60	F60S (100)
11	80	45	0.8	MRT 40	F40S (75)
11	80	52	2.8	MRT 70	F60S (100)
11	80	56	1.2	MRT 50	F50S (75)
11	80	60	1.9	MRT 60	F60S (100)
9	100	57	2.5	MRT 70	F60S (100)
9	100	62	1.0	MRT 50	F50S (75)
9	100	69	1.6	MRT 60	F60S (100)

P_1=0.12kW		n_1=2800 [rpm]			56-2p
37	75	21	1.8	MRP 40	F40L (100)
37	75	22	3.2	MRP 50	F50L (100)
31	90	24	2.0	MRP 40	F40L (100)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	size [–]	Standard m. flange
31	90	25	3.5	MRP 50	F50L (100)
23	120	29	1.6	MRP 40	F40L (100)
23	120	32	2.6	MRP 50	F50L (100)
19	150	35	1.3	MRP 40	F40L (100)
19	150	36	2.1	MRP 50	F50L (100)
16	180	38	1.0	MRP 40	F40L (100)
16	180	40	1.8	MRP 50	F50L (100)
13	210	40	0.9	MRP 40	F40L (100)
13	210	45	1.5	MRP 50	F50L (100)
12	240	40	0.8	MRP 40	F40L (100)
12	240	49	1.3	MRP 50	F50L (100)
9	300	56	1.1	MRP 50	F50L (100)

P_1=0.12kW		n_1=1400 [rpm]			63-4p
19	75	42	1.1	MRP 40	F40L (100)
19	75	43	1.9	MRP 50	F50L (100)
16	90	47	1.2	MRP 40	F40L (100)
16	90	48	2.2	MRP 50	F50L (100)
12	120	57	0.9	MRP 40	F40L (100)
12	120	63	2.7	MRP 60	F60M (115)
12	120	63	1.6	MRP 50	F50L (100)
9	150	68	0.8	MRP 40	F40L (100)
9	150	70	2.3	MRP 60	F60M (115)
9	150	71	1.3	MRP 50	F50L (100)
9	150	77	3.1	MRP 70	F70M (115)
8	180	78	1.1	MRP 50	F50L (100)
8	180	81	1.8	MRP 60	F60M (115)
8	180	83	2.6	MRP 70	F70M (115)
7	210	87	2.3	MRP 70	F70M (115)
7	210	88	0.9	MRP 50	F50L (100)
7	210	93	1.5	MRP 60	F60M (115)
6	240	90	1.9	MRP 70	F70M (115)
6	240	97	0.8	MRP 50	F50L (100)
6	240	105	1.3	MRP 60	F60M (115)
5	300	100	1.7	MRP 70	F70M (115)
5	300	119	1.1	MRP 60	F60M (115)

P_1=0.12kW		n_1=900 [rpm]			63-6p
40	22.5	22	2.5	MRP 40	F40L (100)
30	30	28	2.1	MRP 40	F40L (100)
24	37.5	35	1.7	MRP 40	F40L (100)
24	37.5	36	2.8	MRP 50	F50L (100)
20	45	42	1.4	MRP 40	F40L (100)
20	45	43	2.6	MRP 50	F50L (100)
15	60	53	1.1	MRP 40	F40L (100)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	size [–]	Standard m. flange
15	60	55	2.0	MRP 50	F50L (100)
15	60	55	3.0	MRP 60	F60M (115)
12	75	64	0.8	MRP 40	F40L (100)
12	75	65	1.4	MRP 50	F50L (100)
12	75	66	2.8	MRP 60	F60M (115)
12	75	68	3.5	MRP 70	F70M (115)
10	90	71	0.9	MRP 40	F40L (100)
10	90	74	1.6	MRP 50	F50L (100)
10	90	76	2.7	MRP 60	F60M (115)
10	90	77	3.7	MRP 70	F70M (115)
8	120	95	1.2	MRP 50	F50L (100)
8	120	95	2.0	MRP 60	F60M (115)
8	120	97	2.7	MRP 70	F70M (115)
6	150	107	1.7	MRP 60	F60M (115)
6	150	108	0.9	MRP 50	F50L (100)
6	150	117	2.3	MRP 70	F70M (115)
5	180	119	0.8	MRP 50	F50L (100)
5	180	124	1.3	MRP 60	F60M (115)
5	180	126	1.9	MRP 70	F70M (115)
4	210	132	1.7	MRP 70	F70M (115)
4	210	142	1.1	MRP 60	F60M (115)
4	240	137	1.4	MRP 70	F70M (115)
4	240	159	1.0	MRP 60	F60M (115)
3	300	153	1.2	MRP 70	F70M (115)
3	300	181	0.8	MRP 60	F60M (115)

P_1=0.18kW		n_1=2800 [rpm]			63-2p
373	7.5	4	3.3	MRT 30	F30M (75)
280	10	5	2.7	MRT 30	F30M (75)
224	12.5	6	2.3	MRT 30	F30M (75)
187	15	7	1.9	MRT 30	F30M (75)
140	20	9	1.5	MRT 30	F30M (75)
140	20	10	3.4	MRT 40	F40S (75)
112	25	10	1.5	MRT 30	F30M (75)
112	25	12	2.5	MRT 40	F40S (75)
93	30	12	1.5	MRT 30	F30M (75)
93	30	13	2.7	MRT 40	F40S (75)
70	40	14	1.1	MRT 30	F30M (75)
70	40	16	2.1	MRT 40	F40S (75)
56	50	19	1.7	MRT 40	F40S (75)
56	50	20	2.9	MRT 50	F50S (75)
47	60	21	1.4	MRT 40	F40S (75)
47	60	22	2.5	MRT 50	F50S (75)
40	70	22	1.3	MRT 40	F40S (75)
40	70	25	2.1	MRT 50	F50S (75)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft prior to alterations*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	size [–]	Standard m. flange
35	80	24	1.1	MRT 40	F40S (75)
35	80	29	1.7	MRT 50	F50S (75)
28	100	33	1.5	MRT 50	F50S (75)

P_1=0.18kW		n_1=1400 [rpm]			63-4p
280	5	5	3.0	MRT 30	F30M (75)
187	7.5	8	2.1	MRT 30	F30M (75)
140	10	10	1.6	MRT 30	F30M (75)
112	12.5	12	1.4	MRT 30	F30M (75)
112	12.5	13	3.0	MRT 40	F40S (75)
93	15	14	1.2	MRT 30	F30M (75)
93	15	15	2.6	MRT 40	F40S (75)
70	20	18	0.9	MRT 30	F30M (75)
70	20	19	2.0	MRT 40	F40S (75)
56	25	21	0.9	MRT 30	F30M (75)
56	25	24	2.7	MRT 50	F50S (75)
56	25	24	1.5	MRT 40	F40S (75)
47	30	23	0.9	MRT 30	F30M (75)
47	30	26	1.6	MRT 40	F40S (75)
47	30	27	2.9	MRT 50	F50S (75)
35	40	32	1.3	MRT 40	F40S (75)
35	40	35	2.2	MRT 50	F50S (75)
28	50	38	1.0	MRT 40	F40S (75)
28	50	39	3.1	MRT 60	F60S (100)
28	50	40	1.7	MRT 50	F50S (75)
23	60	42	0.9	MRT 40	F40S (75)
23	60	44	1.5	MRT 50	F50S (75)
23	60	46	2.5	MRT 60	F60S (100)
20	70	44	0.8	MRT 40	F40S (75)
20	70	49	3.1	MRT 70	F70S (100)
20	70	50	1.3	MRT 50	F50S (75)
20	70	52	2.1	MRT 60	F60S (100)
18	80	52	2.5	MRT 70	F70S (100)
18	80	56	1.1	MRT 50	F50S (75)
18	80	60	1.7	MRT 60	F60S (100)
14	100	58	2.2	MRT 70	F70S (100)
14	100	63	0.9	MRT 50	F50S (75)
14	100	68	2.8	MRT 80	F80S (115)
14	100	69	1.4	MRT 60	F60S (100)

P_1=0.18kW		n_1=900 [rpm]			71-6p
120	7.5	12	3.3	MRT 40	F40M (85)
90	10	16	2.9	MRT 40	F40M (85)
72	12.5	20	2.2	MRT 40	F40M (85)
60	15	23	1.9	MRT 40	F40M (85)
60	15	24	3.5	MRT 50	F50M (85)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	size [–]	Standard m. flange
45	20	30	1.5	MRT 40	F40M (85)
45	20	31	2.6	MRT 50	F50M (85)
36	25	36	1.1	MRT 40	F40M (85)
36	25	37	1.9	MRT 50	F50M (85)
30	30	40	1.2	MRT 40	F40M (85)
30	30	42	2.1	MRT 50	F50M (85)
23	40	49	0.9	MRT 40	F40M (85)
23	40	53	2.7	MRT 60	F60M (115)
23	40	54	1.6	MRT 50	F50M (85)
18	50	58	0.8	MRT 40	F40M (85)
18	50	60	2.3	MRT 60	F60M (115)
18	50	61	1.3	MRT 50	F50M (85)
18	50	66	3.1	MRT 70	F70M (115)
15	60	68	1.1	MRT 50	F50M (85)
15	60	70	1.8	MRT 60	F60M (115)
15	60	71	2.6	MRT 70	F70M (115)
15	60	72	3.4	MRT 80	F80S (115)
13	70	75	2.3	MRT 70	F70M (115)
13	70	76	0.9	MRT 50	F50M (85)
13	70	78	3.2	MRT 80	F80S (115)
13	70	80	1.5	MRT 60	F60M (115)
11	80	78	1.9	MRT 70	F70M (115)
11	80	84	2.8	MRT 80	F80S (115)
11	80	84	0.8	MRT 50	F50M (85)
11	80	90	1.3	MRT 60	F60M (115)
9	100	86	1.7	MRT 70	F70M (115)
9	100	101	2.1	MRT 80	F80S (115)
9	100	103	1.0	MRT 60	F60M (115)

P_1=0.18kW		n_1=2800 [rpm]			63-2p
37	75	32	1.2	MRP 40	F40L (100)
37	75	33	2.1	MRP 50	F50L (100)
31	90	36	1.3	MRP 40	F40L (100)
31	90	37	2.3	MRP 50	F50L (100)
23	120	44	1.0	MRP 40	F40L (100)
23	120	48	3.0	MRP 60	F60M (115)
23	120	48	1.8	MRP 50	F50L (100)
19	150	52	0.8	MRP 40	F40L (100)
19	150	54	2.5	MRP 60	F60M (115)
19	150	54	1.4	MRP 50	F50L (100)
19	150	59	3.3	MRP 70	F70M (115)
16	180	60	1.2	MRP 50	F50L (100)
16	180	62	2.0	MRP 60	F60M (115)
16	180	63	2.9	MRP 70	F70M (115)
13	210	66	2.5	MRP 70	F70M (115)
13	210	67	1.0	MRP 50	F50L (100)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
13	210	71	1.7	MRP 60	F60M (115)
12	240	69	2.1	MRP 70	F70M (115)
12	240	74	0.9	MRP 50	F50L (100)
12	240	80	1.4	MRP 60	F60M (115)
9	300	77	1.8	MRP 70	F70M (115)
9	300	91	1.2	MRP 60	F60M (115)

P_1=0.18kW		n_1=1400 [rpm]			63-4p
19	75	64	1.3	MRP 50	F50L (100)
19	75	65	2.6	MRP 60	F60M (115)
19	75	67	3.1	MRP 70	F70M (115)
16	90	70	0.8	MRP 40	F40L (100)
16	90	72	1.4	MRP 50	F50L (100)
16	90	75	2.4	MRP 60	F60M (115)
16	90	76	3.4	MRP 70	F70M (115)
12	120	94	1.8	MRP 60	F60M (115)
12	120	94	1.1	MRP 50	F50L (100)
12	120	95	2.4	MRP 70	F70M (115)
9	150	105	1.5	MRP 60	F60M (115)
9	150	107	0.8	MRP 50	F50L (100)
9	150	115	2.0	MRP 70	F70M (115)
8	180	122	1.2	MRP 60	F60M (115)
8	180	124	1.8	MRP 70	F70M (115)
7	210	130	1.5	MRP 70	F70M (115)
7	210	140	1.0	MRP 60	F60M (115)
6	240	134	1.3	MRP 70	F70M (115)
6	240	157	0.9	MRP 60	F60M (115)
5	300	150	1.1	MRP 70	F70M (115)

P_1=0.18kW		n_1=900 [rpm]			71-6p
12	75	99	1.9	MRP 60	F60L (130)
12	75	103	2.3	MRP 70	F70L (130)
10	90	114	1.8	MRP 60	F60L (130)
10	90	115	2.5	MRP 70	F70L (130)
8	120	143	1.3	MRP 60	F60L (130)
8	120	145	2.7	MRP 80	F80M (130)
8	120	145	1.8	MRP 70	F70L (130)
6	150	160	1.1	MRP 60	F60L (130)
6	150	176	1.5	MRP 70	F70L (130)
6	150	179	2.0	MRP 80	F80M (130)
5	180	186	0.9	MRP 60	F60L (130)
5	180	189	1.3	MRP 70	F70L (130)
5	180	192	1.7	MRP 80	F80M (130)
4	210	198	1.1	MRP 70	F70L (130)
4	210	205	1.6	MRP 80	F80M (130)
4	240	205	0.9	MRP 70	F70L (130)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
4	210	213	0.8	MRP 60	F60L (130)
4	240	222	1.4	MRP 80	F80M (130)
3	300	229	0.8	MRP 70	F70L (130)
3	300	267	1.0	MRP 80	F80M (130)

P_1=0.25kW		n_1=2800 [rpm]			63-2p
373	7.5	5	2.4	MRT 30	F30M (75)
280	10	7	1.9	MRT 30	F30M (75)
224	12.5	8	1.7	MRT 30	F30M (75)
187	15	10	1.4	MRT 30	F30M (75)
187	15	11	3.2	MRT 40	F40S (75)
140	20	13	1.1	MRT 30	F30M (75)
140	20	14	2.4	MRT 40	F40S (75)
112	25	14	1.1	MRT 30	F30M (75)
112	25	17	1.8	MRT 40	F40S (75)
93	30	16	1.1	MRT 30	F30M (75)
93	30	18	2.0	MRT 40	F40S (75)
93	30	19	3.5	MRT 50	F50S (75)
93	5	4	3.5	MRT 30	F30M (75)
70	40	23	1.5	MRT 40	F40S (75)
70	40	25	2.6	MRT 50	F50S (75)
56	50	27	1.2	MRT 40	F40S (75)
56	50	28	2.1	MRT 50	F50S (75)
47	60	30	1.0	MRT 40	F40S (75)
47	60	31	1.8	MRT 50	F50S (75)
40	70	35	1.5	MRT 50	F50S (75)
35	80	40	1.2	MRT 50	F50S (75)
28	100	45	1.1	MRT 50	F50S (75)

P_1=0.25kW		n_1=1400 [rpm]			71-4p
187	7.5	11	3.3	MRT 40	F40M (85)
140	10	14	2.8	MRT 40	F40M (85)
112	12.5	18	2.2	MRT 40	F40M (85)
93	15	21	1.9	MRT 40	F40M (85)
93	15	22	3.5	MRT 50	F50M (85)
70	20	27	1.4	MRT 40	F40M (85)
70	20	28	2.6	MRT 50	F50M (85)
56	25	33	1.9	MRT 50	F50M (85)
56	25	33	1.1	MRT 40	F40M (85)
47	30	36	1.2	MRT 40	F40M (85)
47	30	38	2.1	MRT 50	F50M (85)
35	40	44	0.9	MRT 40	F40M (85)
35	40	48	2.7	MRT 60	F60M (115)
35	40	49	1.6	MRT 50	F50M (85)
28	50	55	2.2	MRT 60	F60M (115)
28	50	55	1.2	MRT 50	F50M (85)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
28	50	60	3.0	MRT 70	F70M (115)
23	60	61	1.1	MRT 50	F50M (85)
23	60	63	1.8	MRT 60	F60M (115)
23	60	64	2.6	MRT 70	F70M (115)
23	60	65	3.4	MRT 80	F80S (115)
20	70	68	2.2	MRT 70	F70M (115)
20	70	69	0.9	MRT 50	F50M (85)
20	70	70	3.2	MRT 80	F80S (115)
20	70	73	1.5	MRT 60	F60M (115)
18	80	72	1.8	MRT 70	F70M (115)
18	80	78	2.8	MRT 80	F80S (115)
18	80	78	0.8	MRT 50	F50M (85)
18	80	83	1.2	MRT 60	F60M (115)
14	100	80	1.6	MRT 70	F70M (115)
14	100	94	2.0	MRT 80	F80S (115)
14	100	96	1.0	MRT 60	F60M (115)

P_1=0.25kW		n_1=900 [rpm]			71-6p
180	5	11	3.5	MRT 40	F40M (85)
120	7.5	17	2.4	MRT 40	F40M (85)
90	10	22	2.1	MRT 40	F40M (85)
90	10	23	3.5	MRT 50	F50M (85)
72	12.5	28	2.7	MRT 50	F50M (85)
72	12.5	28	1.6	MRT 40	F40M (85)
60	15	33	2.5	MRT 50	F50M (85)
60	15	33	1.4	MRT 40	F40M (85)
45	20	41	1.1	MRT 40	F40M (85)
45	20	44	2.9	MRT 60	F60M (115)
45	20	44	1.9	MRT 50	F50M (85)
36	25	50	0.8	MRT 40	F40M (85)
36	25	51	1.4	MRT 50	F50M (85)
36	25	52	2.7	MRT 60	F60M (115)
30	30	56	0.9	MRT 40	F40M (85)
30	30	58	1.5	MRT 50	F50M (85)
30	30	60	2.6	MRT 60	F60M (115)
23	40	74	2.0	MRT 60	F60M (115)
23	40	75	1.1	MRT 50	F50M (85)
23	40	76	2.6	MRT 70	F70M (115)
18	50	84	1.6	MRT 60	F60M (115)
18	50	85	0.9	MRT 50	F50M (85)
18	50	92	2.2	MRT 70	F70M (115)
18	50	93	3.0	MRT 80	F80S (115)
15	60	94	0.8	MRT 50	F50M (85)
15	60	97	1.3	MRT 60	F60M (115)
15	60	99	1.9	MRT 70	F70M (115)
15	60	100	2.5	MRT 80	F80S (115)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
13	70	104	1.6	MRT 70	F70M (115)
13	70	108	2.3	MRT 80	F80S (115)
13	70	111	1.1	MRT 60	F60M (115)
11	80	108	1.3	MRT 70	F70M (115)
11	80	117	2.0	MRT 80	F80S (115)
11	80	125	0.9	MRT 60	F60M (115)
11	80	132	3.2	MRT 100	F100S (130)
9	100	119	1.2	MRT 70	F70M (115)
9	100	133	2.9	MRT 100	F100S (130)
9	100	141	1.5	MRT 80	F80S (115)

P_1=0.25kW		n_1=2800 [rpm]			63-2p
37	75	45	1.5	MRP 50	F50L (100)
37	75	45	0.9	MRP 40	F40L (100)
37	75	46	3.0	MRP 60	F60M (115)
31	90	50	0.9	MRP 40	F40L (100)
31	90	51	1.7	MRP 50	F50L (100)
31	90	53	2.9	MRP 60	F60M (115)
23	120	66	2.1	MRP 60	F60M (115)
23	120	66	1.3	MRP 50	F50L (100)
19	150	74	1.8	MRP 60	F60M (115)
19	150	76	1.0	MRP 50	F50L (100)
16	180	83	0.9	MRP 50	F50L (100)
16	180	86	1.4	MRP 60	F60M (115)
13	210	99	1.2	MRP 60	F60M (115)
12	240	111	1.0	MRP 60	F60M (115)
9	300	126	0.8	MRP 60	F60M (115)

P_1=0.25kW		n_1=1400 [rpm]			71-4p
19	75	90	1.8	MRP 60	F60L (130)
19	75	94	2.3	MRP 70	F70L (130)
16	90	104	1.8	MRP 60	F60L (130)
16	90	105	2.4	MRP 70	F70L (130)
12	120	130	1.3	MRP 60	F60L (130)
12	120	132	2.7	MRP 80	F80M (130)
12	120	132	1.8	MRP 70	F70L (130)
9	150	146	1.1	MRP 60	F60L (130)
9	150	160	1.5	MRP 70	F70L (130)
9	150	163	2.0	MRP 80	F80M (130)
8	180	169	0.9	MRP 60	F60L (130)
8	180	172	1.3	MRP 70	F70L (130)
8	180	175	1.7	MRP 80	F80M (130)
7	210	180	1.1	MRP 70	F70L (130)
7	210	187	1.6	MRP 80	F80M (130)
6	240	187	0.9	MRP 70	F70L (130)
6	240	202	1.4	MRP 80	F80M (130)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
5	300	209	0.8	MRP 70	F70L (130)
5	300	243	1.0	MRP 80	F80M (130)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
28	100	62	1.7	MRT 70	F70M (115)
28	100	73	1.1	MRT 60	F60M (115)

P_1=0.25kW		n_1=900 [rpm]			71-6p
12	75	137	1.4	MRP 60	F60L (130)
12	75	143	1.7	MRP 70	F70L (130)
12	75	144	2.3	MRP 80	F80M (130)
10	90	156	2.7	MRP 80	F80M (130)
10	90	158	1.3	MRP 60	F60L (130)
10	90	160	1.8	MRP 70	F70L (130)
8	120	199	1.0	MRP 60	F60L (130)
8	120	202	2.0	MRP 80	F80M (130)
8	120	202	1.3	MRP 70	F70L (130)
6	150	222	0.8	MRP 60	F60L (130)
6	150	245	1.1	MRP 70	F70L (130)
6	150	248	1.5	MRP 80	F80M (130)
5	180	262	0.9	MRP 70	F70L (130)
5	180	267	1.2	MRP 80	F80M (130)
4	210	275	0.8	MRP 70	F70L (130)
4	210	285	1.2	MRP 80	F80M (130)
4	240	308	1.0	MRP 80	F80M (130)

P_1=0.37kW		n_1=2800 [rpm]			71-2p
280	10	11	3.1	MRT 40	F40M (85)
224	12.5	13	2.5	MRT 40	F40M (85)
187	15	16	2.1	MRT 40	F40M (85)
140	20	20	1.6	MRT 40	F40M (85)
140	20	21	2.9	MRT 50	F50M (85)
112	25	25	2.2	MRT 50	F50M (85)
112	25	25	1.2	MRT 40	F40M (85)
93	30	27	1.3	MRT 40	F40M (85)
93	30	28	2.4	MRT 50	F50M (85)
70	40	33	1.0	MRT 40	F40M (85)
70	40	36	3.0	MRT 60	F60M (115)
70	40	37	1.8	MRT 50	F50M (85)
56	50	41	2.5	MRT 60	F60M (115)
56	50	42	1.4	MRT 50	F50M (85)
56	50	45	3.4	MRT 70	F70M (115)
47	60	46	1.2	MRT 50	F50M (85)
47	60	48	2.9	MRT 70	F70M (115)
47	60	48	2.0	MRT 60	F60M (115)
40	70	51	2.5	MRT 70	F70M (115)
40	70	52	1.0	MRT 50	F50M (85)
40	70	55	1.7	MRT 60	F60M (115)
35	80	56	2.0	MRT 70	F70M (115)
35	80	64	1.4	MRT 60	F60M (115)

P_1=0.37kW		n_1=1400 [rpm]			71-4p
280	5	11	3.3	MRT 40	F40M (85)
187	7.5	16	2.2	MRT 40	F40M (85)
140	10	21	1.9	MRT 40	F40M (85)
140	10	22	3.2	MRT 50	F50M (85)
112	12.5	27	1.5	MRT 40	F40M (85)
112	12.5	27	2.5	MRT 50	F50M (85)
93	15	31	1.3	MRT 40	F40M (85)
93	15	32	2.4	MRT 50	F50M (85)
70	20	40	1.0	MRT 40	F40M (85)
70	20	42	1.8	MRT 50	F50M (85)
70	20	42	2.7	MRT 60	F60M (115)
56	25	49	1.3	MRT 50	F50M (85)
56	25	50	2.5	MRT 60	F60M (115)
56	25	52	3.1	MRT 70	F70M (115)
47	30	56	1.4	MRT 50	F50M (85)
47	30	58	2.4	MRT 60	F60M (115)
47	30	58	3.3	MRT 70	F70M (115)
35	40	72	1.8	MRT 60	F60M (115)
35	40	73	1.1	MRT 50	F50M (85)
35	40	74	2.4	MRT 70	F70M (115)
28	50	81	1.5	MRT 60	F60M (115)
28	50	82	0.8	MRT 50	F50M (85)
28	50	88	2.0	MRT 70	F70M (115)
28	50	90	2.8	MRT 80	F80S (115)
23	60	94	1.2	MRT 60	F60M (115)
23	60	95	1.7	MRT 70	F70M (115)
23	60	97	2.3	MRT 80	F80S (115)
20	70	101	1.5	MRT 70	F70M (115)
20	70	104	2.1	MRT 80	F80S (115)
20	70	108	1.0	MRT 60	F60M (115)
18	80	107	1.2	MRT 70	F70M (115)
18	80	115	1.9	MRT 80	F80S (115)
18	80	123	0.8	MRT 60	F60M (115)
18	80	127	3.0	MRT 100	F100S (130)
14	100	11	3.5	MRT 120	F120S (130)
14	100	119	1.1	MRT 70	F70M (115)
14	100	131	2.6	MRT 100	F100S (130)
14	100	139	1.4	MRT 80	F80S (115)

P_1=0.37kW		n_1=900 [rpm]			80-6p
180	5	17	2.4	MRT 40	F40L(100)
120	7.5	25	3.0	MRT 50	F50L (100)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft prior to alterations*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
120	7.5	25	1.6	MRT 40	F40L(100)
90	10	33	1.4	MRT 40	F40L(100)
90	10	34	2.3	MRT 50	F50L (100)
72	12.5	41	1.1	MRT 40	F40L(100)
72	12.5	42	2.9	MRT 60	F60S (100)
72	12.5	42	1.8	MRT 50	F50L (100)
60	15	48	0.9	MRT 40	F40L(100)
60	15	49	1.7	MRT 50	F50L (100)
60	15	50	2.7	MRT 60	F60S (100)
45	20	64	1.9	MRT 60	F60S (100)
45	20	64	1.3	MRT 50	F50L (100)
45	20	66	2.9	MRT 70	F70S (100)
36	25	76	0.9	MRT 50	F50L (100)
36	25	77	1.8	MRT 60	F60S (100)
36	25	80	2.3	MRT 70	F70S (100)
30	30	86	1.0	MRT 50	F50L (100)
30	30	88	1.8	MRT 60	F60S (100)
30	30	90	2.4	MRT 70	F70S (100)
23	40	110	1.3	MRT 60	F60S (100)
23	40	112	0.8	MRT 50	F50L (100)
23	40	113	2.7	MRT 80	F80M (130)
23	40	113	1.8	MRT 70	F70S (100)
18	50	124	1.1	MRT 60	F60S (100)
18	50	135	1.5	MRT 70	F70S (100)
18	50	137	2.0	MRT 80	F80M (130)
15	60	144	0.9	MRT 60	F60S (100)
15	60	146	1.3	MRT 70	F70S (100)
15	60	148	1.7	MRT 80	F80M (130)
15	60	148	3.3	MRT 100	F100S (130)
13	70	154	1.1	MRT 70	F70S (100)
13	70	159	1.6	MRT 80	F80M (130)
13	70	170	2.7	MRT 100	F100S (130)
11	80	160	0.9	MRT 70	F70S (100)
11	80	173	1.4	MRT 80	F80M (130)
11	80	195	2.2	MRT 100	F100S (130)
11	80	210	3.4	MRT 120	F120S (130)
9	100	177	0.8	MRT 70	F70S (100)
9	100	196	1.9	MRT 100	F100S (130)
9	100	208	1.0	MRT 80	F80M (130)
9	100	236	2.6	MRT 120	F120S (130)

P_1=0.37kW		n_1=2800 [rpm]			71-2p
37	75	68	2.0	MRP 60	F60L (130)
37	75	71	2.5	MRP 70	F70L (130)
37	75	72	3.4	MRP 80	F80M (130)
31	90	78	1.9	MRP 60	F60L (130)
31	90	79	2.7	MRP 70	F70L (130)
23	120	98	1.4	MRP 60	F60L (130)
23	120	100	3.0	MRP 80	F80M (130)
23	120	100	1.9	MRP 70	F70L (130)
19	150	110	1.2	MRP 60	F60L (130)
19	150	121	1.6	MRP 70	F70L (130)
19	150	123	2.2	MRP 80	F80M (130)
16	180	128	1.0	MRP 60	F60L (130)
16	180	130	1.4	MRP 70	F70L (130)
16	180	132	1.8	MRP 80	F80M (130)
13	210	136	1.2	MRP 70	F70L (130)
13	210	141	1.7	MRP 80	F80M (130)
13	210	146	0.8	MRP 60	F60L (130)
12	240	141	1.0	MRP 70	F70L (130)
12	240	153	1.5	MRP 80	F80M (130)
9	300	158	0.9	MRP 70	F70L (130)
9	300	183	1.1	MRP 80	F80M (130)

P_1=0.37kW		n_1=1400 [rpm]			71-4p
19	75	133	1.2	MRP 60	F60L (130)
19	75	138	1.5	MRP 70	F70L (130)
19	75	140	2.1	MRP 80	F80M (130)
16	90	151	2.5	MRP 80	F80M (130)
16	90	153	1.2	MRP 60	F60L (130)
16	90	155	1.6	MRP 70	F70L (130)
12	120	193	0.9	MRP 60	F60L (130)
12	120	196	1.8	MRP 80	F80M (130)
12	120	196	1.2	MRP 70	F70L (130)
9	150	237	1.0	MRP 70	F70L (130)
9	150	241	1.4	MRP 80	F80M (130)
8	180	255	0.9	MRP 70	F70L (130)
8	180	259	1.1	MRP 80	F80M (130)
7	210	277	1.1	MRP 80	F80M (130)
6	240	299	0.9	MRP 80	F80M (130)

P_1=0.37kW		n_1=900 [rpm]			80-6p
12	75	208	2.8	MRP 100	F100M (165)
10	90	240	1.2	MRP 100	F100M (165)
8	120	298	1.5	MRP 100	F100M (165)
6	150	356	2.1	MRP 100	F100M (165)
6	150	367	2.5	MRP 120	F100M (165)
5	180	395	1.2	MRP 100	F100M (165)
5	180	401	1.6	MRP 120	F100M (165)
4	240	518	0.9	MRP 100	F100M (165)
4	240	561	1.8	MRP 120	F100M (165)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
3	300	526	1.2	MRP 100	F100M (165)
3	300	625	1.0	MRP 120	F100M (165)

P_1=0.55kW		n_1=2800 [rpm]			71-2p
373	7.5	12	2.5	MRT 40	F40M (85)
280	10	16	2.1	MRT 40	F40M (85)
224	12.5	20	2.8	MRT 50	F50M (85)
224	12.5	20	1.7	MRT 40	F40M (85)
187	15	24	2.6	MRT 50	F50M (85)
187	15	24	1.4	MRT 40	F40M (85)
140	20	30	1.1	MRT 40	F40M (85)
140	20	32	3.0	MRT 60	F60M (115)
140	20	32	2.0	MRT 50	F50M (85)
112	25	37	1.5	MRT 50	F50M (85)
112	25	38	2.8	MRT 60	F60M (115)
112	25	39	3.5	MRT 70	F70M (115)
93	30	42	1.6	MRT 50	F50M (85)
93	30	43	2.7	MRT 60	F60M (115)
93	30	44	3.7	MRT 70	F70M (115)
70	40	54	2.0	MRT 60	F60M (115)
70	40	55	1.2	MRT 50	F50M (85)
70	40	56	2.7	MRT 70	F70M (115)
56	50	61	1.7	MRT 60	F60M (115)
56	50	67	2.3	MRT 70	F70M (115)
47	60	71	1.4	MRT 60	F60M (115)
47	60	72	1.9	MRT 70	F70M (115)
40	70	76	1.7	MRT 70	F70M (115)
40	70	81	1.1	MRT 60	F60M (115)
35	80	83	1.3	MRT 70	F70M (115)
28	100	92	1.2	MRT 70	F70M (115)

P_1=0.55kW		n_1=1400 [rpm]			80-4p
280	5	16	2.2	MRT 40	F40L(100)
187	7.5	24	2.7	MRT 50	F50L (100)
187	7.5	25	1.5	MRT 40	F40L(100)
140	10	32	1.3	MRT 40	F40L(100)
140	10	33	3.4	MRT 60	F60S (100)
140	10	33	2.2	MRT 50	F50L (100)
112	12.5	39	1.0	MRT 40	F40L(100)
112	12.5	40	1.7	MRT 50	F50L (100)
112	12.5	41	2.7	MRT 60	F60S (100)
93	15	47	0.9	MRT 40	F40L(100)
93	15	48	2.5	MRT 60	F60S (100)
93	15	48	1.6	MRT 50	F50L (100)
70	20	62	1.8	MRT 60	F60S (100)
70	20	62	1.2	MRT 50	F50L (100)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
70	20	64	2.7	MRT 70	F70S (100)
56	25	73	0.9	MRT 50	F50L (100)
56	25	74	1.7	MRT 60	F60S (100)
56	25	77	2.1	MRT 70	F70S (100)
56	25	78	2.9	MRT 80	F80M (130)
47	30	83	1.0	MRT 50	F50L (100)
47	30	84	3.4	MRT 80	F80M (130)
47	30	86	1.6	MRT 60	F60S (100)
47	30	87	2.2	MRT 70	F70S (100)
35	40	107	1.2	MRT 60	F60S (100)
35	40	110	2.5	MRT 80	F80M (130)
35	40	110	1.6	MRT 70	F70S (100)
28	50	120	1.0	MRT 60	F60S (100)
28	50	131	1.4	MRT 70	F70S (100)
28	50	133	1.9	MRT 80	F80M (130)
23	60	140	0.8	MRT 60	F60S (100)
23	60	142	1.2	MRT 70	F70S (100)
23	60	144	1.5	MRT 80	F80M (130)
23	60	144	3.1	MRT 100	F100S (130)
20	70	150	1.0	MRT 70	F70S (100)
20	70	155	1.4	MRT 80	F80M (130)
20	70	165	2.5	MRT 100	F100S (130)
18	80	159	0.8	MRT 70	F70S (100)
18	80	171	1.3	MRT 80	F80M (130)
18	80	189	2.0	MRT 100	F100S (130)
18	80	204	3.1	MRT 120	F120S (130)
14	100	195	1.7	MRT 100	F100S (130)
14	100	206	0.9	MRT 80	F80M (130)
14	100	233	2.3	MRT 120	F120S (130)

P_1=0.55kW		n_1=900 [rpm]			80-6p
180	5	25	1.6	MRT 40	F40L(100)
180	5	26	2.8	MRT 50	F50L (100)
120	7.5	38	2.0	MRT 50	F50L (100)
120	7.5	38	1.1	MRT 40	F40L(100)
120	7.5	39	3.5	MRT 60	F60S (100)
90	10	49	0.9	MRT 40	F40L(100)
90	10	50	1.6	MRT 50	F50L (100)
90	10	51	2.4	MRT 60	F60S (100)
90	10	53	3.5	MRT 70	F70S (100)
72	12.5	62	1.2	MRT 50	F50L (100)
72	12.5	63	2.0	MRT 60	F60S (100)
72	12.5	64	3.1	MRT 70	F70S (100)
60	15	74	1.8	MRT 60	F60S (100)
60	15	74	1.2	MRT 50	F50L (100)
60	15	75	2.7	MRT 70	F70S (100)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft prior to alterations*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
45	20	96	1.3	MRT 60	F60S (100)
45	20	96	0.9	MRT 50	F50L (100)
45	20	98	1.9	MRT 70	F70S (100)
45	20	99	2.7	MRT 80	F80M (130)
36	25	114	1.2	MRT 60	F60S (100)
36	25	118	1.5	MRT 70	F70S (100)
36	25	120	2.1	MRT 80	F80M (130)
30	30	130	2.5	MRT 80	F80M (130)
30	30	131	1.2	MRT 60	F60S (100)
30	30	133	1.6	MRT 70	F70S (100)
23	40	163	0.9	MRT 60	F60S (100)
23	40	168	1.8	MRT 80	F80M (130)
23	40	168	1.2	MRT 70	F70S (100)
23	40	168	3.2	MRT 100	F100S (130)
18	50	198	2.6	MRT 100	F100S (130)
18	50	201	1.0	MRT 70	F70S (100)
18	50	204	1.4	MRT 80	F80M (130)
15	60	217	0.9	MRT 70	F70S (100)
15	60	221	1.1	MRT 80	F80M (130)
15	60	221	2.2	MRT 100	F100S (130)
15	60	224	3.4	MRT 120	F120S (130)
13	70	237	1.1	MRT 80	F80M (130)
13	70	253	1.8	MRT 100	F100S (130)
13	70	278	2.7	MRT 120	F120S (130)
11	80	257	0.9	MRT 80	F80M (130)
11	80	289	1.5	MRT 100	F100S (130)
11	80	313	2.3	MRT 120	F120S (130)
9	100	292	1.3	MRT 100	F100S (130)
9	100	350	1.7	MRT 120	F120S (130)

P_1=0.55kW		n_1=2800 [rpm]			71-2p
37	75	101	1.4	MRP 60	F60L (130)
37	75	105	1.7	MRP 70	F70L (130)
37	75	106	2.3	MRP 80	F80M (130)
31	90	115	2.7	MRP 80	F80M (130)
31	90	116	1.3	MRP 60	F60L (130)
31	90	118	1.8	MRP 70	F70L (130)
23	120	146	1.0	MRP 60	F60L (130)
23	120	148	2.0	MRP 80	F80M (130)
23	120	148	1.3	MRP 70	F70L (130)
19	150	164	0.8	MRP 60	F60L (130)
19	150	180	1.1	MRP 70	F70L (130)
19	150	183	1.5	MRP 80	F80M (130)
16	180	193	0.9	MRP 70	F70L (130)
16	180	196	1.2	MRP 80	F80M (130)
13	210	202	0.8	MRP 70	F70L (130)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
13	210	210	1.2	MRP 80	F80M (130)
12	240	227	1.0	MRP 80	F80M (130)
9	300	273	0.8	MRP 80	F80M (130)

P_1=0.55kW		n_1=1400 [rpm]			80-4p
19	75	203	2.6	MRP 100	F100M (165)
16	90	234	2.8	MRP 100	F100M (165)
12	120	291	2.2	MRP 100	F100M (165)
12	120	295	3.4	MRP 120	F120M (165)
9	150	348	1.7	MRP 100	F100M (165)
9	150	358	2.6	MRP 120	F120M (165)
8	180	385	1.5	MRP 100	F100M (165)
8	180	391	2.3	MRP 120	F120M (165)
6	240	505	1.0	MRP 100	F100M (165)
6	240	547	1.5	MRP 120	F120M (165)
5	300	513	0.9	MRP 100	F100M (165)
5	300	609	1.2	MRP 120	F120M (165)

P_1=0.55kW		n_1=900 [rpm]			80-6p
12	75	310	1.9	MRP 100	F100M (165)
12	75	322	2.9	MRP 120	F120M (165)
10	90	357	2.1	MRP 100	F100M (165)
10	90	367	3.2	MRP 120	F120M (165)
8	120	443	1.6	MRP 100	F100M (165)
8	120	450	2.5	MRP 120	F120M (165)
6	150	530	1.3	MRP 100	F100M (165)
6	150	546	1.9	MRP 120	F120M (165)
5	180	587	1.1	MRP 100	F100M (165)
5	180	597	1.7	MRP 120	F120M (165)
4	240	835	1.1	MRP 120	F120M (165)
3	300	929	0.9	MRP 120	F120M (165)

P_1=0.75kW		n_1=2800 [rpm]			80-2p
560	5	11	2.7	MRT 40	F40L(100)
373	7.5	17	3.3	MRT 50	F50L (100)
373	7.5	17	1.8	MRT 40	F40L(100)
280	10	22	1.5	MRT 40	F40L(100)
280	10	23	2.7	MRT 50	F50L (100)
224	12.5	27	1.2	MRT 40	F40L(100)
224	12.5	28	3.3	MRT 60	F60S (100)
224	12.5	28	2.0	MRT 50	F50L (100)
187	15	33	3.0	MRT 60	F60S (100)
187	15	33	1.9	MRT 50	F50L (100)
186	15	32	1.1	MRT 40	F40L(100)
140	20	41	0.8	MRT 40	F40L(100)
140	20	43	2.2	MRT 60	F60S (100)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
140	20	43	1.4	MRT 50	F50L (100)
140	20	44	3.3	MRT 70	F70S (100)
112	25	51	2.1	MRT 60	F60S (100)
112	25	51	1.1	MRT 50	F50L (100)
112	25	53	2.6	MRT 70	F70S (100)
112	25	54	3.5	MRT 80	F80M (130)
93	30	58	4.1	MRT 80	F80M (130)
93	30	58	1.2	MRT 50	F50L (100)
93	30	59	2.0	MRT 60	F60S (100)
93	30	60	2.7	MRT 70	F70S (100)
70	40	74	1.5	MRT 60	F60S (100)
70	40	76	3.0	MRT 80	F80M (130)
70	40	76	2.0	MRT 70	F70S (100)
56	50	83	1.2	MRT 60	F60S (100)
56	50	91	1.7	MRT 70	F70S (100)
56	50	92	2.3	MRT 80	F80M (130)
47	60	97	1.0	MRT 60	F60S (100)
47	60	98	1.4	MRT 70	F70S (100)
47	60	100	1.9	MRT 80	F80M (130)
40	70	104	1.2	MRT 70	F70S (100)
40	70	107	1.7	MRT 80	F80M (130)
40	70	111	0.8	MRT 60	F60S (100)
40	70	115	3.0	MRT 100	F100S (130)
35	80	113	1.0	MRT 70	F70S (100)
35	80	121	1.5	MRT 80	F80M (130)
35	80	131	2.4	MRT 100	F100S (130)
28	100	138	2.1	MRT 100	F100S (130)
28	100	146	1.1	MRT 80	F80M (130)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
70	20	85	0.9	MRT 50	F50L (100)
70	20	87	2.0	MRT 70	F70S (100)
70	20	88	2.7	MRT 80	F80M (130)
56	25	101	1.2	MRT 60	F60S (100)
56	25	105	1.5	MRT 70	F70S (100)
56	25	106	2.1	MRT 80	F80M (130)
47	30	115	2.5	MRT 80	F80M (130)
47	30	117	1.2	MRT 60	F60S (100)
47	30	118	1.6	MRT 70	F70S (100)
35	40	145	0.9	MRT 60	F60S (100)
35	40	149	1.8	MRT 80	F80M (130)
35	40	149	1.2	MRT 70	F70S (100)
35	40	149	3.2	MRT 100	F100S (130)
28	50	177	2.6	MRT 100	F100S (130)
28	50	179	1.0	MRT 70	F70S (100)
28	50	182	1.4	MRT 80	F80M (130)
23	60	193	0.9	MRT 70	F70S (100)
23	60	196	1.1	MRT 80	F80M (130)
23	60	196	2.2	MRT 100	F100S (130)
23	60	200	3.4	MRT 120	F120S (130)
20	70	211	1.1	MRT 80	F80M (130)
20	70	226	1.8	MRT 100	F100S (130)
20	70	247	2.7	MRT 120	F120S (130)
18	80	233	0.9	MRT 80	F80M (130)
18	80	258	1.5	MRT 100	F100S (130)
18	80	278	2.3	MRT 120	F120S (130)
14	100	266	1.3	MRT 100	F100S (130)
14	100	317	1.7	MRT 120	F120S (130)
14	100	327	3.5	MRT 150	F150S (165)

P_1=0.75kW		n_1=1400 [rpm]			80-4p
280	5	22	1.6	MRT 40	F40L(100)
280	5	23	2.8	MRT 50	F50L (100)
187	7.5	33	2.0	MRT 50	F50L (100)
187	7.5	34	3.5	MRT 60	F60S (100)
186	7.5	33	1.1	MRT 40	F40L(100)
140	10	44	0.9	MRT 40	F40L(100)
140	10	45	1.6	MRT 50	F50L (100)
140	10	46	2.5	MRT 60	F60S (100)
140	10	47	3.5	MRT 70	F70S (100)
112	12.5	55	1.2	MRT 50	F50L (100)
112	12.5	56	2.0	MRT 60	F60S (100)
112	12.5	57	3.1	MRT 70	F70S (100)
93	15	65	1.2	MRT 50	F50L (100)
93	15	66	1.8	MRT 60	F60S (100)
93	15	67	2.7	MRT 70	F70S (100)
70	20	85	1.3	MRT 60	F60S (100)

P_1=0.75kW		n_1=900 [rpm]			90-6p
180	5	35	3.5	MRT 60	F60M (115)
180	5	35	2.1	MRT 50	(115)
120	7.5	51	1.5	MRT 50	(115)
120	7.5	53	3.2	MRT 70	F70M (115)
120	7.5	53	2.6	MRT 60	F60M (115)
90	10	68	1.2	MRT 50	(115)
90	10	70	1.8	MRT 60	F60M (115)
90	10	72	3.0	MRT 80	F80S (115)
90	10	72	2.6	MRT 70	F70M (115)
72	12.5	85	0.9	MRT 50	(115)
72	12.5	86	1.4	MRT 60	F60M (115)
72	12.5	88	2.8	MRT 80	F80S (115)
72	12.5	88	2.3	MRT 70	F70M (115)
60	15	100	0.8	MRT 50	(115)
60	15	101	2.7	MRT 80	F80S (115)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
60	15	101	1.3	MRT 60	F60M (115)
60	15	103	2.0	MRT 70	F70M (115)
45	20	131	1.0	MRT 60	F60M (115)
45	20	132	3.5	MRT 100	F100S (130)
45	20	134	1.4	MRT 70	F70M (115)
45	20	135	2.0	MRT 80	F80S (115)
36	25	155	0.9	MRT 60	F60M (115)
36	25	159	2.8	MRT 100	F100S (130)
36	25	161	1.1	MRT 70	F70M (115)
36	25	163	1.5	MRT 80	F80S (115)
30	30	177	1.8	MRT 80	F80S (115)
30	30	179	0.9	MRT 60	F60M (115)
30	30	181	1.2	MRT 70	F70M (115)
30	30	184	3.0	MRT 100	F100S (130)
23	40	229	1.3	MRT 80	F80S (115)
23	40	229	0.9	MRT 70	F70M (115)
23	40	229	2.3	MRT 100	F100S (130)
18	50	271	1.9	MRT 100	F100S (130)
18	50	279	1.0	MRT 80	F80S (115)
18	50	283	2.8	MRT 120	F120S (130)
15	60	301	0.8	MRT 80	F80S (115)
15	60	301	1.6	MRT 100	F100S (130)
15	60	306	2.5	MRT 120	F120S (130)
13	70	323	0.8	MRT 80	F80S (115)
13	70	345	1.3	MRT 100	F100S (130)
13	70	379	2.0	MRT 120	F120S (130)
11	80	395	1.1	MRT 100	F100S (130)
11	80	407	3.4	MRT 150	F150S (165)
11	80	427	1.7	MRT 120	F120S (130)
9	100	398	1.0	MRT 100	F100S (130)
9	100	478	1.3	MRT 120	F120S (130)
9	100	493	2.6	MRT 150	F150S (165)

P_1=0.75kW		n_1=2800 [rpm]			80-2p
37	75	141	3.1	MRP 100	F100M (165)
31	90	163	3.4	MRP 100	F100M (165)
23	120	202	2.6	MRP 100	F100M (165)
19	150	242	2.1	MRP 100	F100M (165)
19	150	249	3.1	MRP 120	F120M (165)
16	180	268	1.8	MRP 100	F100M (165)
16	180	272	2.7	MRP 120	F120M (165)
12	240	351	1.2	MRP 100	F100M (165)
12	240	381	1.8	MRP 120	F120M (165)
9	300	357	1.0	MRP 100	F100M (165)
9	300	424	1.4	MRP 120	F120M (165)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
P_1=0.75kW		n_1=1400 [rpm]			80-4p
19	75	277	1.9	MRP 100	F100M (165)
16	90	319	2.1	MRP 100	F100M (165)
16	90	328	3.2	MRP 120	F120M (165)
12	120	397	1.6	MRP 100	F100M (165)
12	120	402	2.5	MRP 120	F120M (165)
9	150	474	1.3	MRP 100	F100M (165)
9	150	488	1.9	MRP 120	F120M (165)
9	75	288	2.9	MRP 120	F120M (165)
8	180	525	1.1	MRP 100	F100M (165)
8	180	534	1.7	MRP 120	F120M (165)
6	240	747	1.1	MRP 120	F120M (165)
5	300	831	0.9	MRP 120	F120M (165)

P_1=0.75kW		n_1=900 [rpm]			90-6p
12	75	422	1.4	MRP 100	F100M (165)
12	75	439	2.1	MRP 120	F120M (165)
10	90	487	1.5	MRP 100	F100M (165)
10	90	500	2.4	MRP 120	F120M (165)
8	120	605	1.2	MRP 100	F100M (165)
8	120	613	1.8	MRP 120	F120M (165)
6	150	722	0.9	MRP 100	F100M (165)
6	150	745	1.4	MRP 120	F120M (165)
5	180	800	0.8	MRP 100	F100M (165)
5	180	814	1.2	MRP 120	F120M (165)
4	240	1138	0.8	MRP 120	F120M (165)

P_1=1.1kW		n_1=2800 [rpm]			80-2p
560	5	17	3.2	MRT 50	F50L (100)
560	5	17	1.8	MRT 40	F40L(100)
373	7.5	25	2.3	MRT 50	F50L (100)
373	7.5	25	1.3	MRT 40	F40L(100)
280	10	32	1.1	MRT 40	F40L(100)
280	10	33	1.8	MRT 50	F50L (100)
280	10	34	2.8	MRT 60	F60S (100)
224	12.5	40	0.8	MRT 40	F40L(100)
224	12.5	41	2.3	MRT 60	F60S (100)
224	12.5	41	1.4	MRT 50	F50L (100)
187	15	48	1.3	MRT 50	F50L (100)
187	15	49	2.1	MRT 60	F60S (100)
187	15	50	3.1	MRT 70	F70S (100)
140	20	63	1.5	MRT 60	F60S (100)
140	20	63	1.0	MRT 50	F50L (100)
140	20	65	3.0	MRT 80	F80M (130)
140	20	65	2.2	MRT 70	F70S (100)
112	25	75	1.4	MRT 60	F60S (100)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
112	25	78	1.7	MRT 70	F70S (100)
112	25	79	2.4	MRT 80	F80M (130)
93	30	86	2.8	MRT 80	F80M (130)
93	30	87	1.4	MRT 60	F60S (100)
93	30	88	1.8	MRT 70	F70S (100)
70	40	108	1.0	MRT 60	F60S (100)
70	40	111	2.0	MRT 80	F80M (130)
70	40	111	1.3	MRT 70	F70S (100)
56	50	131	2.9	MRT 100	F100S (130)
56	50	133	1.1	MRT 70	F70S (100)
56	50	135	1.5	MRT 80	F80M (130)
47	60	144	1.0	MRT 70	F70S (100)
47	60	146	1.3	MRT 80	F80M (130)
47	60	146	2.5	MRT 100	F100S (130)
40	70	158	1.2	MRT 80	F80M (130)
40	70	168	2.0	MRT 100	F100S (130)
40	70	184	3.0	MRT 120	F120S (130)
35	80	177	1.0	MRT 80	F80M (130)
35	80	192	1.7	MRT 100	F100S (130)
28	100	203	1.4	MRT 100	F100S (130)

P_1=1.1kW		n_1=1400 [rpm]			90-4p
280	5	34	3.3	MRT 60	F60M (115)
280	5	34	1.9	MRT 50	(115)
187	7.5	50	2.4	MRT 60	F60M (115)
187	7.5	51	3.0	MRT 70	F70M (115)
186	7.5	49	1.4	MRT 50	(115)
140	10	65	1.1	MRT 50	(115)
140	10	67	1.7	MRT 60	F60M (115)
140	10	68	2.8	MRT 80	F80S (115)
140	10	68	2.4	MRT 70	F70M (115)
112	12.5	81	0.8	MRT 50	(115)
112	12.5	82	1.3	MRT 60	F60M (115)
112	12.5	83	2.6	MRT 80	F80S (115)
112	12.5	83	2.1	MRT 70	F70M (115)
93	15	96	0.8	MRT 50	(115)
93	15	97	2.6	MRT 80	F80S (115)
93	15	97	1.2	MRT 60	F60M (115)
93	15	98	1.9	MRT 70	F70M (115)
70	20	125	0.9	MRT 60	F60M (115)
70	20	126	3.3	MRT 100	F100S (130)
70	20	128	1.3	MRT 70	F70M (115)
70	20	129	1.8	MRT 80	F80S (115)
56	25	148	0.9	MRT 60	F60M (115)
56	25	152	2.6	MRT 100	F100S (130)
56	25	154	1.1	MRT 70	F70M (115)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
56	25	156	1.4	MRT 80	F80S (115)
47	30	169	1.7	MRT 80	F80S (115)
47	30	171	0.8	MRT 60	F60M (115)
47	30	173	1.1	MRT 70	F70M (115)
47	30	176	2.8	MRT 100	F100S (130)
35	40	219	1.2	MRT 80	F80S (115)
35	40	219	0.8	MRT 70	F70M (115)
35	40	219	2.2	MRT 100	F100S (130)
35	40	222	3.4	MRT 120	F120S (130)
28	50	259	1.8	MRT 100	F100S (130)
28	50	266	0.9	MRT 80	F80S (115)
28	50	270	2.6	MRT 120	F120S (130)
23	60	288	0.8	MRT 80	F80S (115)
23	60	288	1.5	MRT 100	F100S (130)
23	60	293	2.3	MRT 120	F120S (130)
20	70	331	1.3	MRT 100	F100S (130)
20	70	362	1.8	MRT 120	F120S (130)
18	80	378	1.0	MRT 100	F100S (130)
18	80	390	3.2	MRT 150	F150S (165)
18	80	408	1.6	MRT 120	F120S (130)
14	100	390	0.9	MRT 100	F100S (130)
14	100	465	1.2	MRT 120	F120S (130)
14	100	480	2.4	MRT 150	F150S (165)

P_1=1.1kW		n_1=900 [rpm]			90-6p
180	5	52	2.4	MRT 60	F60M (115)
180	5	52	1.4	MRT 50	(115)
180	5	53	3.1	MRT 70	F70M (115)
120	7.5	75	1.0	MRT 50	(115)
120	7.5	77	1.7	MRT 60	F60M (115)
120	7.5	78	2.2	MRT 70	F70M (115)
120	7.5	80	2.7	MRT 80	F80S (115)
90	10	100	0.8	MRT 50	(115)
90	10	103	1.2	MRT 60	F60M (115)
90	10	105	2.0	MRT 80	F80S (115)
90	10	105	1.8	MRT 70	F70M (115)
72	12.5	125	1.0	MRT 60	F60M (115)
72	12.5	128	1.9	MRT 80	F80S (115)
72	12.5	128	1.5	MRT 70	F70M (115)
60	15	149	1.9	MRT 80	F80S (115)
60	15	149	0.9	MRT 60	F60M (115)
60	15	151	1.3	MRT 70	F70M (115)
60	15	152	3.4	MRT 100	F100S (130)
45	20	194	2.4	MRT 100	F100S (130)
45	20	196	1.0	MRT 70	F70M (115)
45	20	198	1.3	MRT 80	F80S (115)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft prior to alterations*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
36	25	233	1.9	MRT 100	F100S (130)
36	25	236	0.8	MRT 70	F70M (115)
36	25	239	1.0	MRT 80	F80S (115)
36	25	242	2.9	MRT 120	F120S (130)
30	30	259	1.2	MRT 80	F80S (115)
30	30	266	0.8	MRT 70	F70M (115)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
12	120	582	1.1	MRP 100	F100M (165)
12	120	590	1.7	MRP 120	F120M (165)
9	150	695	0.9	MRP 100	F100M (165)
9	150	716	1.3	MRP 120	F120M (165)
8	180	783	1.1	MRP 120	F120M (165)
6	240	1095	0.8	MRP 120	F120M (165)

P_1=1.1kW		n_1=2800 [rpm]			80-2p
30	30	270	2.1	MRT 100	F100S (130)
30	30	277	3.3	MRT 120	F120S (130)
23	40	336	0.9	MRT 80	F80S (115)
23	40	336	1.6	MRT 100	F100S (130)
23	40	341	2.5	MRT 120	F120S (130)
18	50	397	1.3	MRT 100	F100S (130)
18	50	414	1.9	MRT 120	F120S (130)
15	60	441	1.1	MRT 100	F100S (130)
15	60	448	1.7	MRT 120	F120S (130)
15	60	497	2.8	MRT 150	F150S (165)
13	70	507	0.9	MRT 100	F100S (130)
13	70	547	2.6	MRT 150	F150S (165)
13	70	556	1.3	MRT 120	F120S (130)
11	80	598	2.3	MRT 150	F150S (165)
11	80	626	1.1	MRT 120	F120S (130)
9	100	700	0.9	MRT 120	F120S (130)
9	100	724	1.8	MRT 150	F150S (165)

P_1=1.1kW		n_1=900 [rpm]			90-6p
12	75	619	0.9	MRP 100	F100M (165)
12	75	644	1.4	MRP 120	F120M (165)
10	90	714	1.0	MRP 100	F100M (165)
10	90	734	1.6	MRP 120	F120M (165)
8	120	887	0.8	MRP 100	F100M (165)
8	120	900	1.2	MRP 120	F120M (165)
6	150	1092	0.9	MRP 120	F120M (165)
5	180	1193	0.8	MRP 120	F120M (165)

P_1=1.1kW		n_1=2800 [rpm]			80-2p
37	75	207	2.1	MRP 100	F100M (165)
37	75	215	3.2	MRP 120	F120M (165)
31	90	239	2.3	MRP 100	F100M (165)
31	90	245	3.6	MRP 120	F120M (165)
23	120	297	1.8	MRP 100	F100M (165)
23	120	301	2.8	MRP 120	F120M (165)
19	150	354	1.4	MRP 100	F100M (165)
19	150	365	2.1	MRP 120	F120M (165)
16	180	393	1.2	MRP 100	F100M (165)
16	180	399	1.9	MRP 120	F120M (165)
12	240	515	0.8	MRP 100	F100M (165)
12	240	558	1.3	MRP 120	F120M (165)
9	300	622	0.9	MRP 120	F120M (165)

P_1=1.1kW		n_1=1400 [rpm]			90-4p
19	75	406	1.3	MRP 100	F100M (165)
19	75	422	2.0	MRP 120	F120M (165)
16	90	468	1.4	MRP 100	F100M (165)
16	90	481	2.2	MRP 120	F120M (165)

P_1=1.5kW		n_1=2800 [rpm]			90-2p
560	5	23	2.4	MRT 50	(115)
373	8	34	1.7	MRT 50	(115)
373	7.5	35	2.9	MRT 60	F60M (115)
280	10	45	1.3	MRT 50	(115)
280	10	46	2.0	MRT 60	F60M (115)
280	10	47	3.0	MRT 70	F70M (115)
280	10	47	3.4	MRT 80	F80S (115)
224	13	56	1.0	MRT 50	(115)
224	12.5	56	1.7	MRT 60	F60M (115)
224	12.5	58	2.6	MRT 70	F70M (115)
224	12.5	58	3.2	MRT 80	F80S (115)
187	15	67	1.5	MRT 60	F60M (115)
187	15	67	3.1	MRT 80	F80S (115)
187	15	68	2.3	MRT 70	F70M (115)
186	15	66	1.0	MRT 50	(115)
140	20	86	1.1	MRT 60	F60M (115)
140	20	88	1.6	MRT 70	F70M (115)
140	20	89	2.2	MRT 80	F80S (115)
112	25	102	1.0	MRT 60	F60M (115)
112	25	105	3.2	MRT 100	F100S (130)
112	25	106	1.3	MRT 70	F70M (115)
112	25	107	1.8	MRT 80	F80S (115)
93	30	117	2.1	MRT 80	F80S (115)
93	30	118	1.0	MRT 60	F60M (115)
93	30	120	1.4	MRT 70	F70M (115)
93	30	121	3.5	MRT 100	F100S (130)
70	40	151	1.0	MRT 70	F70M (115)
70	40	151	1.5	MRT 80	F80S (115)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
70	40	151	2.7	MRT 100	F100S (130)
56	50	179	2.2	MRT 100	F100S (130)
56	50	184	1.1	MRT 80	F80S (115)
56	50	187	3.2	MRT 120	F120S (130)
47	60	200	1.9	MRT 100	F100S (130)
47	60	203	2.8	MRT 120	F120S (130)
40	70	229	1.5	MRT 100	F100S (130)
40	70	251	2.2	MRT 120	F120S (130)
35	80	262	1.2	MRT 100	F100S (130)
35	80	282	1.9	MRT 120	F120S (130)
28	100	276	1.0	MRT 100	F100S (130)
28	100	327	1.4	MRT 120	F120S (130)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
28	50	353	1.3	MRT 100	F100S (130)
28	50	368	1.9	MRT 120	F120S (130)
28	50	399	3.4	MRT 150	F150S (165)
23	60	393	1.1	MRT 100	F100S (130)
23	60	399	1.7	MRT 120	F120S (130)
23	60	442	2.9	MRT 150	F150S (165)
20	70	451	0.9	MRT 100	F100S (130)
20	70	487	2.6	MRT 150	F150S (165)
20	70	494	1.3	MRT 120	F120S (130)
18	80	532	2.3	MRT 150	F150S (165)
18	80	557	1.1	MRT 120	F120S (130)
14	100	634	0.9	MRT 120	F120S (130)
14	100	655	1.8	MRT 150	F150S (165)

P_1=1.5kW		n_1=1400 [rpm]			90-4p
280	5	46	2.4	MRT 60	F60M (115)
280	5	46	1.4	MRT 50	(115)
280	5	47	3.2	MRT 70	F70M (115)
187	7.5	67	1.0	MRT 50	(115)
187	7.5	68	1.8	MRT 60	F60M (115)
187	7.5	69	2.2	MRT 70	F70M (115)
187	7.5	71	2.8	MRT 80	F80S (115)
140	10	89	0.8	MRT 50	(115)
140	10	91	1.2	MRT 60	F60M (115)
140	10	93	1.8	MRT 70	F70M (115)
140	10	93	2.0	MRT 80	F80S (115)
112	12.5	111	1.0	MRT 60	F60M (115)
112	12.5	114	1.6	MRT 70	F70M (115)
112	12.5	114	1.9	MRT 80	F80S (115)
93	15	132	0.9	MRT 60	F60M (115)
93	15	132	1.9	MRT 80	F80S (115)
93	15	134	1.4	MRT 70	F70M (115)
93	15	135	3.4	MRT 100	F100S (130)
70	20	172	2.4	MRT 100	F100S (130)
70	20	174	1.0	MRT 70	F70M (115)
70	20	176	1.3	MRT 80	F80S (115)
56	25	207	1.9	MRT 100	F100S (130)
56	25	210	0.8	MRT 70	F70M (115)
56	25	212	1.1	MRT 80	F80S (115)
56	25	215	2.9	MRT 120	F120S (130)
47	30	230	1.2	MRT 80	F80S (115)
47	30	236	0.8	MRT 70	F70M (115)
47	30	239	2.1	MRT 100	F100S (130)
47	30	246	3.3	MRT 120	F120S (130)
35	40	299	0.9	MRT 80	F80S (115)
35	40	299	1.6	MRT 100	F100S (130)
35	40	303	2.5	MRT 120	F120S (130)

P_1=1.5kW		n_1=900 [rpm]			100-6p
180	5	71	1.70	MRT 60	F60L(130)
180	5	72	2.30	MRT 70	F70L(130)
180	5	73	2.90	MRT 80	F80M (130)
120	7.5	105	1.30	MRT 60	F60L(130)
120	7.5	106	1.60	MRT 70	F70L(130)
120	7.5	107	3.30	MRT 100	F100S (130)
120	7.5	109	2.00	MRT 80	F80M (130)
90	10	140	2.80	MRT 100	F100S (130)
90	10	140	0.90	MRT 60	F60L(130)
90	10	143	1.50	MRT 80	F80M (130)
90	10	143	1.30	MRT 70	F70L(130)
72	12.5	175	1.40	MRT 80	F80M (130)
72	12.5	175	1.10	MRT 70	F70L(130)
72	12.5	177	2.80	MRT 100	F100S (130)
60	15	203	1.40	MRT 80	F80M (130)
60	15	205	1.00	MRT 70	F70L(130)
60	15	208	2.50	MRT 100	F100S (130)
45	20	264	1.70	MRT 100	F100S (130)
45	20	267	2.60	MRT 120	F120S (130)
45	20	271	1.00	MRT 80	F80M (130)
36	25	318	1.40	MRT 100	F100S (130)
36	25	326	0.80	MRT 80	F80M (130)
36	25	330	2.10	MRT 120	F120S (130)
30	30	353	0.90	MRT 80	F80M (130)
30	30	368	1.50	MRT 100	F100S (130)
30	30	377	2.40	MRT 120	F120S (130)
23	40	458	1.20	MRT 100	F100S (130)
23	40	465	1.80	MRT 120	F120S (130)
23	40	497	3.50	MRT 150	F150S (165)
18	50	541	0.90	MRT 100	F100S (130)
18	50	565	1.40	MRT 120	F120S (130)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
18	50	613	2.40	MRT 150	F150S (165)
15	60	602	0.80	MRT 100	F100S (130)
15	60	611	1.20	MRT 120	F120S (130)
15	60	678	2.10	MRT 150	F150S (165)
13	70	735	3.04	MRT 180	F180S (215)
13	70	746	1.88	MRT 150	F150S (165)
13	70	758	0.98	MRT 120	F120S (130)
11	80	815	1.70	MRT 150	F150S (165)
11	80	815	2.60	MRT 180	F180S (215)
11	80	853	0.80	MRT 120	F120S (130)
9	100	987	1.30	MRT 150	F150S (165)
9	100	1003	2.10	MRT 180	F180S (215)

P_1=1.5kW		n_1=2800 [rpm]			90-2p
47	60	238	2.9	MRP 120	F120M (165)
37	75	283	1.5	MRP 100	F100M (165)
37	75	294	2.3	MRP 120	F120M (165)
31	90	326	1.7	MRP 100	F100M (165)
31	90	335	2.6	MRP 120	F120M (165)
23	120	405	1.3	MRP 100	F100M (165)
23	120	410	2.0	MRP 120	F120M (165)
19	150	483	1.0	MRP 100	F100M (165)
19	150	498	1.5	MRP 120	F120M (165)
16	180	535	0.9	MRP 100	F100M (165)
16	180	544	1.4	MRP 120	F120M (165)
12	240	761	0.9	MRP 120	F120M (165)

P_1=1.5kW		n_1=1400 [rpm]			90-4p
19	75	554	0.9	MRP 100	F100M (165)
19	75	576	1.4	MRP 120	F120M (165)
16	90	639	1.0	MRP 100	F100M (165)
16	90	656	1.6	MRP 120	F120M (165)
12	120	793	0.8	MRP 100	F100M (165)
12	120	805	1.2	MRP 120	F120M (165)
9	150	977	0.9	MRP 120	F120M (165)
8	180	1067	0.8	MRP 120	F120M (165)

P_1=1.5kW		n_1=900 [rpm]			100-6p
12	75	867	1.80	MRP 150	F150M (215)
12	75	878	3.00	MRP 180	F180S (215)
10	90	1014	3.30	MRP 180	F180S (215)
10	90	1054	2.10	MRP 150	F150M (215)
8	120	1298	2.50	MRP 180	F180S (215)
8	120	1316	1.70	MRP 150	F150M (215)
6	150	1511	2.10	MRP 180	F180S (215)
6	150	1623	1.20	MRP 150	F150M (215)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
5	180	1707	1.80	MRP 180	F180S (215)
5	180	1787	1.00	MRP 150	F150M (215)
4	240	2169	0.80	MRP 150	F150M (215)
4	240	2169	1.30	MRP 180	F180S (215)
3	300	2667	1.00	MRP 180	F180S (215)

P_1=2.2kW		n_1=2800 [rpm]			90-2p
560	5	34	2.7	MRT 60	F60M (115)
560	5	34	1.6	MRT 50	(115)
373	7.5	51	2.0	MRT 60	F60M (115)
373	7.5	51	2.5	MRT 70	F70M (115)
373	7.5	52	3.1	MRT 80	F80S (115)
373	7.5	50	1.1	MRT 50	(115)
280	10	66	0.9	MRT 50	(115)
280	10	68	1.4	MRT 60	F60M (115)
280	10	69	2.0	MRT 70	F70M (115)
280	10	69	2.3	MRT 80	F80S (115)
224	12.5	83	1.1	MRT 60	F60M (115)
224	12.5	84	1.8	MRT 70	F70M (115)
224	12.5	84	2.2	MRT 80	F80S (115)
187	15	98	1.0	MRT 60	F60M (115)
187	15	98	2.1	MRT 80	F80S (115)
187	15	99	1.5	MRT 70	F70M (115)
140	20	128	2.7	MRT 100	F100S (130)
140	20	129	1.1	MRT 70	F70M (115)
140	20	131	1.5	MRT 80	F80S (115)
112	25	154	2.2	MRT 100	F100S (130)
112	25	158	1.2	MRT 80	F80S (115)
112	25	159	3.3	MRT 120	F120S (130)
93	30	171	1.4	MRT 80	F80S (115)
93	30	178	2.4	MRT 100	F100S (130)
70	40	222	1.0	MRT 80	F80S (115)
70	40	222	1.8	MRT 100	F100S (130)
70	40	225	2.8	MRT 120	F120S (130)
56	50	263	1.5	MRT 100	F100S (130)
56	50	274	2.2	MRT 120	F120S (130)
47	60	293	1.3	MRT 100	F100S (130)
47	60	297	1.9	MRT 120	F120S (130)
47	60	329	3.2	MRT 150	F150S (165)
40	70	336	1.0	MRT 100	F100S (130)
40	70	362	2.9	MRT 150	F150S (165)
40	70	368	1.5	MRT 120	F120S (130)
35	80	396	2.7	MRT 150	F150S (165)
35	80	414	1.3	MRT 120	F120S (130)
28	100	495	2.0	MRT 150	F150S (165)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
P_1=2.2kW		n_1=1400 [rpm]			100-4p
280	5	68	1.6	MRT 60	F60L(130)
280	5	68	2.2	MRT 70	F70L(130)
280	5	70	2.7	MRT 80	F80M (130)
187	7.5	100	1.2	MRT 60	F60L(130)
187	7.5	101	1.5	MRT 70	F70L(130)
187	7.5	102	3.1	MRT 100	F100S (130)
187	7.5	104	1.9	MRT 80	F80M (130)
140	10	134	2.6	MRT 100	F100S (130)
140	10	134	0.8	MRT 60	F60L(130)
140	10	137	1.4	MRT 80	F80M (130)
140	10	137	1.2	MRT 70	F70L(130)
112	12.5	167	1.3	MRT 80	F80M (130)
112	12.5	167	1.1	MRT 70	F70L(130)
112	12.5	169	2.6	MRT 100	F100S (130)
93	15	194	1.3	MRT 80	F80M (130)
93	15	196	0.9	MRT 70	F70L(130)
93	15	198	2.3	MRT 100	F100S (130)
70	20	252	1.6	MRT 100	F100S (130)
70	20	255	2.5	MRT 120	F120S (130)
70	20	258	0.9	MRT 80	F80M (130)
56	25	304	1.3	MRT 100	F100S (130)
56	25	311	3.4	MRT 150	F150S (165)
56	25	315	2.0	MRT 120	F120S (130)
47	30	338	0.8	MRT 80	F80M (130)
47	30	351	1.4	MRT 100	F100S (130)
47	30	360	2.2	MRT 120	F120S (130)
35	40	438	1.1	MRT 100	F100S (130)
35	40	444	1.7	MRT 120	F120S (130)
35	40	474	3.2	MRT 150	F150S (165)
28	50	518	0.9	MRT 100	F100S (130)
28	50	540	1.3	MRT 120	F120S (130)
28	50	585	2.3	MRT 150	F150S (165)
23	60	576	0.8	MRT 100	F100S (130)
23	60	585	1.2	MRT 120	F120S (130)
23	60	612	3.4	MRT 180	F180S (215)
23	60	648	1.9	MRT 150	F150S (165)
20	70	704	2.8	MRT 180	F180S (215)
20	70	714	1.8	MRT 150	F150S (165)
20	70	725	0.9	MRT 120	F120S (130)
18	80	780	1.6	MRT 150	F150S (165)
18	80	780	2.4	MRT 180	F180S (215)
18	80	816	0.8	MRT 120	F120S (130)
14	100	960	1.2	MRT 150	F150S (165)
14	100	960	2.0	MRT 180	F180S (215)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
P_1=2.2kW		n_1=900 [rpm]			112-6p
180	5	104	1.2	MRT 60	F60L(130)
180	5	105	1.6	MRT 70	F70L(130)
180	5	107	2.0	MRT 80	F80M (130)
120	7.5	154	0.9	MRT 60	F60L(130)
120	7.5	156	1.1	MRT 70	F70L(130)
120	7.5	158	2.3	MRT 100	F100S (130)
120	7.5	159	1.4	MRT 80	F80M (130)
90	10	205	1.9	MRT 100	F100S (130)
90	10	210	1.0	MRT 80	F80M (130)
90	10	210	0.9	MRT 70	F70L(130)
90	10	212	3.4	MRT 120	F120S (130)
72	12.5	257	1.0	MRT 80	F80M (130)
72	12.5	257	0.8	MRT 70	F70L(130)
72	12.5	260	1.9	MRT 100	F100S (130)
72	12.5	263	2.9	MRT 120	F120S (130)
60	15	298	0.9	MRT 80	F80M (130)
60	15	305	1.7	MRT 100	F100S (130)
60	15	308	2.6	MRT 120	F120S (130)
45	20	388	1.2	MRT 100	F100S (130)
45	20	392	1.8	MRT 120	F120S (130)
45	20	411	3.3	MRT 150	F150S (165)
36	25	467	1.0	MRT 100	F100S (130)
36	25	479	2.5	MRT 150	F150S (165)
36	25	484	1.5	MRT 120	F120S (130)
30	30	539	1.0	MRT 100	F100S (130)
30	30	553	1.6	MRT 120	F120S (130)
30	30	581	2.8	MRT 150	F150S (165)
23	40	672	0.8	MRT 100	F100S (130)
23	40	682	1.2	MRT 120	F120S (130)
23	40	719	3.4	MRT 180	F180S (215)
23	40	728	2.4	MRT 150	F150S (165)
18	50	829	0.9	MRT 120	F120S (130)
18	50	840	2.8	MRT 180	F180S (215)
18	50	899	1.7	MRT 150	F150S (165)
15	60	896	0.8	MRT 120	F120S (130)
15	60	938	2.5	MRT 180	F180S (215)
15	60	994	1.4	MRT 150	F150S (165)
13	70	1079	2.1	MRT 180	F180S (215)
13	70	1095	1.3	MRT 150	F150S (165)
11	80	1195	1.2	MRT 150	F150S (165)
11	80	1195	1.8	MRT 180	F180S (215)
9	100	1447	0.9	MRT 150	F150S (165)
9	100	1471	1.4	MRT 180	F180S (215)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
P_1=2.2kW		n_1=2800 [rpm]			90-2p
37	75	414	1.1	MRP 100	F100M (165)
37	75	431	1.6	MRP 120	F120M (165)
31	90	478	1.1	MRP 100	F100M (165)
31	90	491	1.8	MRP 120	F120M (165)
23	120	593	0.9	MRP 100	F100M (165)
23	120	602	1.4	MRP 120	F120M (165)
19	150	731	1.0	MRP 120	F120M (165)
16	180	798	0.9	MRP 120	F120M (165)
P_1=2.2kW		n_1=1400 [rpm]			100-4p
19	75	834	1.7	MRP 150	F150M (215)
19	75	845	2.8	MRP 180	F180S (215)
16	90	975	3.1	MRP 180	F180S (215)
16	90	1014	1.9	MRP 150	F150M (215)
12	120	1249	2.3	MRP 180	F180S (215)
12	120	1266	1.6	MRP 150	F150M (215)
9	150	1454	1.9	MRP 180	F180S (215)
9	150	1561	1.1	MRP 150	F150M (215)
8	180	1642	1.7	MRP 180	F180S (215)
8	180	1719	1.0	MRP 150	F150M (215)
6	240	2087	0.8	MRP 150	F150M (215)
6	240	2087	1.2	MRP 180	F180S (215)
5	300	2566	1.0	MRP 180	F180S (215)
P_1=2.2kW		n_1=900 [rpm]			112-6p
12	75	1271	1.2	MRP 150	F150M (215)
12	75	1288	2.1	MRP 180	F180S (215)
10	90	1487	2.2	MRP 180	F180S (215)
10	90	1545	1.4	MRP 150	F150M (215)
8	120	1904	1.7	MRP 180	F180S (215)
8	120	1930	1.2	MRP 150	F150M (215)
6	150	2217	1.4	MRP 180	F180S (215)
6	150	2380	0.8	MRP 150	F150M (215)
5	180	2504	1.2	MRP 180	F180S (215)
4	240	3182	0.9	MRP 180	F180S (215)
P_1=3.0kW		n_1=2800 [rpm]			100-2p
560	5	47	2.0	MRT 60	F60L(130)
560	5	47	2.6	MRT 70	F70L(130)
560	5	48	3.3	MRT 80	F80M (130)
373	7.5	69	1.5	MRT 60	F60L(130)
373	7.5	70	1.8	MRT 70	F70L(130)
373	7.5	71	2.3	MRT 80	F80M (130)
280	10	92	3.2	MRT 100	F100S (130)
280	10	92	1.0	MRT 60	F60L(130)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
280	10	94	1.7	MRT 80	F80M (130)
280	10	94	1.5	MRT 70	F70L(130)
224	12.5	113	0.8	MRT 60	F60L(130)
224	12.5	115	1.6	MRT 80	F80M (130)
224	12.5	115	1.3	MRT 70	F70L(130)
224	12.5	116	3.2	MRT 100	F100S (130)
187	15	134	0.8	MRT 60	F60L(130)
187	15	134	1.6	MRT 80	F80M (130)
187	15	135	1.1	MRT 70	F70L(130)
187	15	137	2.9	MRT 100	F100S (130)
140	20	174	2.0	MRT 100	F100S (130)
140	20	176	3.0	MRT 120	F120S (130)
140	20	176	0.8	MRT 70	F70L(130)
140	20	178	1.1	MRT 80	F80M (130)
112	25	210	1.6	MRT 100	F100S (130)
112	25	217	2.4	MRT 120	F120S (130)
93	30	233	1.0	MRT 80	F80M (130)
93	30	243	1.7	MRT 100	F100S (130)
93	30	249	2.7	MRT 120	F120S (130)
70	40	303	1.3	MRT 100	F100S (130)
70	40	307	2.1	MRT 120	F120S (130)
56	50	358	1.1	MRT 100	F100S (130)
56	50	373	1.6	MRT 120	F120S (130)
56	50	404	2.8	MRT 150	F150S (165)
47	60	405	1.4	MRT 120	F120S (130)
47	60	448	2.4	MRT 150	F150S (165)
40	70	494	2.1	MRT 150	F150S (165)
35	80	540	1.9	MRT 150	F150S (165)
35	80	540	3.0	MRT 180	F180S (215)
35	80	565	1.0	MRT 120	F120S (130)
28	100	665	2.4	MRT 180	F180S (215)
28	100	675	1.4	MRT 150	F150S (165)
P_1=3.0kW		n_1=1400 [rpm]			100-4p
280	5	92	1.2	MRT 60	F60L(130)
280	5	93	1.6	MRT 70	F70L(130)
280	5	95	2.0	MRT 80	F80M (130)
187	7.5	137	0.9	MRT 60	F60L(130)
187	7.5	138	1.1	MRT 70	F70L(130)
187	7.5	140	2.3	MRT 100	F100S (130)
187	7.5	141	1.4	MRT 80	F80M (130)
140	10	182	1.9	MRT 100	F100S (130)
140	10	186	1.0	MRT 80	F80M (130)
140	10	186	0.9	MRT 70	F70L(130)
140	10	188	3.4	MRT 120	F120S (130)
112	12.5	228	1.0	MRT 80	F80M (130)

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7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
112	12.5	228	0.8	MRT 70	F70L(130)
112	12.5	230	1.9	MRT 100	F100S (130)
112	12.5	233	3.0	MRT 120	F120S (130)
93	15	264	0.9	MRT 80	F80M (130)
93	15	270	1.7	MRT 100	F100S (130)
93	15	273	2.6	MRT 120	F120S (130)
70	20	344	1.2	MRT 100	F100S (130)
70	20	348	1.8	MRT 120	F120S (130)
70	20	364	3.3	MRT 150	F150S (165)
56	25	414	1.0	MRT 100	F100S (130)
56	25	425	2.5	MRT 150	F150S (165)
56	25	430	1.5	MRT 120	F120S (130)
47	30	479	1.0	MRT 100	F100S (130)
47	30	491	1.6	MRT 120	F120S (130)
47	30	516	2.9	MRT 150	F150S (165)
35	40	598	0.8	MRT 100	F100S (130)
35	40	606	1.3	MRT 120	F120S (130)
35	40	638	3.5	MRT 180	F180S (215)
35	40	647	2.4	MRT 150	F150S (165)
28	50	737	1.0	MRT 120	F120S (130)
28	50	747	2.8	MRT 180	F180S (215)
28	50	798	1.7	MRT 150	F150S (165)
23	60	798	0.9	MRT 120	F120S (130)
23	60	835	2.5	MRT 180	F180S (215)
23	60	884	1.4	MRT 150	F150S (165)
20	70	960	2.1	MRT 180	F180S (215)
20	70	974	1.3	MRT 150	F150S (165)
18	80	1064	1.2	MRT 150	F150S (165)
18	80	1064	1.8	MRT 180	F180S (215)
14	100	1310	0.9	MRT 150	F150S (165)
14	100	1310	1.4	MRT 180	F180S (215)

P_1=3.0kW		n_1=900 [rpm]			132-6p
180	5	146	1.4	MRT 80	F80L(165)
120	7.5	215	1.7	MRT 100	F100M(165)
120	7.5	217	1.0	MRT 80	F80L(165)
120	7.5	220	2.7	MRT 120	F120M(165)
90	10	280	1.4	MRT 100	F100M(165)
90	10	290	2.5	MRT 120	F120M(165)
72	12.5	354	1.4	MRT 100	F100M(165)
72	12.5	358	2.2	MRT 120	F120M(165)
60	15	415	1.2	MRT 100	F100M(165)
60	15	420	3.2	MRT 150	F150S (165)
60	15	420	1.9	MRT 120	F120M(165)
45	20	528	0.9	MRT 100	F100M(165)
45	20	535	1.3	MRT 120	F120M(165)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
45	20	560	2.4	MRT 150	F150S (165)
36	25	653	1.8	MRT 150	F150S (165)
36	25	661	3.1	MRT 180	F180M (265)
36	25	661	1.1	MRT 120	F120M(165)
30	30	735	0.8	MRT 100	F100M(165)
30	30	755	1.2	MRT 120	F120M(165)
30	30	764	3.3	MRT 180	F180M (265)
30	30	793	2.1	MRT 150	F150S (165)
23	40	930	0.9	MRT 120	F120M(165)
23	40	980	2.5	MRT 180	F180M (265)
23	40	993	1.7	MRT 150	F150S (165)
18	50	1146	2.1	MRT 180	F180M (265)
18	50	1226	1.2	MRT 150	F150S (165)
15	60	1280	1.8	MRT 180	F180M (265)
15	60	1356	1.0	MRT 150	F150S (165)
13	70	1471	1.5	MRT 180	F180M (265)
13	70	1493	0.9	MRT 150	F150S (165)
11	80	1630	0.9	MRT 150	F150S (165)
11	80	1630	1.3	MRT 180	F180M (265)
9	100	2006	1.0	MRT 180	F180M (265)

P_1=3.0kW		n_1=2800 [rpm]			100-2p
37	75	580	2.0	MRP 150	F150M (215)
37	75	587	3.4	MRP 180	F180S (215)
31	90	705	2.3	MRP 150	F150M (215)
23	120	869	2.8	MRP 180	F180S (215)
23	120	880	1.9	MRP 150	F150M (215)
19	150	1011	2.3	MRP 180	F180S (215)
19	150	1086	1.3	MRP 150	F150M (215)
16	180	1142	2.0	MRP 180	F180S (215)
16	180	1196	1.2	MRP 150	F150M (215)
12	240	1452	0.9	MRP 150	F150M (215)
12	240	1452	1.4	MRP 180	F180S (215)
9	300	1785	1.2	MRP 180	F180S (215)

P_1=3.0kW		n_1=1400 [rpm]			100-4p
19	75	1137	1.2	MRP 150	F150M (215)
19	75	1152	2.1	MRP 180	F180S (215)
16	90	1330	2.2	MRP 180	F180S (215)
16	90	1382	1.4	MRP 150	F150M (215)
12	120	1703	1.7	MRP 180	F180S (215)
12	120	1726	1.2	MRP 150	F150M (215)
9	150	1983	1.4	MRP 180	F180S (215)
9	150	2129	0.8	MRP 150	F150M (215)
8	180	2240	1.2	MRP 180	F180S (215)
6	240	2846	0.9	MRP 180	F180S (215)

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7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
P_1=4,0kW		n_1=2800 [rpm]			112-2p
560	5	62	1.5	MRT 60	F60L(130)
560	5	63	2.0	MRT 70	F70L(130)
560	5	64	2.5	MRT 80	F80M(130)
373	7.5	92	1.1	MRT 60	F60L(130)
373	7.5	93	1.4	MRT 70	F70L(130)
373	7.5	94	2.9	MRT 100	F100S (130)
373	7.5	95	1.7	MRT 80	F80M(130)
280	10	123	2.4	MRT 100	F100S (130)
280	10	123	0.8	MRT 60	F60L(130)
280	10	126	1.1	MRT 70	F70L(130)
280	10	126	1.3	MRT 80	F80M(130)
227	12.5	154	1.0	MRT 70	F70L(130)
224	12.5	154	1.2	MRT 80	F80M(130)
224	12.5	155	2.4	MRT 100	F100S (130)
187	15	178	1.2	MRT 80	F80M(130)
187	15	180	0.8	MRT 70	F70L(130)
187	15	182	2.1	MRT 100	F100S (130)
187	15	184	3.3	MRT 120	F120S (130)
140	20	232	1.5	MRT 100	F100S (130)
140	20	235	2.3	MRT 120	F120S (130)
140	20	237	0.8	MRT 80	F80M(130)
140	20	246	4.1	MRT 150	F150S (165)
112	25	280	1.2	MRT 100	F100S (130)
112	25	287	3.1	MRT 150	F150S (165)
112	25	290	1.8	MRT 120	F120S (130)
93	30	323	1.3	MRT 100	F100S (130)
93	30	332	2.1	MRT 120	F120S (130)
70	40	404	1.0	MRT 100	F100S (130)
70	40	409	1.6	MRT 120	F120S (130)
70	40	437	3.0	MRT 150	F150S (165)
56	50	498	1.2	MRT 120	F120S (130)
56	50	505	3.5	MRT 180	F180S (215)
56	50	539	2.1	MRT 150	F150S (165)
47	60	540	1.1	MRT 120	F120S (130)
47	60	565	3.1	MRT 180	F180S (215)
47	60	598	1.8	MRT 150	F150S (165)
40	70	649	2.6	MRT 180	F180S (215)
40	70	659	1.6	MRT 150	F150S (165)
40	70	669	0.8	MRT 120	F120S (130)
35	80	720	1.5	MRT 150	F150S (165)
35	80	720	2.2	MRT 180	F180S (215)
28	100	887	1.8	MRT 180	F180S (215)
28	100	900	1.1	MRT 150	F150S (165)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
P_1=4.0kW		n_1=1400 [rpm]			112-4p
280	5	123	0.9	MRT 60	F60L(130)
280	5	124	1.2	MRT 70	F70L(130)
280	5	127	1.5	MRT 80	F80M(130)
187	7.5	184	0.8	MRT 70	F70L(130)
187	7.5	186	1.7	MRT 100	F100S (130)
187	7.5	188	1.0	MRT 80	F80M(130)
187	7.5	190	2.8	MRT 120	F120S (130)
140	10	243	1.4	MRT 100	F100S (130)
140	10	248	0.8	MRT 80	F80M(130)
140	10	251	2.5	MRT 120	F120S (130)
112	12.5	307	1.4	MRT 100	F100S (130)
112	12.5	310	2.2	MRT 120	F120S (130)
93	15	360	1.3	MRT 100	F100S (130)
93	15	364	2.0	MRT 120	F120S (130)
93	15	364	3.3	MRT 150	F150S (165)
70	20	458	0.9	MRT 100	F100S (130)
70	20	464	1.4	MRT 120	F120S (130)
70	20	486	2.5	MRT 150	F150S (165)
56	25	566	1.9	MRT 150	F150S (165)
56	25	573	1.1	MRT 120	F120S (130)
56	25	573	3.2	MRT 180	F180S (215)
47	30	655	1.2	MRT 120	F120S (130)
47	30	663	3.4	MRT 180	F180S (215)
47	30	688	2.2	MRT 150	F150S (165)
35	40	808	0.9	MRT 120	F120S (130)
35	40	851	2.6	MRT 180	F180S (215)
35	40	862	1.8	MRT 150	F150S (165)
28	50	996	2.1	MRT 180	F180S (215)
28	50	1064	1.3	MRT 150	F150S (165)
23	60	1113	1.9	MRT 180	F180S (215)
23	60	1179	1.1	MRT 150	F150S (165)
20	70	1280	1.6	MRT 180	F180S (215)
20	70	1299	1.0	MRT 150	F150S (165)
18	80	1419	0.9	MRT 150	F150S (165)
18	80	1419	1.3	MRT 180	F180S (215)
14	100	1746	1.1	MRT 180	F180S (215)

P_1=4.0kW		n_1=900 [rpm]			132-6p
180	5	195	1.1	MRT 80	F80M(130)
120	7.5	287	1.2	MRT 100	F100M(165)
120	7.5	290	0.8	MRT 80	F80M(130)
120	7.5	293	2.1	MRT 120	F120M(165)
90	10	374	1.0	MRT 100	F100M(165)
90	10	382	3.3	MRT 150	F150S (165)
90	10	386	1.9	MRT 120	F120M(165)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
72	12.5	472	1.0	MRT 100	F100M(165)
72	12.5	478	2.9	MRT 150	F150S (165)
72	12.5	478	1.6	MRT 120	F120M(165)
60	15	554	0.9	MRT 100	F100M(165)
60	15	560	2.4	MRT 150	F150S (165)
60	15	560	1.4	MRT 120	F120M(165)
45	20	713	1.0	MRT 120	F120M(165)
45	20	739	3.1	MRT 180	F180M (265)
45	20	747	1.8	MRT 150	F150S (165)
36	25	870	1.4	MRT 150	F150S (165)
36	25	881	2.3	MRT 180	F180M (265)
36	25	881	0.8	MRT 120	F120M(165)
30	30	1006	0.9	MRT 120	F120M(165)
30	30	1019	2.5	MRT 180	F180M (265)
30	30	1057	1.6	MRT 150	F150S (165)
23	40	1307	1.9	MRT 180	F180M (265)
23	40	1324	1.3	MRT 150	F150S (165)
18	50	1528	1.5	MRT 180	F180M (265)
18	50	1634	0.9	MRT 150	F150S (165)
15	60	1706	1.4	MRT 180	F180M (265)
15	60	1808	0.8	MRT 150	F150S (165)
13	70	1961	1.1	MRT 180	F180M (265)
11	80	2173	1.0	MRT 180	F180M (265)
9	100	2674	0.8	MRT 180	F180M (265)

P_1=4.0kW		n_1=2800 [rpm]			112-2p
37	75	773	1.5	MRP 150	F150M (215)
37	75	783	2.5	MRP 180	F180S (215)
31	90	904	2.7	MRP 180	F180S (215)
31	90	940	1.7	MRP 150	F150M (215)
23	120	1158	2.1	MRP 180	F180S (215)
23	120	1174	1.4	MRP 150	F150M (215)
19	150	1348	1.7	MRP 180	F180S (215)
19	150	1448	1.0	MRP 150	F150M (215)
16	180	1523	1.5	MRP 180	F180S (215)
16	180	1594	0.9	MRP 150	F150M (215)
12	240	1935	1.1	MRP 180	F180S (215)
9	300	2380	0.9	MRP 180	F180S (215)

P_1=4.0kW		n_1=1400 [rpm]			112-4p
19	75	1516	0.9	MRP 150	F150M (215)
19	75	1536	1.6	MRP 180	F180S (215)
16	90	1773	1.7	MRP 180	F180S (215)
16	90	1843	1.1	MRP 150	F150M (215)
12	120	2271	1.3	MRP 180	F180S (215)
12	120	2302	0.9	MRP 150	F150M (215)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
9	150	2644	1.1	MRP 180	F180S (215)
8	180	2986	0.9	MRP 180	F180S (215)

P_1=5.5kW		n_1=2800 [rpm]			132-2p
560	5	88	1.8	MRT 80	F80M(130)
373	7.5	129	2.1	MRT 100	F100M(165)
373	7.5	131	1.3	MRT 80	F80M(130)
373	7.5	132	3.4	MRT 120	F120M(165)
280	10	169	1.7	MRT 100	F100M(165)
280	10	173	0.9	MRT 80	F80M(130)
280	10	175	3.1	MRT 120	F120M(165)
224	12.5	211	0.9	MRT 80	F80M(130)
224	12.5	213	1.7	MRT 100	F100M(165)
224	12.5	216	2.7	MRT 120	F120M(165)
197	15	250	1.6	MRT 100	F100M(165)
187	15	245	0.9	MRT 80	F80M(130)
187	15	253	2.4	MRT 120	F120M(165)
140	20	319	1.1	MRT 100	F100M(165)
140	20	323	1.6	MRT 120	F120M(165)
140	20	338	3.0	MRT 150	F150S (165)
112	25	385	0.9	MRT 100	F100M(165)
112	25	394	2.3	MRT 150	F150S (165)
112	25	399	1.3	MRT 120	F120M(165)
93	30	445	0.9	MRT 100	F100M(165)
93	30	456	1.5	MRT 120	F120M(165)
93	30	478	2.6	MRT 150	F150S (165)
70	40	563	1.1	MRT 120	F120M(165)
70	40	593	3.1	MRT 180	F180M (265)
70	40	600	2.2	MRT 150	F150S (165)
56	50	685	0.9	MRT 120	F120M(165)
56	50	694	2.6	MRT 180	F180M (265)
56	50	741	1.5	MRT 150	F150S (165)
47	60	743	0.8	MRT 120	F120M(165)
47	60	777	2.3	MRT 180	F180M (265)
47	60	822	1.3	MRT 150	F150S (165)
40	70	893	1.9	MRT 180	F180M (265)
40	70	906	1.2	MRT 150	F150S (165)
35	80	990	1.1	MRT 150	F150S (165)
35	80	990	1.6	MRT 180	F180M (265)
28	100	1219	1.3	MRT 180	F180M (265)

P_1=5.5kW		n_1=1400 [rpm]			132-4p
280	5	175	1.1	MRT 80	F80M(130)
187	7.5	256	1.2	MRT 100	F100M(165)
187	7.5	259	0.8	MRT 80	F80M(130)
187	7.5	262	2.1	MRT 120	F120M(165)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft prior to alterations*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
140	10	334	1.0	MRT 100	F100M(165)
140	10	341	3.3	MRT 150	F150S (165)
140	10	345	1.9	MRT 120	F120M(165)
112	12.5	422	1.0	MRT 100	F100M(165)
112	12.5	427	2.9	MRT 150	F150S (165)
112	12.5	427	1.6	MRT 120	F120M(165)
93	15	495	0.9	MRT 100	F100M(165)
93	15	501	2.4	MRT 150	F150S (165)
93	15	501	1.4	MRT 120	F120M(165)
70	20	638	1.0	MRT 120	F120M(165)
70	20	660	3.1	MRT 180	F180M (265)
70	20	668	1.8	MRT 150	F150S (165)
56	25	778	1.4	MRT 150	F150S (165)
56	25	788	2.3	MRT 180	F180M (265)
56	25	788	0.8	MRT 120	F120M(165)
47	30	900	0.9	MRT 120	F120M(165)
47	30	912	2.5	MRT 180	F180M (265)
47	30	945	1.6	MRT 150	F150S (165)
35	40	1170	1.9	MRT 180	F180M (265)
35	40	1185	1.3	MRT 150	F150S (165)
28	50	1369	1.5	MRT 180	F180M (265)
28	50	1463	0.9	MRT 150	F150S (165)
23	60	1530	1.4	MRT 180	F180M (265)
23	60	1620	0.8	MRT 150	F150S (165)
20	70	1760	1.1	MRT 180	F180M (265)
18	80	1950	1.0	MRT 180	F180M (265)
14	100	2401	0.8	MRT 180	F180M (265)

P_1=5.5kW		n_1=900 [rpm]			132-6p
180	5	269	0.8	MRT 80	F80M(130)
120	7.5	394	0.9	MRT 100	F100M(165)
120	7.5	403	3.0	MRT 150	F150S (165)
120	7.5	403	1.5	MRT 120	F120M(165)
90	10	514	0.8	MRT 100	F100M(165)
90	10	525	2.4	MRT 150	F150S (165)
90	10	525	4.0	MRT 180	F180M (265)
90	10	531	1.3	MRT 120	F120M(165)
72	12.5	649	3.3	MRT 180	F180M (265)
72	12.5	649	0.8	MRT 100	F100M(165)
72	12.5	656	1.2	MRT 120	F120M(165)
72	12.5	657	2.1	MRT 150	F150S (165)
60	15	753	2.9	MRT 180	F180M (265)
60	15	770	1.8	MRT 150	F150S (165)
60	15	770	1.0	MRT 120	F120M(165)
45	20	1015	2.2	MRT 180	F180M (265)
45	20	1027	1.3	MRT 150	F150S (165)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
36	25	1196	1.0	MRT 150	F150S (165)
36	25	1211	1.7	MRT 180	F180M (265)
30	30	1401	1.8	MRT 180	F180M (265)
30	30	1453	1.1	MRT 150	F150S (165)
23	40	1798	1.4	MRT 180	F180M (265)
23	40	1821	0.9	MRT 150	F150S (165)
18	50	2101	1.1	MRT 180	F180M (265)
15	60	2346	1.0	MRT 180	F180M (265)
13	70	2696	0.8	MRT 180	F180M (265)

P_1=7.5kW		n_1=2800 [rpm]			132-2p
560	5	120	1.3	MRT 80	F80M(130)
373	7.5	177	1.5	MRT 100	F100M(165)
373	7.5	178	0.9	MRT 80	F80M(130)
373	7.5	180	2.5	MRT 120	F120M(165)
280	10	230	1.3	MRT 100	F100M(165)
280	10	238	2.3	MRT 120	F120M(165)
224	12.5	291	1.3	MRT 100	F100M(165)
224	12.5	294	3.5	MRT 150	F150S (165)
224	12.5	294	2.0	MRT 120	F120M(165)
187	15	342	1.1	MRT 100	F100M(165)
187	15	345	1.8	MRT 120	F120M(165)
187	15	345	3.0	MRT 150	F150S (165)
140	20	435	0.8	MRT 100	F100M(165)
140	20	440	1.2	MRT 120	F120M(165)
140	20	460	2.2	MRT 150	F150S (165)
112	25	537	1.7	MRT 150	F150S (165)
112	25	544	2.8	MRT 180	F180M (265)
112	25	544	1.0	MRT 120	F120M(165)
93	30	622	1.1	MRT 120	F120M(165)
93	30	629	3.0	MRT 180	F180M (265)
93	30	652	1.9	MRT 150	F150S (165)
70	40	767	0.8	MRT 120	F120M(165)
70	40	808	2.3	MRT 180	F180M (265)
70	40	819	1.6	MRT 150	F150S (165)
56	50	946	1.9	MRT 180	F180M (265)
56	50	1010	1.1	MRT 150	F150S (165)
47	60	1059	1.7	MRT 180	F180M (265)
40	70	1218	1.4	MRT 180	F180M (265)
35	80	1351	1.2	MRT 180	F180M (265)
28	100	1663	1.0	MRT 180	F180M (265)

P_1=7.5kW		n_1=1400 [rpm]			132-4p
280	5	238	0.8	MRT 80	F80M(130)
187	7.5	349	0.9	MRT 100	F100M(165)
187	7.5	357	1.5	MRT 120	F120M(165)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft*

7.4 Table of Performance Data

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
187	7.5	357	3.0	MRT 150	F150S (165)
140	10	455	0.8	MRT 100	F100M(165)
140	10	466	2.4	MRT 150	F150S (165)
140	10	471	1.4	MRT 120	F120M(165)
112	12.5	576	3.3	MRT 180	F180M (265)
112	12.5	576	0.8	MRT 100	F100M(165)
112	12.5	582	2.1	MRT 150	F150S (165)
112	12.5	582	1.2	MRT 120	F120M(165)
93	15	668	3.0	MRT 180	F180M (265)
93	15	683	1.8	MRT 150	F150S (165)
93	15	683	1.1	MRT 120	F120M(165)
70	20	900	2.3	MRT 180	F180M (265)
70	20	911	1.3	MRT 150	F150S (165)
56	25	1062	1.0	MRT 150	F150S (165)
56	25	1074	1.7	MRT 180	F180M (265)
47	30	1243	1.8	MRT 180	F180M (265)
47	30	1289	1.1	MRT 150	F150S (165)
35	40	1596	1.4	MRT 180	F180M (265)
35	40	1617	1.0	MRT 150	F150S (165)
28	50	1867	1.1	MRT 180	F180M (265)
23	60	2087	1.0	MRT 180	F180M (265)
20	70	2399	0.8	MRT 180	F180M (265)

P_1=7.5kW		n_1=900 [rpm]			160-6p
120	7.5	549	3.4	MRT 180	F180L (300)
90	10	716	2.9	MRT 180	F180L (300)
72	12.5	885	2.4	MRT 180	F180L (300)
60	15	1027	2.2	MRT 180	F180L (300)
45	20	1385	1.6	MRT 180	F180L (300)
36	25	1651	1.2	MRT 180	F180L (300)
30	30	1910	1.3	MRT 180	F180L (300)
23	40	2451	1.0	MRT 180	F180L (300)
18	50	2865	0.8	MRT 180	F180L (300)

P_1=11.0kW		n_1=2800 [rpm]			160-2p
187	15	495	3.4	MRT 180	F180L (300)
140	20	668	2.6	MRT 180	F180L (300)
112	25	797	1.9	MRT 180	F180L (300)
93	30	923	2.1	MRT 180	F180L (300)
70	40	1186	1.6	MRT 180	F180L (300)
56	50	1388	1.3	MRT 180	F180L (300)
47	60	1553	1.1	MRT 180	F180L (300)
40	70	1786	0.9	MRT 180	F180L (300)

n_2 [rpm]	i [–]	M_2 [Nm]	Sf [–]	Size [–]	Standard m. flange
P_1=11.0kW		n_1=1400 [rpm]			160-4p
187	7.5	523	3.2	MRT 180	F180L (300)
140	10	683	2.7	MRT 180	F180L (300)
112	12.5	844	2.2	MRT 180	F180L (300)
93	15	979	2.0	MRT 180	F180L (300)
70	20	1321	1.5	MRT 180	F180L (300)
56	25	1576	1.2	MRT 180	F180L (300)
47	30	1823	1.2	MRT 180	F180L (300)
35	40	2341	0.9	MRT 180	F180L (300)
28	50	2739	0.8	MRT 180	F180L (300)

P_1=11.0kW		n_1=900 [rpm]			160-6p
120	7.5	805	2.3	MRT 180	F180L (300)
90	10	1051	2.0	MRT 180	F180L (300)
72	12.5	1299	1.6	MRT 180	F180L (300)
60	15	1506	1.5	MRT 180	F180L (300)
45	20	2031	1.1	MRT 180	F180L (300)
36	25	2422	0.8	MRT 180	F180L (300)
30	30	2801	0.9	MRT 180	F180L (300)

P_1=15.0kW		n_1=2800 [rpm]			160-2p
280	10	471	3.3	MRT 180	F180L (300)
224	12.5	582	2.7	MRT 180	F180L (300)
187	15	675	2.5	MRT 180	F180L (300)
140	20	911	1.9	MRT 180	F180L (300)
112	25	1087	1.4	MRT 180	F180L (300)
93	30	1259	1.5	MRT 180	F180L (300)
70	40	1617	1.2	MRT 180	F180L (300)

P_1=15.0kW		n_1=1400 [rpm]			160-4p
187	7.5	714	2.4	MRT 180	F180L (300)
140	10	931	2.0	MRT 180	F180L (300)
112	12.5	1151	1.6	MRT 180	F180L (300)
93	15	1335	1.5	MRT 180	F180L (300)
70	20	1801	1.1	MRT 180	F180L (300)
56	25	2149	0.8	MRT 180	F180L (300)
47	30	2486	0.9	MRT 180	F180L (300)

Note: *Gearboxes marked in blue supplied without an electric motor – use of a reduction sleeve is necessary. Gearboxes marked in green supplied without an electric motor – it is necessary to modify the electric motor´s shaft according to the hollow input shaft prior to alterations*

8. COMBINATION OF GEAR UNITS WITH ELECTRIC MOTORS BASED ON OUTPUT POWER

The following table shows the largest possible sizes of standard electric motors for each individual gear ratio.

Table 8.1 **Combination of Gear Units with Electric Motors**

	i=5	i=7,5	i=10	i=12,5	i=15	i=20	i=25	i=30	i=40	i=50	i=60	i=70	i=80	i=100
MRT 30A	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	56-4p	56-4p	56-4p	56-4p	56-4p
MRT 40A	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p
MRT 50A	80-4p	80-4p	80-4p	80-4p	80-4p	80-4p	71-4p	71-4p	71-4p	71-4p	71-4p	63-4p	63-4p	63-4p
MRT 60A	90-4p	90-4p	90-4p	90-4p	90-4p	80-4p	80-4p	80-4p	80-4p	80-4p	71-4p	71-4p	71-4p	71-4p
MRT 70A	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	80-4p	80-4p	80-4p	80-4p	71-4p	71-4p
MRT 80A	112-4p	112-4p	112-4p	100-4p	100-4p	90-4p	90-4p	90-4p	90-4p	80-4p	80-4p	80-4p	80-4p	80-4p
MRT 100A		112-4p	112-4p	112-4p	112-4p	112-4p	112-4p	112-4p	100-4p	90-4p	90-4p	90-4p	90-4p	80-4p
MRT 120A		112-4p	112-4p	112-4p	112-4p	112-4p	112-4p	112-4p	112-4p	100-4p	100-4p	100-4p	90-4p	90-4p
MRT 150A		132-4p	132-4p	132-4p	132-4p	132-4p	132-4p	132-4p	132-4p	112-4p	112-4p	112-4p	112-4p	100-4p
MRT 180A		160-4p	160-4p	160-4p	160-4p	160-4p	160-4p	160-4p	132-4p	132-4p	132-4p	132-4p	112-4p	112-4p

	i=5	i=7,5	i=10	i=12,5	i=15	i=20	i=25	i=30	i=40	i=50	i=60	i=70	i=80	i=100
MRT 30A	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p
MRT 40A	71-6p	71-6p	71-6p	71-6p	71-6p	71-6p	71-6p	71-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p
MRT 50A	80-6p	80-6p	80-6p	80-6p	80-6p	80-6p	80-6p	80-6p	71-6p	71-6p	71-6p	63-6p	63-6p	63-6p
MRT 60A	90-6p	90-6p	90-6p	90-6p	90-6p	80-6p	80-6p	80-6p	80-6p	80-6p	71-6p	71-6p	71-6p	71-6p
MRT 70A	90-6p	90-6p	90-6p	90-6p	90-6p	90-6p	90-6p	90-6p	80-6p	80-6p	80-6p	80-6p	71-6p	71-6p
MRT 80A	112-6p	112-6p	112-6p	100-6p	100-6p	90-6p	90-6p	90-6p	90-6p	90-6p	80-6p	80-6p	80-6p	80-6p
MRT 100A		112-6p	112-6p	112-6p	112-6p	112-6p	112-6p	112-6p	100-6p	90-6p	90-6p	90-6p	90-6p	80-6p
MRT 120A		112-6p	112-6p	112-6p	112-6p	112-6p	112-6p	112-6p	112-6p	100-6p	100-6p	100-6p	90-6p	90-6p
MRT 150A		132-6p	132-6p	132-6p	132-6p	132-6p	132-6p	132-6p	132-6p	112-6p	112-6p	112-6p	112-6p	100-6p
MRT 180A		160-6p	160-6p	160-6p	160-6p	160-6p	160-6p	160-6p	160-6p	132-6p	132-6p	132-6p	112-6p	112-6p

	i=75	i=90	i=120	i=150	i=180	i=210	i=240	i=300
MRP 40A	63-4p	63-4p	63-4p	56-4p	56-4p	56-4p	56-4p	56-4p
MRP 50A	63-4p	63-4p	63-4p	63-4p	63-4p	56-4p	56-4p	56-4p
MRP 60A	71-4p	71-4p	71-4p	71-4p	63-4p	63-4p	63-4p	63-4p
MRP 70A	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	63-4p	63-4p
MRP 80A	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p
MRP 100A	90-4p	90-4p	90-4p	90-4p	80-4p		80-4p	71-4p
MRP 120A	90-4p	90-4p	90-4p	90-4p	90-4p		90-4p	80-4p
MRP 150A	112-4p	112-4p	112-4p	112-4p	100-4p		100-4p	90-4p
MRP 180A	112-4p	112-4p	112-4p	112-4p	112-4p		112-4p	100-4p

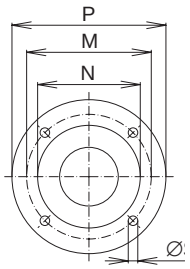
	i=75	i=90	i=120	i=150	i=180	i=210	i=240	i=300
MRP 40A	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p
MRP 50A	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p	63-6p
MRP 60A	71-6p	71-6p	71-6p	71-6p	63-6p	63-6p	63-6p	63-6p
MRP 70A	71-6p	71-6p	71-6p	71-6p	71-6p	71-6p	63-6p	63-6p
MRP 80A	71-6p	71-6p	71-6p	71-6p	71-6p	71-6p	71-6p	71-6p
MRP 100A	90-6p	90-6p	90-6p	90-6p	90-6p		80-6p	80-6p
MRP 120A	90-6p	90-6p	90-6p	90-6p	90-6p		90-6p	80-6p
MRP 150A	100-6p	100-6p	100-6p	100-6p	100-6p		100-6p	90-6p
MRP 180A	112-6p	112-6p	112-6p	112-6p	112-6p		100-6p	100-6p

Legend:

0,06kW	0,09kW	0,12kW	0,18kW	0,25kW	0,37kW	0,55kW	0,75kW	1,1kW	1,5kW	2,2kW	3kW	4kW	5,5kW	7,5kW	11kW	15kW
56-4p	56-4p	63-4p	63-4p	71-4p	71-4p	80-4p	80-4p	90-4p	90-4p	100-4p	112-4p	112-4p	132-4p	132-4p	160-4p	160-4p
63-6p	63-6p	63-6p	71-6p	71-6p	80-6p	80-6p	90-6p	90-6p	100-6p	112-6p	112-6p	132-6p	132-6p	160-6p	160-6p	

9. DIMENSIONS OF INPUT FLANGES

Table 9.1 **Dimensions**



Identification	M	N H7	P	S
F 65	65	50	80	5,5
F 75	75	60	90	5,5
F 85	85	70	105	6,6
F 100	100	80	120	6,6
F 115	115	95	140	10
F 130	130	110	160	10
F 165	165	130	200	12
F 215	215	180	250	15
F 265	265	230	300	15

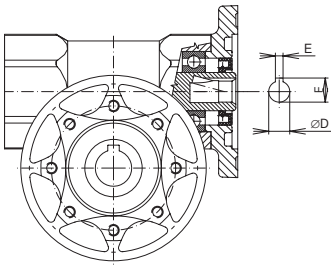
Table 9.2 **Compatible Motor – Gearbox Flanges**

	F 65	F 75	F 85	F 100	F 115	F 130	F 165	F 215	F 265	F 300
MRT 30A	●	●								
MRT 40A		●	●	●						
MRT 50A		●	●	●	○	○				
MRT 60A				●	●	●				
MRT 70A				●	●	●				
MRT 80A				○	●	●	●			
MRT 100A						●	●	●		
MRT 120A						●	●	●		
MRT 150A							●	●	●	
MRT 180A								●	●	●
MRP 40A				●						
MRP 50A				●						
MRP 60A					●					
MRP 70A					●	●				
MRP 80A						●				
MRP 100A							●			
MRP 120A							●			
MRP 150A								●		
MRP 180A								●		

Legend: ● *Standard flange* ○ *Non-standard flange*

10. DIMENSIONS OF INPUT HOLLOW SHAFT

Table 10.1 **Dimensions**



IEC motor size	∅D E7	E P9	F
56	9	3	10.4
63	11	4	12.8
71	14	5	16.3
80	19	6	21.8
90	24	8	27.3
100	28	8	31.3
112	28	8	31.3
132	38	10	41.3
160	42	12	45.3

Table 10.2 **Assignment of IEC Motors to Gear Units**

Size >>	56	63	71	80	90	100	112	132	160
∅ >>	9	11	14	19	24	28	28	38	42
MRT 30A	●	●							
MRT 40A		●	●						
MRT 50A		●	●	●					
MRT 60A			●	●	●				
MRT 70A			●	●	●				
MRT 80A				●	●	●			
MRT 100A				●	●	●	●		
MRT 120A					●	●	●		
MRT 150A						●	●	●	
MRT 180A						●	●	●	●
MRP 40A	●	●							
MRP 50A	●	●							
MRP 60A		●	●						
MRP 70A		●	●						
MRP 80A			●						
MRP 100A				●	●				
MRP 120A				●	●				
MRP 150A						●	●		
MRP 180A						●	●		

Table 11.1

Motor	56			63			71			80			90			100			112		132
Shaft dia	9			11			14			19			24			28			28		38
IEC	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A		B14B
Flange	M=65	M=85	M=100	M=75	M=100	M=115	M=85	M=115	M=130	M=100	M=130	M=165	M=115	M=130	M=165	M=130	M=165	M=215	M=130		M=165
MRT 30A	F30S			F30M																	
MRT 40A		F40M		F40S	F40L		F40M			F40L											
MRT 50A				F50S	F50L	(115*)	F50M	(115*)	(130*)	F50L	(130*)		(115*)	(130*)							
MRT 60A					F60S			F60M	F60L	F60S	F60L		F60M	F60L		F60L			F60L		
MRT 70A					F70S			F70M	F70L	F70S	F70L		F70M	F70L		F70L			F70L		
MRT 80A					(100*)	F80S		F80S		(100*)	F80M	F80L	F80S	F80M	F80L	F80M	F80L		F80M		F80L

Motor	71			80			90			100			112			132			160		
Shaft dia	14			19			24			28			28			38			42		
IEC	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5
Flange	M=85	M=115	M=130	M=100	M=130	M=165	M=115	M=130	M=165	M=130	M=165	M=215	M=130	M=165	M=215	M=165	-	M=265	-	-	M=300
MRT 100A			F100S			F100M		F100S	F100M	F100S	F100M	F100L	F100S	F100M	F100L	F100M					
MRT 120A			F120S		F120S			F120S	F120M	F120S	F120M	F120L	F120S	F120M	F120L	F120M					
MRT 150A						F150S			F150S		F150S	F150M		F150S	F150M	F150S		F150L			
MRT 180A												F180S			F180S			F180M			F180L

Motor	56			63			71			80			90			100			112		
Shaft dia	9			11			14			19			24			28			28		
IEC	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5	B14A	B14B	B5
Flange	M=65	M=85	M=100	M=75	M=100	M=115	M=85	M=115	M=130	M=100	M=130	M=165	M=115	M=130	M=165	M=130	M=165	M=215	M=130	M=165	M=215
MRP 40A			F40L		F40L																
MRP 50A			F50L		F50L																
MRP 60A						F60M			F60L												
MRP 70A						F70M			F70L												
MRP 80A									F80M												
MRP 100A												F100M			F100M						
MRP 120A												F120M			F120M						
MRP 150A																		F150M			F150M
MRP 180A																		F180S			F180S

Motor modification necessary (reduced shaft diameter)

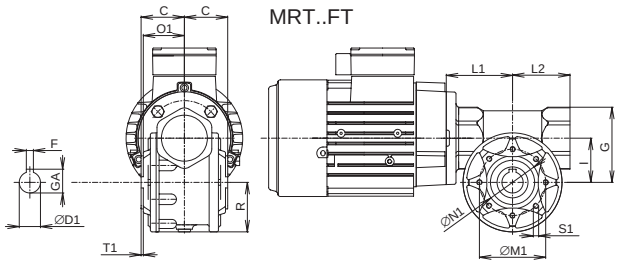
Reduction shaft sleeve shall be used

(*) Non-standard flange (special requirement)

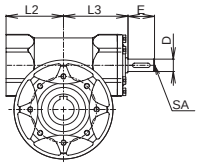
12. DIMENSIONS

Table 12.1 **Outline Drawings**

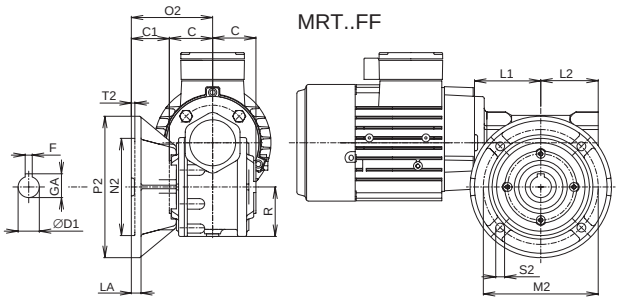
MRT..FT



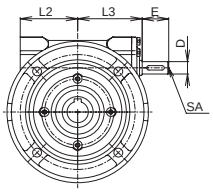
RT..FT



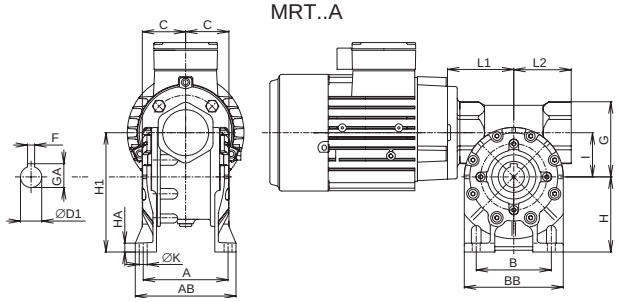
MRT..FF



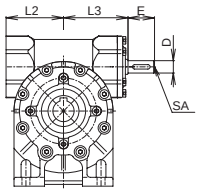
RT..FF



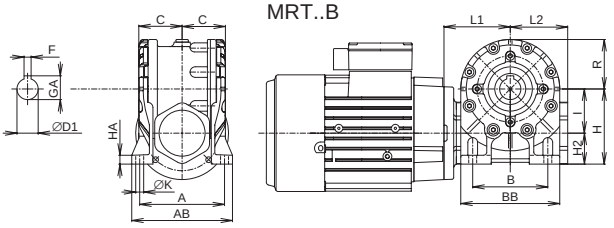
MRT..A



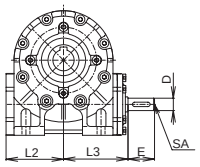
RT..A



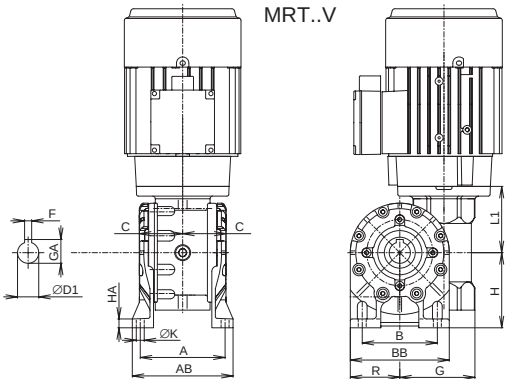
MRT..B



RT..B



MRT..V



RT..V

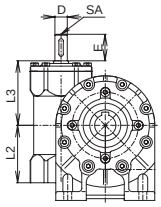
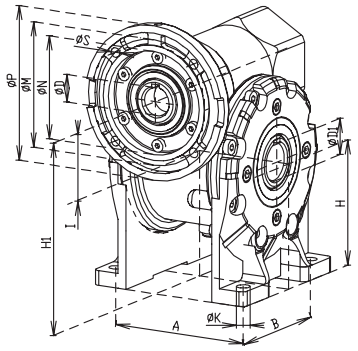
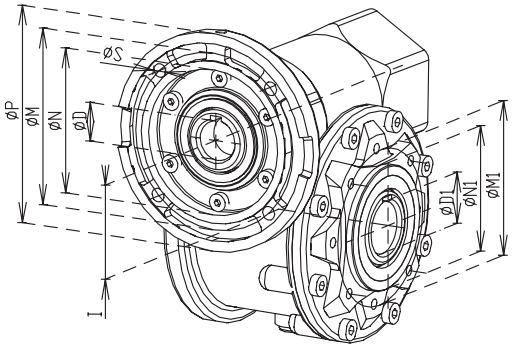


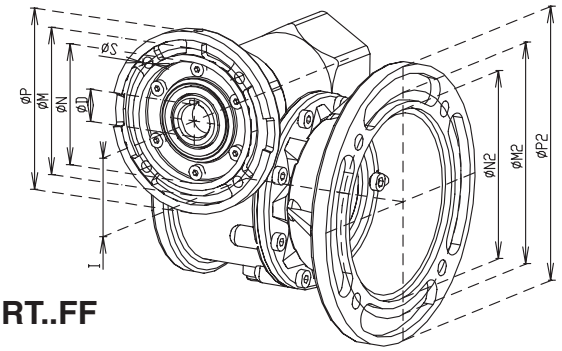
Table 12.1 **Outline Drawings**

MRT..A



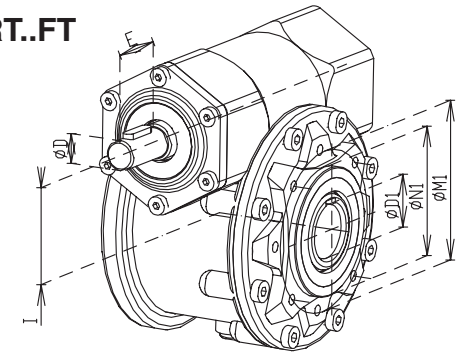
MRT..FT





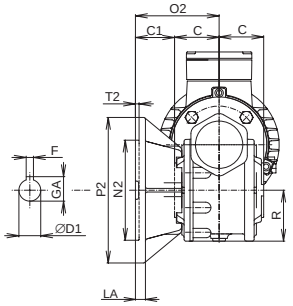
MRT..FF

RT..FT

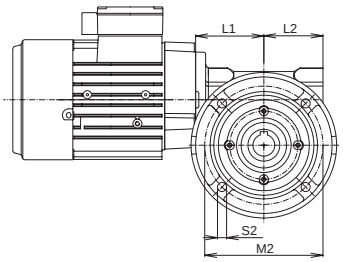


Size	A	AB	B	BB	C	D1H7	Dk6	E	F	GA	G	H	H1	H2	HA	I	K	R
(M)RT 30A	66	80	50÷55	82	31.5	14	9	20	5	16.3	51	52	82	22	6	30	7	42
(M)RT 40A	84	100	70	96	41.0	19	11	23	6	21.8	70	71	111	31	8	40	7	48
(M)RT 50A	96	114	85	112	49.0	24	14	30	8	27.3	84	85	135	35	10	50	9	56
(M)RT 60A	111	137	95	140	60.0	25	19	40	8	28.3	99	100	160	40	12	60	11	70
(M)RT 70A	115	141	120	156	60.5	28	19	40	8	31.3	109	115	185	45	12	70	11	76
(M)RT 80A	147	180	140	180	70.0	35	24	50	10	38.3	128	142	222	62	13	80	11	90

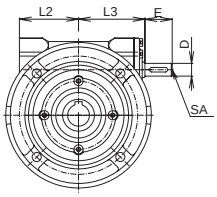
Size	C1	L1	L2	L3	LA	SA	M1	N1	O1	S1	T1	M2	N2	P2	O2	S2	T2
(M)RT 30A	18.5	55	46	48	6	M3×9	65	55	29.0	M6×7	2.5	65	50	80	50.0	6.5	4
(M)RT 40A	41.0	65	57	63	11	M4×10	65	50	38.5	M6×12	2.5	115	95	140	82.0	9.0	4
(M)RT 50A	43.0	75	65	73	11	M5×12	75	60	46.5	M6×12	2.5	130	110	160	92.0	10.0	4
(M)RT 60A	42.0	93	75	91	12	M6x×16	85	70	57.5	M6×12	2.5	165	130	200	102.0	11.0	4
(M)RT 70A	51.0	101	81	99	12	M6×16	100	80	57.0	M8×16	3.5	165	130	200	111.5	11.0	5
(M)RT 80A	50.0	110	95	108	12	M8×19	130	110	66.5	M10×16	3.5	165	130	200	120.0	11.0	5



MRT..FB



RT..FB

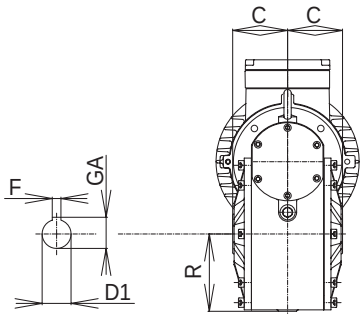


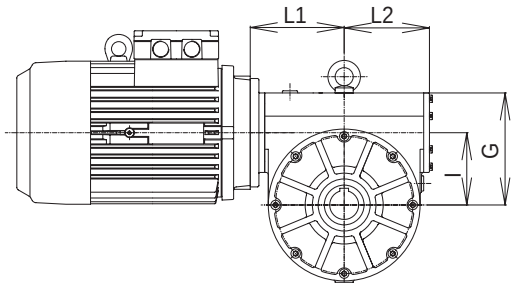
Size	A	AB	B	BB	C	D1H7	Dk6	E	F	GA	G	H	H1	H2	HA	I	K	R
(M)RT 30A	66	80	50÷55	82	31.5	14	9	20	5	16.3	51	52	82	22	6	30	7	42
(M)RT 40A	84	100	70	96	41.0	19	11	23	6	21.8	70	71	111	31	8	40	7	48

Size	C1	L1	L2	L3	LA	M2	N2	P2	O2	S2	T2							
(M)RT 30A	33.5	55	46	48	7	75	60	90	65.0	6.5	4							
(M)RT 40A	56.5	65	57	63	7	75	60	95	97.5	6.5	4							

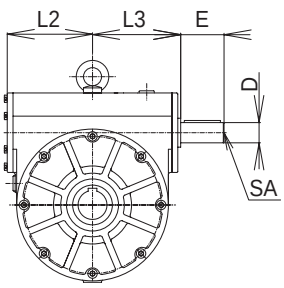
Table 12.2 **Outline Drawings**

MRT..FO

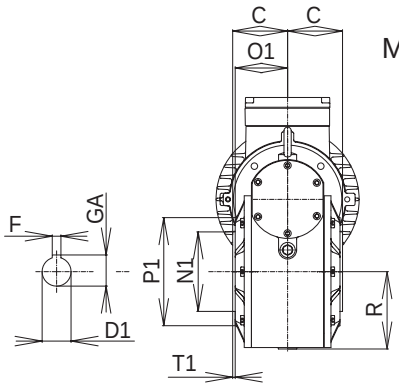


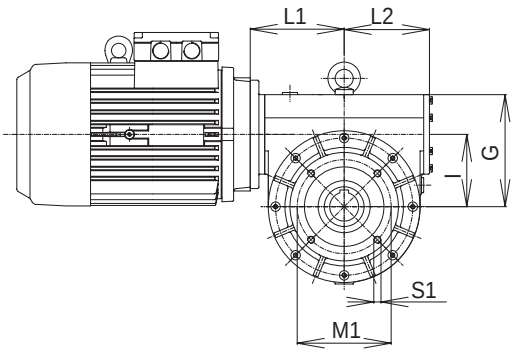


RT..FO

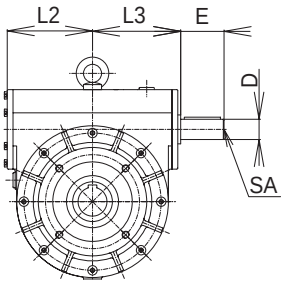


MRT..FT

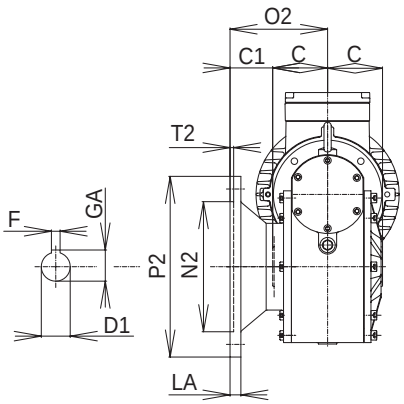


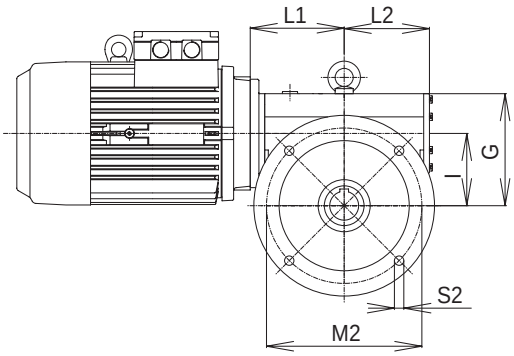


RT..FT

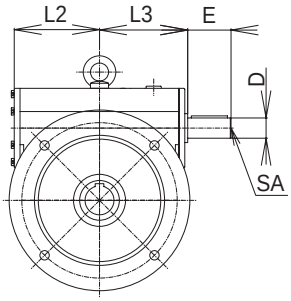


MRT..FF





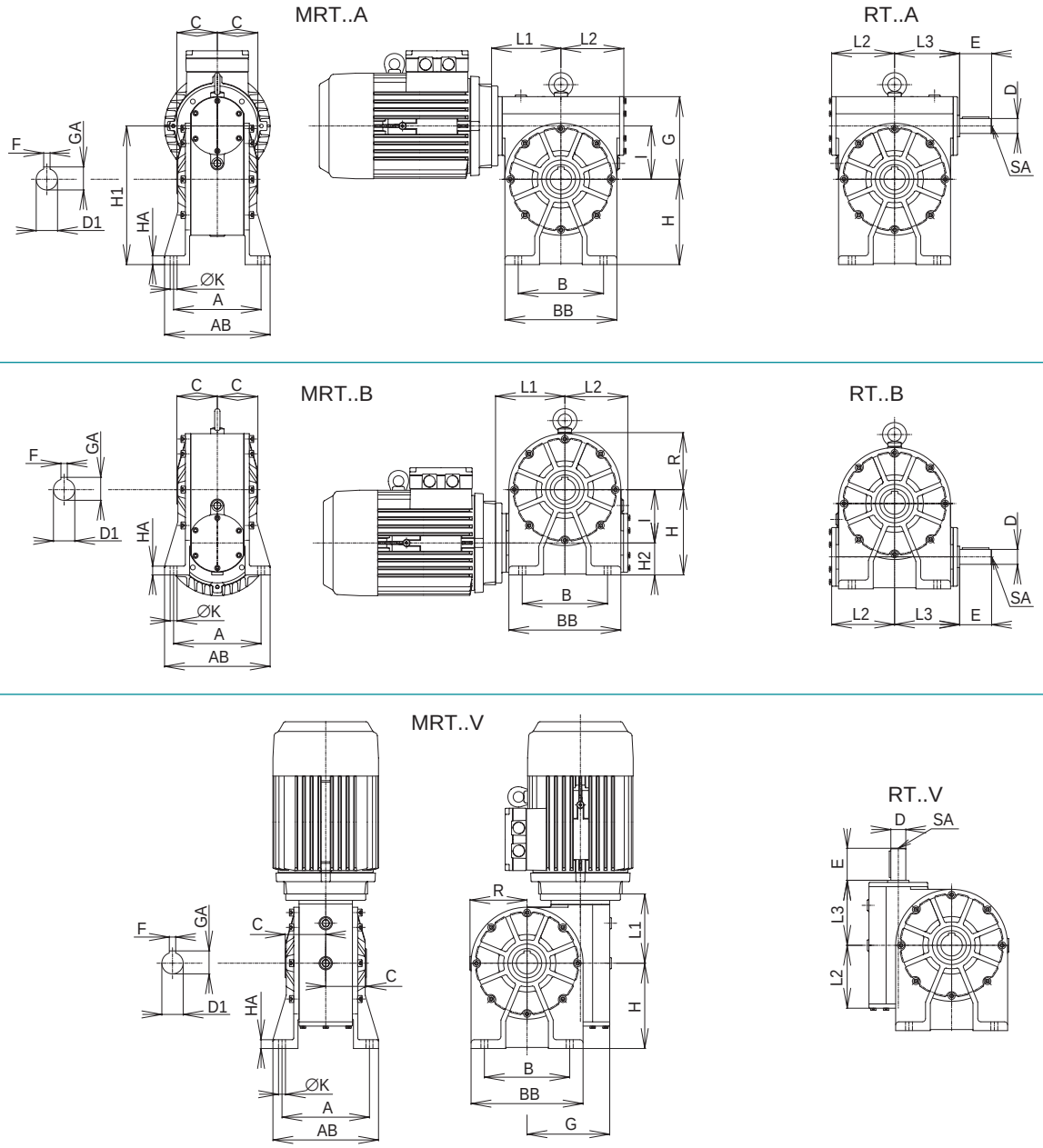
RT..FF



Size	A	AB	B	BB	C	D1H7	Dk6	E	F	GA	G	H	H1	H2	HA	I	K	R
(M)RT 100A	164	198	160	210	76	40	28	60	12	43.3	147	160	260	60	16.5	100	13	107
(M)RT 120A	180	216	200	250	86	45	38	80	14	48.8	175	185	305	65	18.0	120	15	128
(M)RT 150A	220	260	270	340	110	55	42	110	16	59.0	219	230	380	80	20.0	150	19	160
(M)RT 180A	264	318	300	370	132	60	48	110	18	65.2	264	280	460	100	22.0	180	22	189

Size	C1	L1	L2	L3	LA	SA	M1	N1	O1	S1	T1	M2	N2	P2	O2	S2	T2
(M)RT 100A	59	130	117	122	15	M8×19	130	110	72.5	M10×20	5	215	180	250	135	13	3.5
(M)RT 120A	59	152	138	144	15	M10×22	165	130	80.5	M12×25	5	215	180	250	145	13	3.5
(M)RT 150A	98	188	171	179	20	M12×25	215	180	106.0	M14×25	6	300	250	350	208	17	4.0
(M)RT 180A	88	223	202	218	20	M16×25	265	230	129.0	M16×25	5	300	300	400	220	18	4.0

Table 12.3 **Outline Drawings**

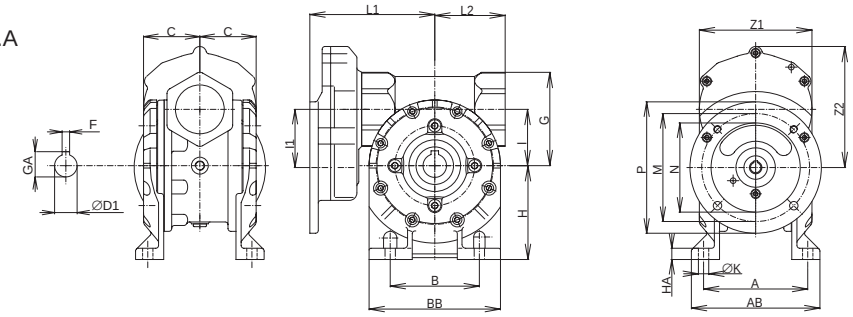


Size	A	AB	B	BB	C	D1H7	Dk6	E	F	GA	G	H	H1	H2	HA	I	K	R
(M)RT 100A	164	198	160	210	76	40	28	60	12	43.3	147	160	260	60	16.5	100	13	107
(M)RT 120A	180	216	200	250	86	45	38	80	14	48.8	175	185	305	65	18.0	120	15	128
(M)RT 150A	220	260	270	340	110	55	42	110	16	59.0	219	230	380	80	20.0	150	19	160
(M)RT 180A	264	318	300	370	132	60	48	110	18	65.2	264	280	460	100	22.0	180	22	189

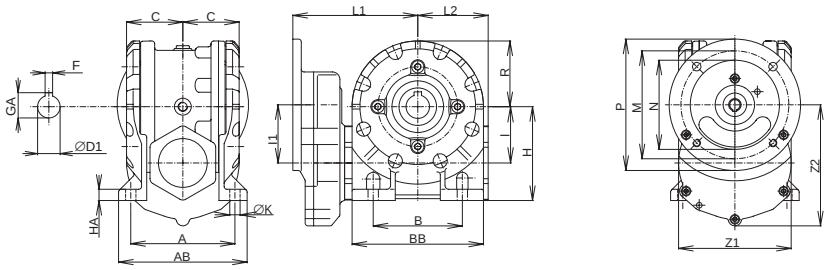
Size	C1	L1	L2	L3	LA	SA	M1	N1	O1	S1	T1	M2	N2	P2	O2	S2	T2
(M)RT 100A	59	130	117	122	15	M8×19	130	110	72.5	M10×20	5	215	180	250	135	13	3.5
(M)RT 120A	59	152	138	144	15	M10×22	165	130	80.5	M12×25	5	215	180	250	145	13	3.5
(M)RT 150A	98	188	171	179	20	M12×25	215	180	106.0	M14×25	6	300	250	350	208	17	4.0
(M)RT 180A	88	223	202	218	20	M16×25	265	230	129.0	M16×25	5	300	300	400	220	18	4.0

Table 12.4 **Outline Drawings**

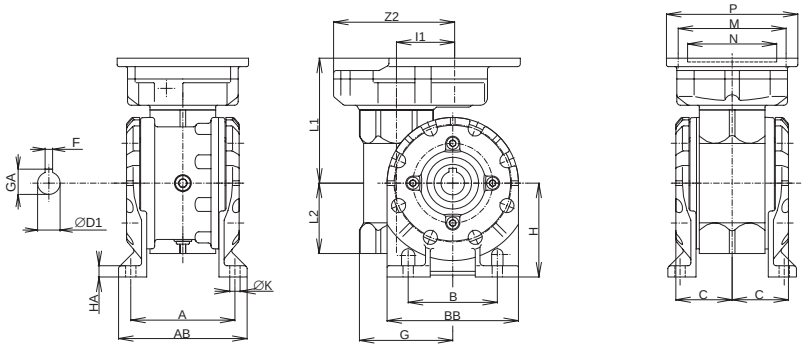
MRP..A



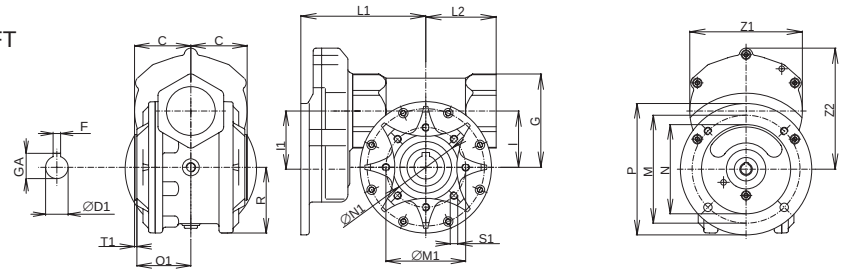
MRP..B



MRP..V



MRP..FT



MRP..FF

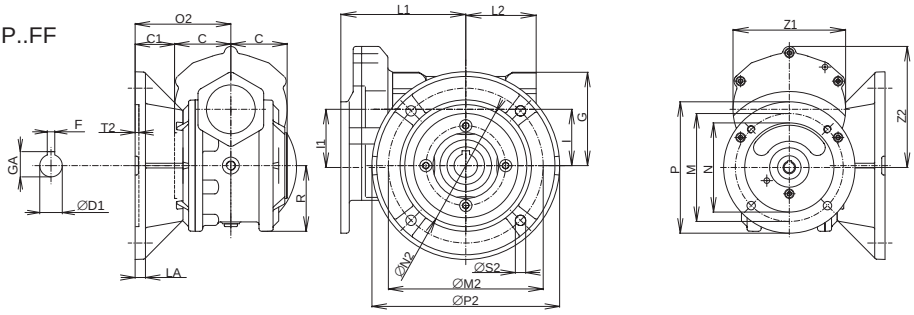


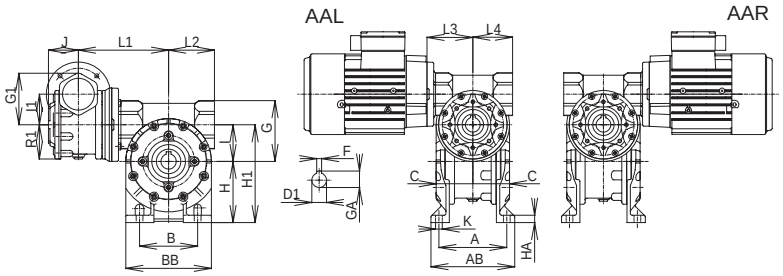
Table 12.4 **Outline Drawings**

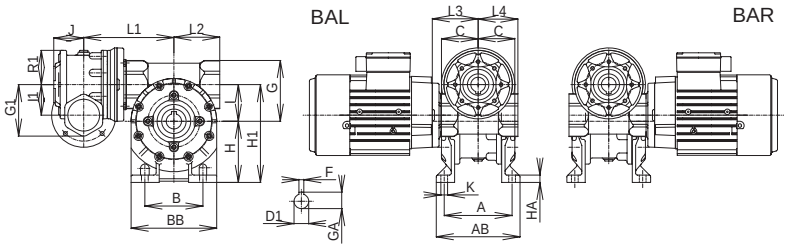
Size	A	AB	B	BB	C	D1H7	F	GA	G	H	HA	I	I1	K	R	Z1	Z2
MRP 40A	84	100	70	96	41.0	19	6	21.8	70	71	8.0	40	36	7	48	73	75.5
MRP 50A	96	114	85	112	49.0	24	8	27.3	84	85	10.0	50	32	9	56	73	75.5
MRP 60A	111	137	95	140	60.0	25	8	28.3	99	100	12.0	60	62	11	70	120	129.0
MRP 70A (P60)	115	141	120	156	60.5	28	8	31.3	109	115	12.0	70	62	11	76	128	137.0
MRP 70A (P80)	115	141	120	156	60.5	28	8	31.3	109	115	12.0	70	66	11	76	128	137.0
MRP 80A	147	180	140	180	70.0	35	10	38.3	128	142	13.0	80	66	11	90	128	137.0
MRP 100A	164	198	160	210	76.0	40	12	43.3	147	160	16.5	100	80	13	107	154	165.0
MRP 120A	180	216	200	250	86.0	45	14	48.8	175	185	18.0	120	80	15	128	154	165.0
MRP 150A	220	260	270	340	110.0	55	16	59.0	219	230	20.0	150	100	19	160	210	217.0
MRP 180A	264	318	300	370	132.0	60	18	65.2	264	280	22.0	180	100	22	189	210	217.0

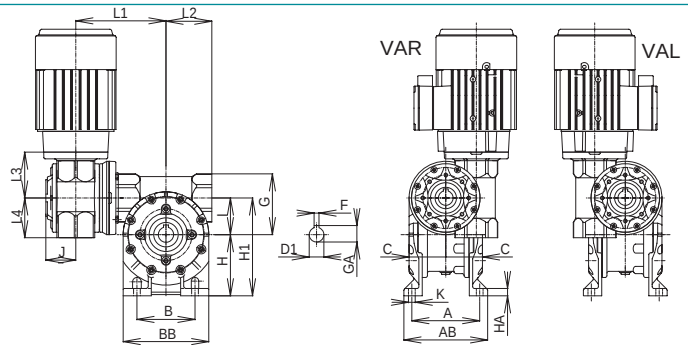
Size	C1	L1	L2	LA	M	N	P	M1	N1	O1	S1	T1	M2	N2	P2	O2	S2	T2
MRP 40A	41	103	57	11	100	80	120	65	50	38.5	M6×12	2.5	115	95	140	82.0	9	4
MRP 50A	43	113	65	11	100	80	120	75	60	46.5	M6×12	2.5	130	110	160	92.0	10	4
MRP 60A	42	130	75	12	115	95	140	85	70	57.5	M6×12	2.5	165	130	200	102.0	11	4
MRP 70A (P60)	51	143	81	12	115	95	140	100	80	57.0	M8×16	3.5	165	130	200	111.5	11	5
MRP 70A (P80)	51	156	81	12	130	110	160	100	80	57.0	M8×16	3.5	165	130	200	111.5	11	5
MRP 80A	50	165	95	12	130	110	160	130	110	66.5	M10×16	3.5	165	130	200	120.0	11	5
MRP 100A	76	190	117	15	165	130	200	130	110	72.5	M10×20	3.5	215	180	250	135.0	13	5
MRP 120A	86	220	138	15	165	130	200	165	130	80.5	M12×25	3.5	215	180	250	145.0	13	5
MRP 150A	110	275	171	20	215	180	250	215	180	106.0	M14×25	4.0	300	250	350	208.0	17	6
MRP 180A	132	305	202	20	215	180	250	265	230	129.0	M16×25	4.0	350	300	400	220.0	18	5

Note: *Countershaft of MRP 70A (P60) is identical as countershaft of MRP 60A*
Countershaft of MRP 70A (P80) is identical as countershaft of MRP 80A

Table 12.5 **Outline Drawings**



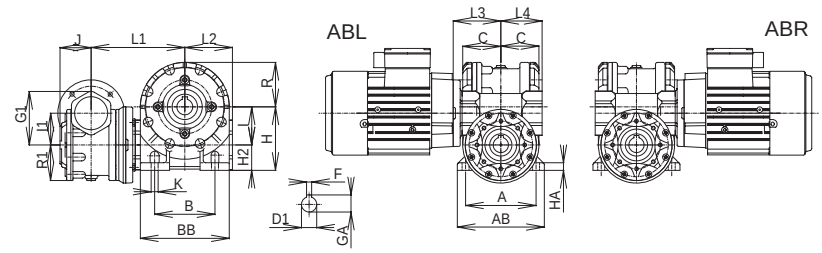


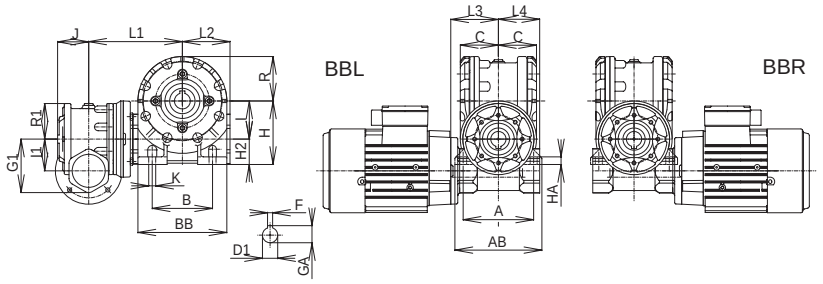


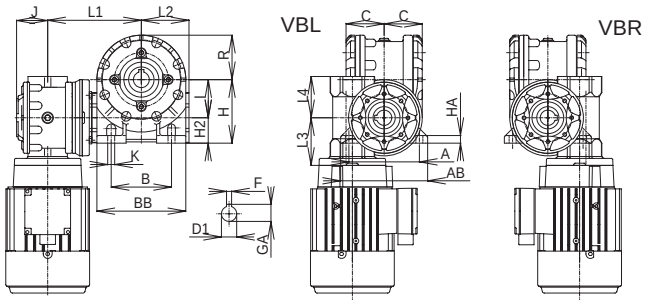
Size	A	AB	B	BB	C	D1H7	F	GA	G	G1	H	H1	H2	HA	I	I1	J	K
(M)RT 30×30	66	80	50÷55	82	31.5	14	5	16.3	51	51	51	82	22	6.0	30	30	31.5	7
(M)RT 30×40	84	100	70	96	41.0	19	6	21.8	70	70	51	111	31	8.0	40	30	31.5	7
(M)RT 30×50	96	114	85	112	49.0	24	8	27.3	84	84	51	135	35	10.0	50	30	31.5	9
(M)RT 40×50	96	114	85	112	49.0	24	8	27.3	84	84	70	135	35	10.0	50	40	41.0	9
(M)RT 40×60	111	137	95	140	60.0	25	8	28.3	99	99	70	160	40	12.0	60	40	41.0	11
(M)RT 40×70	115	141	120	156	60.5	28	8	31.3	109	109	70	185	45	12.0	70	40	41.0	11
(M)RT 50×60	111	137	95	140	60.0	25	8	28.3	99	99	84	160	40	12.0	60	50	49.0	11
(M)RT 50×70	115	141	120	156	60.5	28	8	31.3	109	109	84	185	45	12.0	70	50	49.0	11
(M)RT 50×80	147	180	140	180	70.0	35	10	38.3	128	128	84	222	62	13.0	80	50	49.0	11
(M)RT 70×100	164	198	160	210	76.0	40	12	43.3	147	147	109	260	60	16.5	100	70	60.5	13
(M)RT 80×100	164	198	160	210	76.0	40	12	43.3	147	147	128	260	60	16.5	100	80	70.0	13
(M)RT 80×120	180	216	200	250	86.0	45	14	48.8	175	175	128	305	65	18.0	120	80	70.0	15
(M)RT 100×150	220	260	270	340	110.0	55	16	59.0	219	219	147	380	80	20.0	150	100	76.0	19
(M)RT 100×180	264	318	300	370	132.0	60	18	65.2	264	264	147	460	100	22.0	180	100	76.0	22

Size	L1	L2	L3	L4	R	R1	M1	N1	O1	S1	T1	C1	LA	M2	N2	O2	S2	T2
(M)RT 30×30	90.0	46	55	46	42	42	65	55	29.0	M6×7	2.5	18.5	6	65	50	50.0	6.5	4
(M)RT 30×40	103.0	57	55	46	48	42	65	50	38.5	M6×12	2.5	41.0	11	115	95	82.0	9.0	4
(M)RT 30×50	113.0	65	55	46	56	42	75	60	46.5	M6×12	2.5	43.0	11	130	110	92.0	10.0	4
(M)RT 40×50	124.0	65	65	57	56	48	75	60	46.5	M6×12	2.5	43.0	11	130	110	92.0	10.0	4
(M)RT 40×60	135.0	75	65	57	70	48	85	70	57.5	M6×12	2.5	42.0	12	165	130	102.0	11.0	4
(M)RT 40×70	143.0	81	65	57	76	48	100	80	57.0	M6×16	3.5	51.0	12	165	130	111.5	11.0	5
(M)RT 50×60	147.5	75	75	65	70	56	85	70	57.5	M6×12	2.5	42.0	12	165	130	102.0	11.0	4
(M)RT 50×70	155.5	81	75	65	76	56	100	80	57.0	M8×16	3.5	51.0	12	165	130	111.5	11.0	5
(M)RT 50×80	164.5	95	75	65	90	56	130	110	66.5	M10×16	3.5	50.0	12	165	130	120.0	11.0	5
(M)RT 70×100	208.5	117	101	81	107	76	130	110	72.5	M10×20	3.5	76.0	15	215	180	135.0	13.0	5
(M)RT 80×100	213.0	117	110	95	107	90	130	110	72.5	M10×20	3.5	76.0	15	215	180	135.0	13.0	5
(M)RT 80×120	235.0	138	110	95	128	90	165	130	80.5	M12×25	3.5	86.0	15	215	180	145.0	13.0	5
(M)RT 100×150	238.0	171	130	117	160	107	215	180	106.0	M14×25	4.0	110.0	20	300	250	208.0	17.0	6
(M)RT 100×180	304.0	202	130	117	189	107	265	230	129.0	M16×25	4.0	132.0	20	350	300	220.0	18.0	5

Table 12.6 **Outline Drawings**



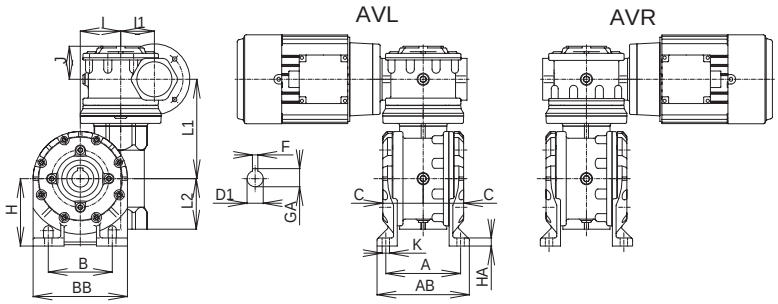


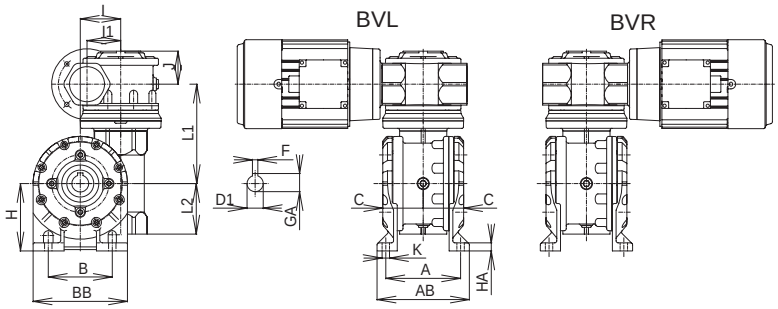


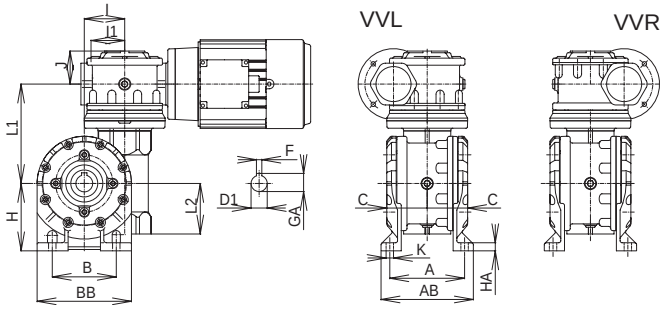
Size	A	AB	B	BB	C	D1H7	F	GA	G	G1	H	H1	H2	HA	I	I1	J	K
(M)RT 30×30	66	80	50÷55	82	31.5	14	5	16.3	51	51	51	82	22	6.0	30	30	31.5	7
(M)RT 30×40	84	100	70	96	41.0	19	6	21.8	70	70	51	111	31	8.0	40	30	31.5	7
(M)RT 30×50	96	114	85	112	49.0	24	8	27.3	84	84	51	135	35	10.0	50	30	31.5	9
(M)RT 40×50	96	114	85	112	49.0	24	8	27.3	84	84	70	135	35	10.0	50	40	41.0	9
(M)RT 40×60	111	137	95	140	60.0	25	8	28.3	99	99	70	160	40	12.0	60	40	41.0	11
(M)RT 40×70	115	141	120	156	60.5	28	8	31.3	109	109	70	185	45	12.0	70	40	41.0	11
(M)RT 50×60	111	137	95	140	60.0	25	8	28.3	99	99	84	160	40	12.0	60	50	49.0	11
(M)RT 50×70	115	141	120	156	60.5	28	8	31.3	109	109	84	185	45	12.0	70	50	49.0	11
(M)RT 50×80	147	180	140	180	70.0	35	10	38.3	128	128	84	222	62	13.0	80	50	49.0	11
(M)RT 70×100	164	198	160	210	76.0	40	12	43.3	147	147	109	260	60	16.5	100	70	60.5	13
(M)RT 80×100	164	198	160	210	76.0	40	12	43.3	147	147	128	260	60	16.5	100	80	70.0	13
(M)RT 80×120	180	216	200	250	86.0	45	14	48.8	175	175	128	305	65	18.0	120	80	70.0	15
(M)RT 100×150	220	260	270	340	110.0	55	16	59.0	219	219	147	380	80	20.0	150	100	76.0	19
(M)RT 100×180	264	318	300	370	132.0	60	18	65.2	264	264	147	460	100	22.0	180	100	76.0	22

Size	L1	L2	L3	L4	R	R1	M1	N1	O1	S1	T1	C1	LA	M2	N2	O2	S2	T2
(M)RT 30×30	90.0	46	55	46	42	42	65	55	29.0	M6×7	2.5	18.5	6	65	50	50.0	6.5	4
(M)RT 30×40	103.0	57	55	46	48	42	65	50	38.5	M6×12	2.5	41.0	11	115	95	82.0	9.0	4
(M)RT 30×50	113.0	65	55	46	56	42	75	60	46.5	M6×12	2.5	43.0	11	130	110	92.0	10.0	4
(M)RT 40×50	124.0	65	65	57	56	48	75	60	46.5	M6×12	2.5	43.0	11	130	110	92.0	10.0	4
(M)RT 40×60	135.0	75	65	57	70	48	85	70	57.5	M6×12	2.5	42.0	12	165	130	102.0	11.0	4
(M)RT 40×70	143.0	81	65	57	76	48	100	80	57.0	M6×16	3.5	51.0	12	165	130	111.5	11.0	5
(M)RT 50×60	147.5	75	75	65	70	56	85	70	57.5	M6×12	2.5	42.0	12	165	130	102.0	11.0	4
(M)RT 50×70	155.5	81	75	65	76	56	100	80	57.0	M8×16	3.5	51.0	12	165	130	111.5	11.0	5
(M)RT 50×80	164.5	95	75	65	90	56	130	110	66.5	M10×16	3.5	50.0	12	165	130	120.0	11.0	5
(M)RT 70×100	208.5	117	101	81	107	76	130	110	72.5	M10×20	3.5	76.0	15	215	180	135.0	13.0	5
(M)RT 80×100	213.0	117	110	95	107	90	130	110	72.5	M10×20	3.5	76.0	15	215	180	135.0	13.0	5
(M)RT 80×120	235.0	138	110	95	128	90	165	130	80.5	M12×25	3.5	86.0	15	215	180	145.0	13.0	5
(M)RT 100×150	238.0	171	130	117	160	107	215	180	106.0	M14×25	4.0	110.0	20	300	250	208.0	17.0	6
(M)RT 100×180	304.0	202	130	117	189	107	265	230	129.0	M16×25	4.0	132.0	20	350	300	220.0	18.0	5

Table 12.7 **Outline Drawings**



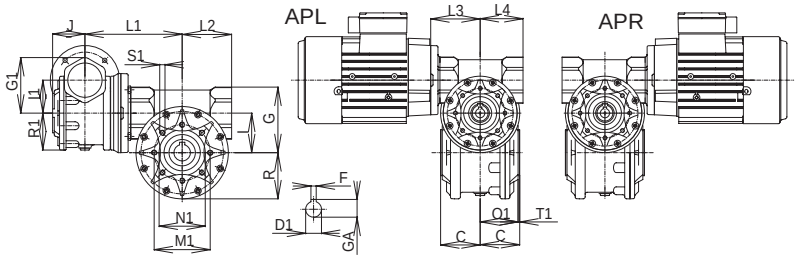


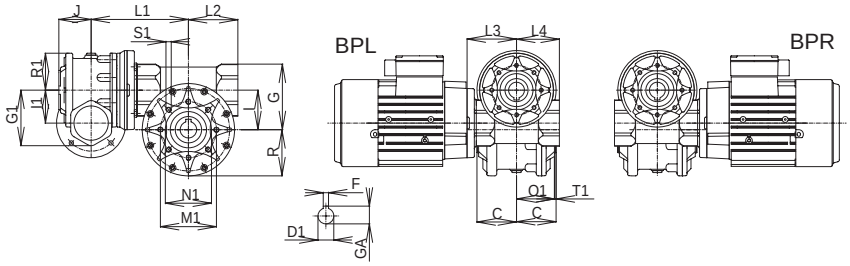


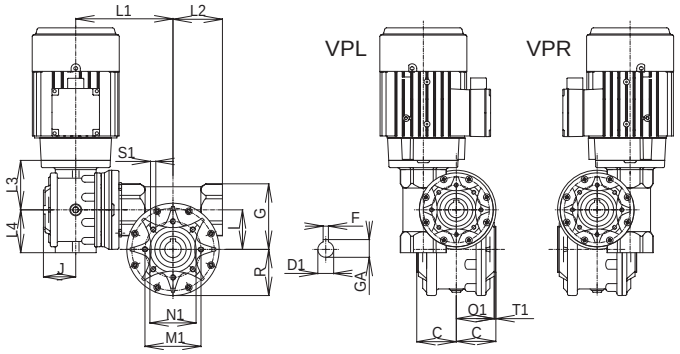
Size	A	AB	B	BB	C	D1H7	F	GA	G	G1	H	H1	H2	HA	I	I1	J	K
(M)RT 30×30	66	80	50÷55	82	31.5	14	5	16.3	51	51	51	82	22	6.0	30	30	31.5	7
(M)RT 30×40	84	100	70	96	41.0	19	6	21.8	70	70	51	111	31	8.0	40	30	31.5	7
(M)RT 30×50	96	114	85	112	49.0	24	8	27.3	84	84	51	135	35	10.0	50	30	31.5	9
(M)RT 40×50	96	114	85	112	49.0	24	8	27.3	84	84	70	135	35	10.0	50	40	41.0	9
(M)RT 40×60	111	137	95	140	60.0	25	8	28.3	99	99	70	160	40	12.0	60	40	41.0	11
(M)RT 40×70	115	141	120	156	60.5	28	8	31.3	109	109	70	185	45	12.0	70	40	41.0	11
(M)RT 50×60	111	137	95	140	60.0	25	8	28.3	99	99	84	160	40	12.0	60	50	49.0	11
(M)RT 50×70	115	141	120	156	60.5	28	8	31.3	109	109	84	185	45	12.0	70	50	49.0	11
(M)RT 50×80	147	180	140	180	70.0	35	10	38.3	128	128	84	222	62	13.0	80	50	49.0	11
(M)RT 70×100	164	198	160	210	76.0	40	12	43.3	147	147	109	260	60	16.5	100	70	60.5	13
(M)RT 80×100	164	198	160	210	76.0	40	12	43.3	147	147	128	260	60	16.5	100	80	70.0	13
(M)RT 80×120	180	216	200	250	86.0	45	14	48.8	175	175	128	305	65	18.0	120	80	70.0	15
(M)RT 100×150	220	260	270	340	110.0	55	16	59.0	219	219	147	380	80	20.0	150	100	76.0	19
(M)RT 100×180	264	318	300	370	132.0	60	18	65.2	264	264	147	460	100	22.0	180	100	76.0	22

Size	L1	L2	L3	L4	R	R1	M1	N1	O1	S1	T1	C1	LA	M2	N2	O2	S2	T2
(M)RT 30×30	90.0	46	55	46	42	42	65	55	29.0	M6×7	2.5	18.5	6	65	50	50.0	6.5	4
(M)RT 30×40	103.0	57	55	46	48	42	65	50	38.5	M6×12	2.5	41.0	11	115	95	82.0	9.0	4
(M)RT 30×50	113.0	65	55	46	56	42	75	60	46.5	M6×12	2.5	43.0	11	130	110	92.0	10.0	4
(M)RT 40×50	124.0	65	65	57	56	48	75	60	46.5	M6×12	2.5	43.0	11	130	110	92.0	10.0	4
(M)RT 40×60	135.0	75	65	57	70	48	85	70	57.5	M6×12	2.5	42.0	12	165	130	102.0	11.0	4
(M)RT 40×70	143.0	81	65	57	76	48	100	80	57.0	M6×16	3.5	51.0	12	165	130	111.5	11.0	5
(M)RT 50×60	147.5	75	75	65	70	56	85	70	57.5	M6×12	2.5	42.0	12	165	130	102.0	11.0	4
(M)RT 50×70	155.5	81	75	65	76	56	100	80	57.0	M8×16	3.5	51.0	12	165	130	111.5	11.0	5
(M)RT 50×80	164.5	95	75	65	90	56	130	110	66.5	M10×16	3.5	50.0	12	165	130	120.0	11.0	5
(M)RT 70×100	208.5	117	101	81	107	76	130	110	72.5	M10×20	3.5	76.0	15	215	180	135.0	13.0	5
(M)RT 80×100	213.0	117	110	95	107	90	130	110	72.5	M10×20	3.5	76.0	15	215	180	135.0	13.0	5
(M)RT 80×120	235.0	138	110	95	128	90	165	130	80.5	M12×25	3.5	86.0	15	215	180	145.0	13.0	5
(M)RT 100×150	238.0	171	130	117	160	107	215	180	106.0	M14×25	4.0	110.0	20	300	250	208.0	17.0	6
(M)RT 100×180	304.0	202	130	117	189	107	265	230	129.0	M16×25	4.0	132.0	20	350	300	220.0	18.0	5

Table 12.8 **Outline Drawings**



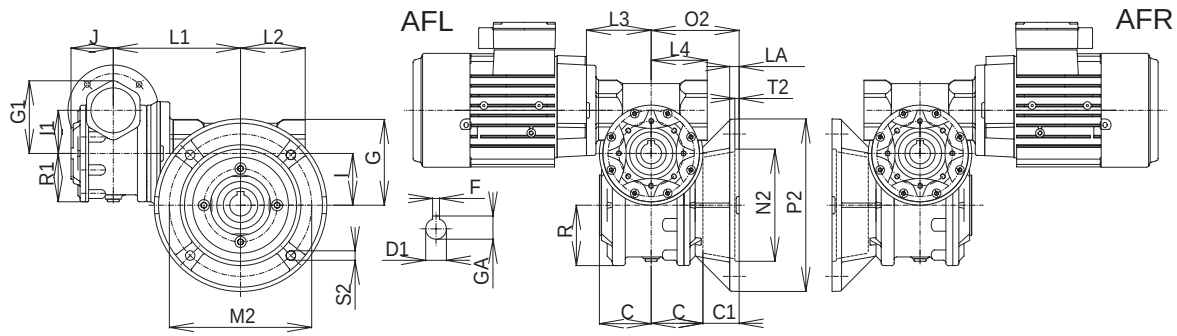


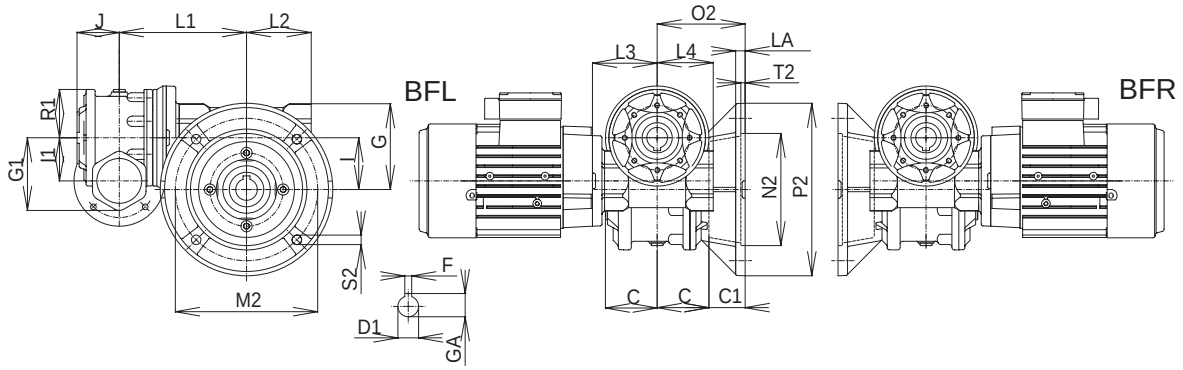


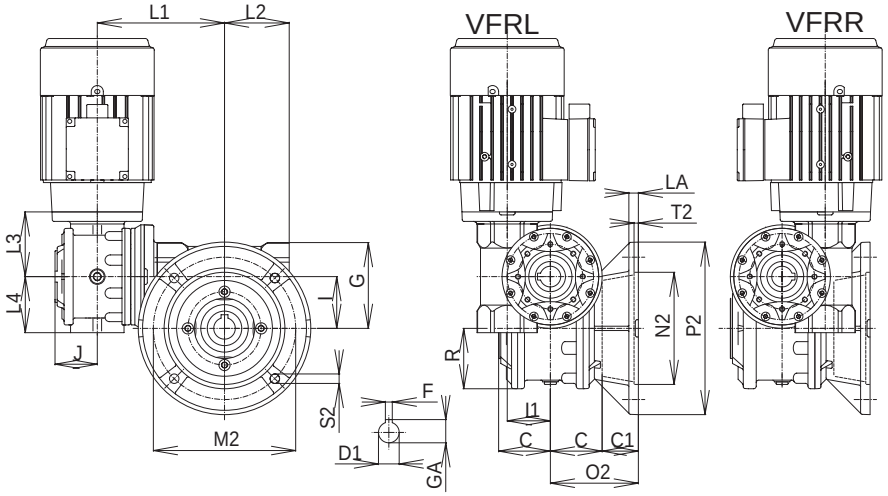
Size	A	AB	B	BB	C	D1H7	F	GA	G	G1	H	H1	H2	HA	I	I1	J	K
(M)RT 30×30	66	80	50÷55	82	31.5	14	5	16.3	51	51	51	82	22	6.0	30	30	31.5	7
(M)RT 30×40	84	100	70	96	41.0	19	6	21.8	70	70	51	111	31	8.0	40	30	31.5	7
(M)RT 30×50	96	114	85	112	49.0	24	8	27.3	84	84	51	135	35	10.0	50	30	31.5	9
(M)RT 40×50	96	114	85	112	49.0	24	8	27.3	84	84	70	135	35	10.0	50	40	41.0	9
(M)RT 40×60	111	137	95	140	60.0	25	8	28.3	99	99	70	160	40	12.0	60	40	41.0	11
(M)RT 40×70	115	141	120	156	60.5	28	8	31.3	109	109	70	185	45	12.0	70	40	41.0	11
(M)RT 50×60	111	137	95	140	60.0	25	8	28.3	99	99	84	160	40	12.0	60	50	49.0	11
(M)RT 50×70	115	141	120	156	60.5	28	8	31.3	109	109	84	185	45	12.0	70	50	49.0	11
(M)RT 50×80	147	180	140	180	70.0	35	10	38.3	128	128	84	222	62	13.0	80	50	49.0	11
(M)RT 70×100	164	198	160	210	76.0	40	12	43.3	147	147	109	260	60	16.5	100	70	60.5	13
(M)RT 80×100	164	198	160	210	76.0	40	12	43.3	147	147	128	260	60	16.5	100	80	70.0	13
(M)RT 80×120	180	216	200	250	86.0	45	14	48.8	175	175	128	305	65	18.0	120	80	70.0	15
(M)RT 100×150	220	260	270	340	110.0	55	16	59.0	219	219	147	380	80	20.0	150	100	76.0	19
(M)RT 100×180	264	318	300	370	132.0	60	18	65.2	264	264	147	460	100	22.0	180	100	76.0	22

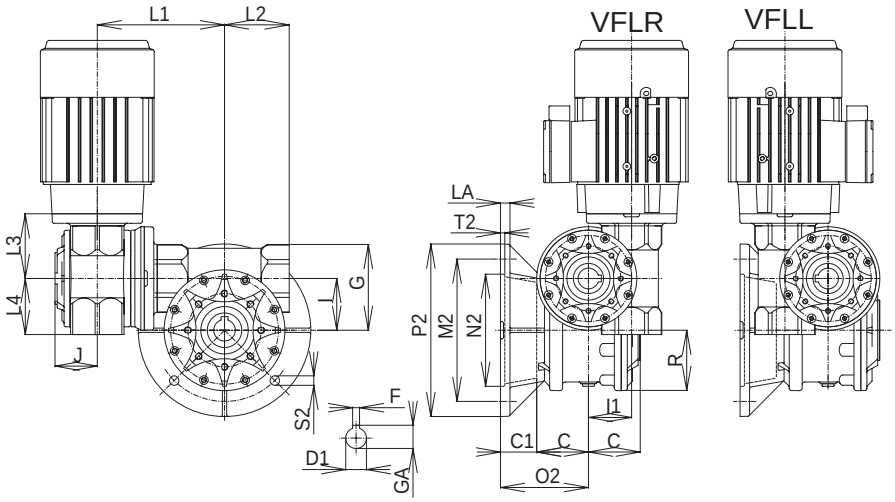
Size	L1	L2	L3	L4	R	R1	M1	N1	O1	S1	T1	C1	LA	M2	N2	O2	S2	T2
(M)RT 30×30	90.0	46	55	46	42	42	65	55	29.0	M6×7	2.5	18.5	6	65	50	50.0	6.5	4
(M)RT 30×40	103.0	57	55	46	48	42	65	50	38.5	M6×12	2.5	41.0	11	115	95	82.0	9.0	4
(M)RT 30×50	113.0	65	55	46	56	42	75	60	46.5	M6×12	2.5	43.0	11	130	110	92.0	10.0	4
(M)RT 40×50	124.0	65	65	57	56	48	75	60	46.5	M6×12	2.5	43.0	11	130	110	92.0	10.0	4
(M)RT 40×60	135.0	75	65	57	70	48	85	70	57.5	M6×12	2.5	42.0	12	165	130	102.0	11.0	4
(M)RT 40×70	143.0	81	65	57	76	48	100	80	57.0	M6×16	3.5	51.0	12	165	130	111.5	11.0	5
(M)RT 50×60	147.5	75	75	65	70	56	85	70	57.5	M6×12	2.5	42.0	12	165	130	102.0	11.0	4
(M)RT 50×70	155.5	81	75	65	76	56	100	80	57.0	M8×16	3.5	51.0	12	165	130	111.5	11.0	5
(M)RT 50×80	164.5	95	75	65	90	56	130	110	66.5	M10×16	3.5	50.0	12	165	130	120.0	11.0	5
(M)RT 70×100	208.5	117	101	81	107	76	130	110	72.5	M10×20	3.5	76.0	15	215	180	135.0	13.0	5
(M)RT 80×100	213.0	117	110	95	107	90	130	110	72.5	M10×20	3.5	76.0	15	215	180	135.0	13.0	5
(M)RT 80×120	235.0	138	110	95	128	90	165	130	80.5	M12×25	3.5	86.0	15	215	180	145.0	13.0	5
(M)RT 100×150	238.0	171	130	117	160	107	215	180	106.0	M14×25	4.0	110.0	20	300	250	208.0	17.0	6
(M)RT 100×180	304.0	202	130	117	189	107	265	230	129.0	M16×25	4.0	132.0	20	350	300	220.0	18.0	5

Table 12.9 **Outline Drawings**









13. CROSS COMBINATION OF TWO GEAR UNITS

Table 13.1

(M)RT	Part Dwrg. No.				RT 30	RT 40	RT 50	RT 60	RT 70	RT 80	RT 100	RT 120	RT 150	RT 180
30	3530	75	361031	Adapter RT30×FT65	● 1									
30	3530	75	361032	Adapter RT30×FT75		● 1	● 1							
40	3530	75	361007	Adapter RT40×FT75			● 2							
40	3530	75	361025	Adapter RT40×FT100				● 2	● 2					
50	3530	75	361034	Adapter RT50×FT100				● 3	● 3	● 3				
70	3530	75	361035	Adapter RT70×FT165							● 4			
80	3530	75	361117	Adapter RT80×FT130							● 5	● 5		
100	Adapter not available												●	●

Pos.	Shaft Dwrg. No.			Shaft diameter
1	4501	25	460308	∅14 / ∅11
2	4501	25	458122	∅19 standard
3	4501	25	458123	∅24 standard
4	4501	25	158125	∅28 standard
5	4501	25	459241	∅35 / ∅28

14. TABLE OF WEIGHT

Table 14.1 **RT/MRT Gear Unit Weight**

[kg]		(M)RT 30A	(M)RT 40A	(M)RT 50A	(M)RT 60A	(M)RT 70A	(M)RT 80A	(M)RT 100A	(M)RT 120A	(M)RT 150A	(M)RT 180A
Execution	FTRL	1.8	2.3	4.0	5.8	7.2	11.5	25	36	75	132
	A	2.0	2.6	4.5	6.5	8.0	13.2	26	37	79	136
	FF	2.0	2.8	4.4	6.5	8.1	12.7	34	47	89	154
	FFRL	2.2	3.3	4.8	7.2	9.0	13.9	43	57	103	177

Table 14.2 **MRP Gear Units Weight**

[kg]		MRP 40A	MRP 50A	MRP 60A	MRP 70A (P60)	MRP 70A (P80)	MRP 80A	MRP 100A	MRP 120A	MRP 150A	MRP 180A
Execution	FTRL	2.8	4.5	7.8	9.2	9.7	14.0	35	46	93	150
	A	3.1	5.0	8.5	10.0	10.5	15.7	38	50	97	154
	FF	3.3	4.9	8.5	10.1	10.6	15.2	45	58	107	172
	FFRL	3.8	5.3	9.2	11.0	11.5	16.4	55	71	121	195

Note: *The shown gear unit weight does not include electric motor. The gear unit weight is shown for the execution with the medium input flange and gear ratio i = 50. The actual weight of gear units can slightly differ from the nominal weight shown depending on the gear ratio and the input flange.*

15. WORM GEAR PARAMETERS & REVERSIBILITY / SELF-LOCKING PROPERTIES

Table 15.1 **Worm Parameters**

MRT		5	7.5	10	12.5	15	20	25	30	40	50	60	70	80	100
30A	m_n	1.30	1.35	1.40	1.10	1.35	1.10	1.66	1.40	1.02	0.85	0.72	0.62	0.55	0.45
	γ	25°23´	18° 4´	13°21´	10°17´	8°51´	7°37´	5°13´	4°31´	3° 6´	2°48´	2°29´	2° 9´	1°59´	1°44´
	Z_1	6	4	3	3	2	2	1	1	1	1	1	1	1	1
40A	m_n	2.00	1.84	2.00	1.62	2.06	1.62	1.25	2.06	1.62	1.25	1.10	0.95	0.80	0.65
	γ	30°0´	27°43´	18°43´	15°59´	12°42´	12°17´	9°26´	6°41´	6°18´	4°13´	4°38´	4° 6´	2°52´	2°33´
	Z_1	5	4	3	3	2	2	2	1	1	1	1	1	1	1
50A	m_n	2.15	2.25	2.55	2.00	2.50	2.00	1.55	2.55	2.00	1.60	1.36	1.15	1.02	0.82
	γ	37°45´	21°19´	20°55´	17°27´	13°56´	12° 9´	9°12´	6°23´	5°53´	4°46´	4°18´	3°27´	3°13´	2°38´
	Z_1	6	4	3	3	2	2	2	1	1	1	1	1	1	1
60A	m_n	3.00	2.75	3.00	2.43	3.125	2.43	1.97	3.125	2.43	1.97	1.65	1.43	1.25	1.00
	γ	30°20´	25°28´	19°28´	19° 2´	13°37´	12°25´	10°23´	7° 6´	6°14´	5°23´	4°35´	4°11´	3°41´	2°56´
	Z_1	5	4	3	3	2	2	2	1	1	1	1	1	1	1
70A	m_n	3.50	3.20	3.50	2.80	3.60	2.80	2.25	3.60	2.75	2.25	1.85	1.60	1.40	1.15
	γ	32°31´	25°11´	19°49´	16°56´	12°50´	11°21´	9°21´	6°36´	5°28´	4°46´	3°45´	3°20´	2°56´	2°40´
	Z_1	5	4	3	3	2	2	2	1	1	1	1	1	1	1
80A	m_n	4.00	3.65	4.00	3.20	4.00	3.20	2.58	4.00	3.20	2.58	2.20	1.85	1.65	1.35
	γ	30° 0´	24°54´	18°37´	17°27´	11°12´	11°32´	9°21´	5°55´	5°59´	4°51´	4°35´	3°31´	3°26´	3° 6´
	Z_1	5	4	3	3	2	2	2	1	1	1	1	1	1	1
100A	m_n	-	4.50	4.50	4.00	5.00	3.75	3.00	5.00	3.75	3.00	2.50	2.25	2.00	1.50
	γ	-	17°55´	13°20´	17°15´	12° 1´	8°59´	7° 6´	5°59´	4°29´	3°33´	2°54´	3°4´	2°54´	1°44´
	Z_1	-	4	3	3	2	2	2	1	1	1	1	1	1	1
120A	m_n	-	5.50	6.00	5.00	6.00	4.50	3.75	6.00	4.50	3.75	3.00	2.75	2.50	2.00
	γ	-	20°44´	19°28´	19°28´	12°50´	8°56´	8°18´	6°23´	4°27´	4° 8´	2°53´	3°22´	3°38´	2°54´
	Z_1	-	4	3	3	2	2	2	1	1	1	1	1	1	1
150A	m_n	-	7.0	7.0	6.0	7.5	6.0	4.5	8.0	6.0	5.0	4.0	3.5	3.0	2.5
	γ	-	23°34´	15°37´	15° 7´	13° 8´	13° 5´	7° 8´	8° 0´	5°56´	5°59´	3°53´	3°42´	2°53´	2°54´
	Z_1	-	4	3	3	2	2	2	1	1	1	1	1	1	1
180A	m_n	-	8.0	8.0	7.0	8.0	7.0	5.5	9.0	7.0	5.5	4.5	4.0	3.5	3.0
	γ	-	17°55´	13°20´	12°22´	8°49´	10°46´	7°39´	5°51´	5° 7´	3°44´	2°53´	2°54´	2°32´	2°46´
	Z_1	-	4	3	3	2	2	2	1	1	1	1	1	1	1

Legend: *m_n – gear module, γ – helix angle (for $\gamma > 23^\circ$ left helix is used for technological reasons), Z_1 – number of flights*

Self-locking Properties

A worm gearing is self-locking if it is not possible to turn the input shaft by turning of the output shaft. The worm gearing is self-locking if the worm helix angle is lower than the friction angle at idle or when the static efficiency of the gearing is lower than 50 %. The gearing is then statically self-locking. Should the worm helix angle be lower than dynamic friction angle or when the dynamic efficiency of the gearing is lower than 50 %, the gearing is dynamically self-locking.

The following relation applies:

$\eta = tg\gamma / tg(\gamma+\varphi)$ or $\eta = tg\gamma / tg(\gamma + \text{arctg}\ (\mu z)$

η efficiency φ friction angle ($\varphi = \text{arctg}\ (\mu_z)$)

γ worm helix angle μ_z coefficient of friction in gearing

Static coefficient of friction between gear materials (steel – bronze) is within the range of μ_z = 0.09 to 0.14 depending on the lubricant used (its age, conditions and temperature) and the roughness of contact surfaces (given by gearing wear). The conforming friction angle is $\varphi_s = 5^\circ$ to 8°.

When static self-locking property can be influenced by vibrations or shocks a dynamic coefficient of friction shall be considered. The value of the dynamic coefficient of friction depends on surface roughness, the lubricant used, the load applied and the sliding speed. It ranges within μ_z = 0.02 and 0.05 for standard load and speed 900 to 1400 rpm. The conforming dynamic friction angle is $\varphi d = 1^\circ$ to 3°.

With respect to the fact that the helix angles are higher than 1.5° at all gear ratios, the 100% self-locking cannot be guaranteed. In cases when the gear unit must be secured against slipping, it is recommended to use electric motors with brakes.

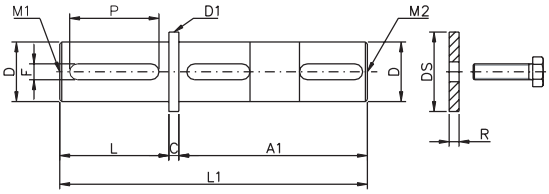
Table 15.2 **Self-locking Status**

γ	Self-locking
> 25°	total reversibility
12° – 25°	static reversibility
	reversing rapidly
	dynamic reversibility
8° – 12°	variable and static reversibility
	reversing rapidly when vibrating
	dynamic reversibility
5° – 8°	static self-locking
	reversing when vibrating
	light dynamic self-locking
3° – 5°	static self-locking
	reversing slowly when vibrating
	almost dynamically self-locking
	light dynamic reversibility when vibrating
1° – 3°	static self-locking
	dynamic self-locking
	light dynamic reversibility when vibrating
<1°	full static and dynamic self-locking

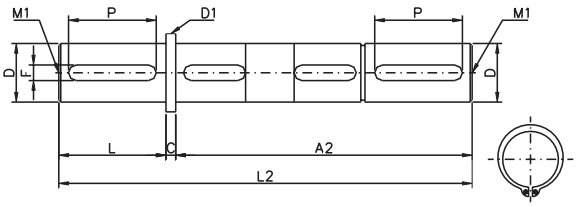
16. ACCESSORIES

Table 16.1 **Output Shafts**

Output Shaft – single sided

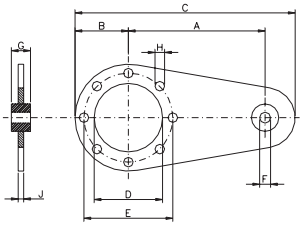


Output Shaft – double sided



TYPE	A1	A2	C	Dh7	D1	L	L1	L2	F	P	R	DS	M1	M2	Kg	
													DIN 332		I	II
RT - MRT 30A	62	94	3	14	17	30	94	127	5	20	2.5	20	M5	M5	0.12	0.16
RT - MRT 40A	80	132	5	19	23	40	125	177	6	32	3.0	25	M6	M6	0.30	0.40
RT - MRT 50A	97	158	5	24	28	50	152	213	8	40	3.5	34	M8	M8	0.55	0.75
RT - MRT 60A	118	185	5	25	30	60	183	250	8	50	3.5	34	M10	M8	0.70	0.90
RT - MRT 70A	120	191	5	28	35	60	185	256	8	50	3.5	34	M10	M8	0.90	1.25
RT - MRT 80A	138	205	5	35	40	60	203	270	10	50	4.0	45	M12	M8	1.50	2.00
RT - MRT 100A	150	234	10	40	46	80	240	324	12	70	5.0	53	M16	M12	2.40	3.20
RT - MRT 120A	170	264	10	45	51	90	270	364	14	80	5.0	53	M16	M12	3.40	4.60
RT - MRT 150A	218	323	10	55	62	100	328	433	16	90	6.0	68	M20	M16	6.10	8.10
RT - MRT 180A	262	377	10	60	68	110	382	497	18	100	6.0	78	M20	M16	8.90	12.00

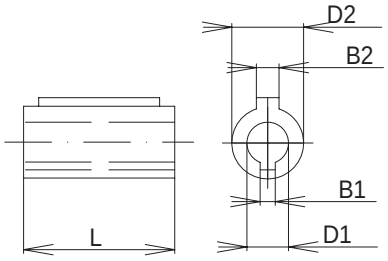
Table 16.2 **Reaction Arm**



TYPE	A	B	C	D	E	F	G	H	J	Weight
										Kg
RT - MRT 30A	85	40	143	55	65	8	14	7	4	0.22
RT - MRT 40A	100	39	161	50	65	8	14	7	4	0.25
RT - MRT 50A	100	44	170	60	75	10	20	7	4	0.30
RT - MRT 60A	150	53	233	70	85	10	20	9	5	0.57
RT - MRT 70A	200	62.5	295	80	100	14	24	9	6	1.10
RT - MRT 80A	200	77.5	315	110	130	14	24	11	6	1.25
RT - MRT 100A	230	77.5	345	110	130	14	24	11	6	1.35
RT - MRT 120A	260	95	395	130	165	16	26	13	8	2.45
RT - MRT 150A	300	125	480	180	215	16	26	15	8	3.70
RT - MRT 180A	350	150	545	230	265	25	30	17	8	4.00

Flanges and Feet: With (M)RT..A gear unit series sets of flanges and feet (c/w screws) can be supplied as an extra accessories:
1) 1 pc FF flange 2) 2 pcs FF flange 3) 2 pcs feet

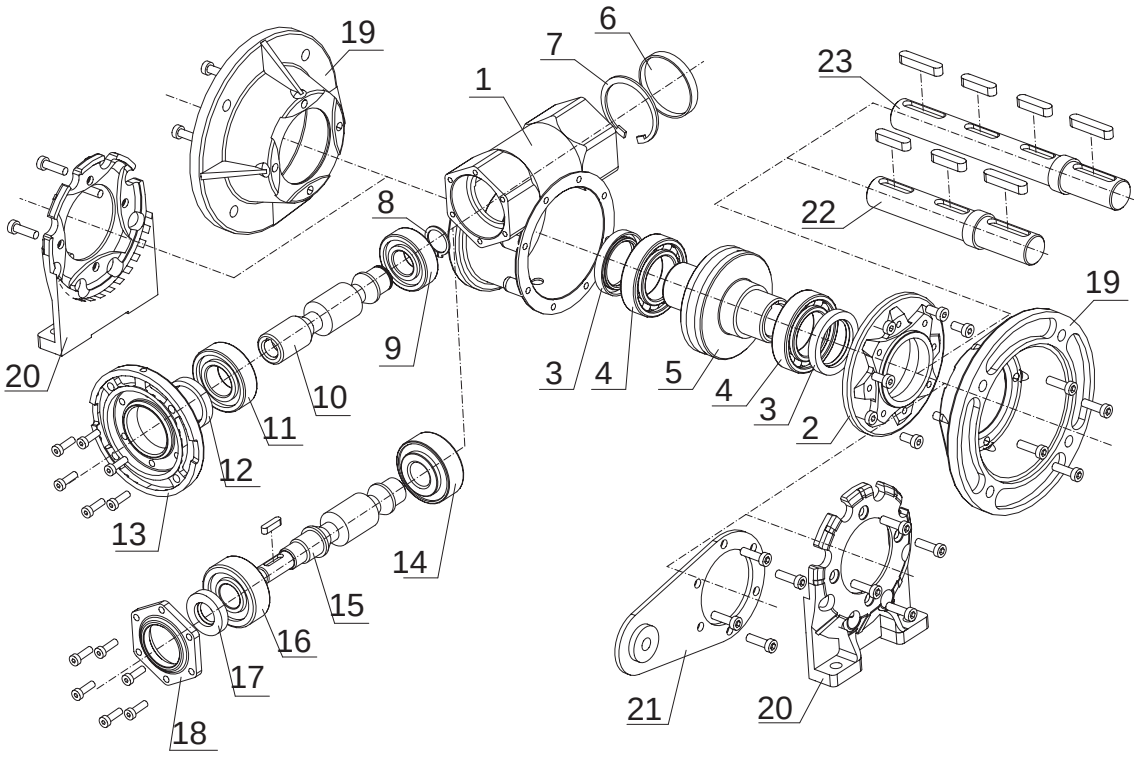
Table 16.3 **Reducer Shaft Sleeves**



Part. No.	D1	D2	B1	B2	L
1109 6356	9	11	3	4	20
1409 7156	9	14	3	5	30
1411 7163	11	14	4	5	23
1911 8063	11	19	4	6	40
2411 9063	11	24	4	8	50
1914 8071	14	19	5	6	30
2414 9071	14	24	5	8	50
2814 0071	14	28	5	8	60
2419 9080	19	24	6	8	40
2819 0080	19	28	6	8	60
3819 3280	19	38	6	10	80
2824 0090	24	28	8	8	50
3824 3290	24	38	8	10	80
4224 6090	24	42	8	12	110
3828 3200	28	38	8	10	80
4228 6000	28	42	8	12	110
4238 6032	38	42	10	12	80

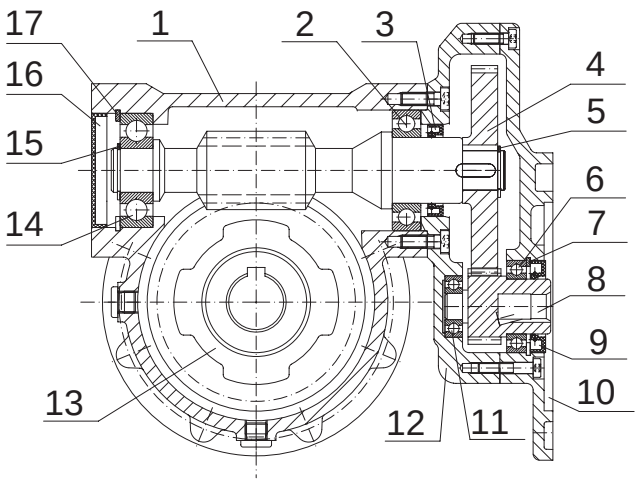
17. SPARE PARTS

Fig. 17.1 **Spare Parts for MRTs**



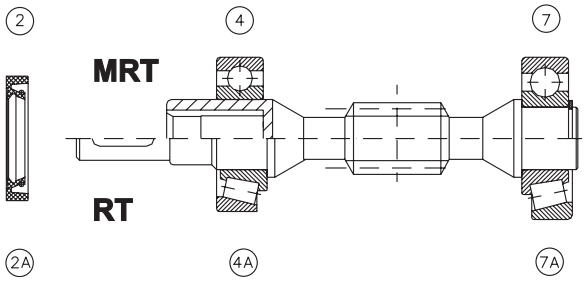
1. Housing
2. FT flange
3. Oil seal
4. Bearing
5. Worm wheel
6. NBR cap
7. Circlip
8. Circlip
9. Bearing
10. Worm gear
11. Bearing
12. Oil seal
13. Input flange
14. Bearing
15. RT worm
16. Bearing
17. Oil seal
18. RT cap
19. FF flange
20. Foot
21. Reaction arm
22. Output single-sided shaft – complete
23. Output double-sided shaft – complete

Fig. 17.2 **Spare Parts for MRPs**



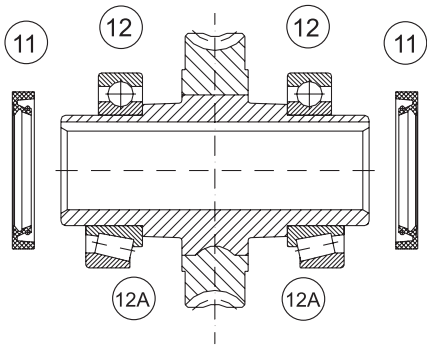
1. Housing
2. Bearing
3. Oil seal
4. Spur gear step
5. Circlip
6. Bearing
7. Circlip
8. Pinion
9. Oil seal
10. Flange
11. Bearing
12. Step gearing housing
13. Worm wheel
14. Bearing
15. Circlip
16. NBR cap
17. Circlip

Table 17.1 **Worm Shaft**



Type	Motor	MRT			RT		
		Bearing 4	Bearing 7	Oil gasket 2	Bearing 4A	Bearing 7A	Oil gasket 2A
30A	56; 63	HK 2016 20×26×16	6300 10×35×11	20×28×7	6201 12×32×10	6300 10×35×11	12×32×7
40A	63	6004 20×42×12	6302 15×42×13	20×35×7	6302 15×42×13	6302 15×42×13	15×26×7
	71	61905 25×42×9	6302 15×42×13	25×35×7			
50A	63; 71	6205 25×52×15	6304 20×52×15	25×40×7	30304 20×52×15	30304 20×52×15	17×35×7
	80	61906 30×47×9	6304 20×52×15	30×40×7			
		51107 35×37×12	30304 20×52×15	30×40×7			
60A	71; 80	32006 30×55×17	30205 25×52×15	30×47×7	30206 30×62×16	30205 25×52×13	28×40-7
	90	61907 35×55×10	6304 25×52×15	35×47×7			
		51107 35×52×12	30205 25×52×15	35×47×7			
70A	71; 80	32006 30×55×17	30205 25×52×15	30×47×7	30206 30×62×16	30205 25×52×13	28×40-7
	90	61907 35×55×10	6304 25×52×15	35×47×7			
		51107 35×52×12	30205 25×52×15	35×47×7			
80A	80; 90	30207 35×72×17	30306	35×55×7	30206 30×62×16	30205 25×52×13	30×55×7
	100	32008 40×69×19	30306 30×72×19	40×55×7			
100A	80; 90; 100; 112	32208 40×80×24.75	31307 35×80×22.75	40×62×12	32208 40×80×24.75	31307 35×80×22.75	40×62×8
120A	80; 90; 100; 112	32208 40×80×24.75	31307 35×80×22.75	40×62×12	32208 40×80×24.75	31307 35×80×22.75	40×62×8
150A	100; 112; 132	32211 55×100×22.75	31309 45×100×27.75	55×80×10	31309 45×100×27.75	31309 45×100×27.75	45×75×8
180A	112; 132; 160	31312 60×130×33.5	31312 60×130×33.5	60×80×10	31312 60×130×33.5	31312 60×130×33.5	60×75×9

Table 17.2 **Worm Wheel**



Type	12	12A	11
RT - MRT 30A	6005 25×47×12	7005 25×47×12	 25×40×7
RT - MRT 40A	6006 30×55×13	32006 30×55×17	 30×47×7
RT - MRT 50A	6007 35×62×14	32007 35×62×18	 35×50×7
RT - MRT 60A	6008 40×68×15	32008 40×68×19	 40×55×7
RT - MRT 70A	6009 45×75×16	32009 45×75×20	 45×60×8
RT - MRT 80A	6010 50×80×16	32010 50×80×20	 50×65×8
RT - MRT 100A	6011 55×90×18	32011 55×90×23	 55×72×10
RT - MRT 120A	6013 65×100×18	32013 65×100×23	 65×85×12
RT - MRT 150A	6216 80×140×26	30216 80×140×28.25	 80×100×10
RT - MRT 180A	6218 90×160×30	32218 90×160×42.5	 90×110×12

18. LUBRICANTS

RT/MRT gear units are lubricated by running the worm wheel or the worm in oil in combination with oil splashing. Under normal conditions a reliable operation as well as service life and efficiency of the gear units are secured. Gearboxes sizes 30 to 80 can be used at any mounting position. Gearboxes sizes 100 to 180 are suitable for mounting positions as shown in Table 3.1 due to positioning of the breathe plug. For any other mounting position please contact the manufacturers.

RT/MRT gear units are generally supplied filled for life – ÖMV PG 460EP is a synthetic oil enabling maintenance-free operation. Under normal conditions no oil needs to be changed during service life of the gearboxes. Should a different lubricant be required, e.g. due to more demanding conditions (higher operating temperature, high speed etc.), it must be established that oil additives do not affect bronze and/or oil seals in any way. It is recommended to use synthetic oils which guarantee high service life, stability and dynamic efficiency of the worm gears. When mineral oil is used, it must be changed in certain periods. In case grease is used as lubricant, reduction of heat dissipation, reduction of efficiency and reduced lubrication of all moving parts should be expected causing higher wear of the gear unit. Recommended equivalent lubricants are shown in the Table 18.1. The oil quantity per individual type and size of gear units is shown in the Table 18.2.

Table 18.1 **Equivalent Lubricants**

Ambient temperature	-10 °C – +50 °C		-30 °C – +100 °C	-40 °C – +120 °C	-10° C – +60 °C
Lubricant	Mineral oil		Synthetic oil		Synthetic grease
Type of load	Normal	High	Normal and high		Normal and high
OMV	Öle HST 320 EP	Öle HST 460 EP	PG 460 EP	PG 220 EP	Duraplex EP 00
Agip	Blasia 320	Blasia 460	Blasia S	-	-
Aral	Degol BG 320	Degol BG 460	Degol GS 220	Degol PAS 230	Aralub BAB EP
Castrol	Alpha SP 320	Alpha SP 460	Alpha SH 220	-	Alphagel
ESSO	Spartan EP 320	Spartan EP 460	-	-	Grease S420
Kluber	Lamora 320	Lamora 460	Syntheso HT220	Syntheso HT220	Strugtovis P Liquid
Mobil	Mobilgear 632	Mobilgear 634	Glycoil 30	-	Glycoil Grease 00
Shell	Omala EP 320	Omala EP 460	Tivela Oil WB	Omala HD 320	Tivela GL 00
Optimol	Optigear BM 320	Optigear BM 460	Optiflex A 220	-	Longtime PD 00
Total	Carter EP 320	Carter EP 460	-	-	-
Paramo	Paramol CLP 320	Paramol CLP 460	-	-	-

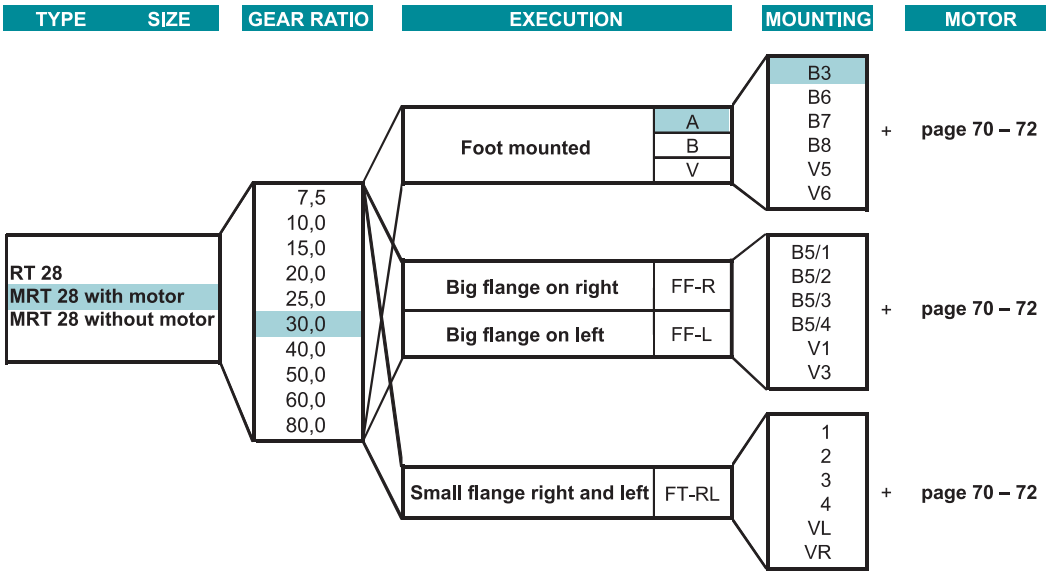
All gear units are supplied filled for life as standard.

Table 18.2 **Lubricant Fill**

Type	Oil [l]
(M)RT 30A	0.04
(M)RT 40A	0.13
(M)RT 50A	0.21
(M)RT 60A	0.36
(M)RT 70A	0.46
(M)RT 80A	0.70
(M)RT 100A	1.60
(M)RT 120A	2.20
(M)RT 150A	4.00
(M)RT 180A	7.00
MRP 40A	0.13+0.05
MRP 50A	0.21+0.05
MRP 60A	0.36+0.15
MRP 70A	0.46+0.20
MRP 80A	0.70+0.20
MRP 100A	1.60+0.30
MRP 120A	2.20+0.40
MRP 150A	4.00+0.30
MRP 180A	7.00+0.30

19. MRT 28 SMALL WORM GEAR UNIT

Type Identification Diagram



Example:

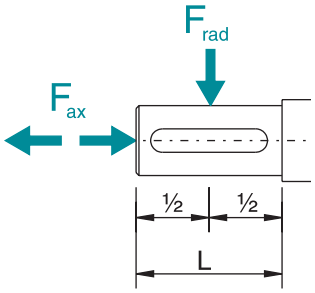
MRT 28 with motor	30		A	B3	73-4p 0,12 kW

MRT 28 worm-gear unit, gear ratio 30:1 assembly version A/B3, 63-4p, 0,12 kW electric motor with 75 mm flange

Tab. 19.1 Radial and Axial Load on Shaft

Max. permissible radial and axial load [N]											
	n_1	n_2	n_2	n_2	n_2	n_2	n_2	n_2	n_2	n_2	n_2
i		7.5	10	15	20	25	30	40	50	60	80.0
rpm	1400	187.0	140	93	70	56	47	35	28	23	17.5
F_{ax}	20	130.0	150	170	180	200	210	230	250	270	290.0
F_{rad}	100	660.0	730	840	920	990	1050	1160	1250	1330	1460.0

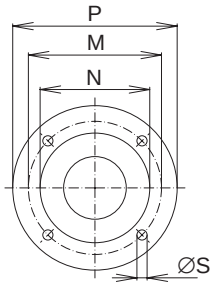
Max. permissible radial and axial load for taper bearings [N]											
	n_1	n_2	n_2	n_2	n_2	n_2	n_2	n_2	n_2	n_2	n_2
i		7.5	10	15	20	25	30	40	50	60	80.0
rpm	1400	187.0	140	93	70	56	47	35	28	23	17.5
F_{ax}	20	160.0	170	200	210	230	240	260	280	300	320.0
F_{rad}	100	790.0	860	980	1060	1140	1200	1310	1400	1490	1610.0



Tab. 19.2 **Worm Parameters**

MRT		7.5	10	15	20	25	30	40	50	60	80
28	m_n	1.25	1.25	1.25	1.00	1.50	1.25	1.00	0.80	0.65	0.55
	β	17° 22´	13°8´	8°43´	7°40´	5°23´	4°2´	3° 39´	2°53´	2°12´	2°38´
	z1	4	3	2	2	1	1	1	1	1	1

Tab. 19.3 **Dimensions and Combinations of Gear Units Input Flanges with IEC Electric Motors**



For motor size	IEC	Shaft dia	M	N H7	P	S
56	B14A	9	65	50	80	5.5
63	B14A	11	75	60	90	5.5

Table 19.4 **Rated Data**

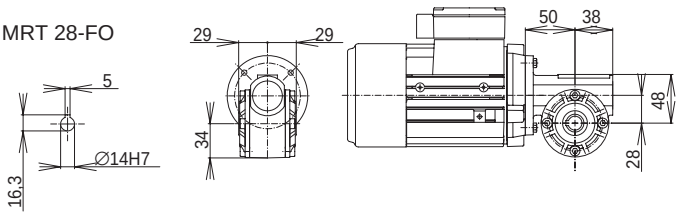
Type MRT RT	i	n_1 – 1700 [rpm] (4p-60 Hz)				n_1 – 1400 [rpm] (4p-50 Hz)				n_1 – 1100 [rpm] (6p-50 Hz)				n_1 – 900 [rpm] (6p-50 Hz)				η_s
		n_2	P_1	M_{2max}	η	n_2	P_1	M_{2max}	η	n_2	P_1	M_{2max}	η	n_2	P_1	M_{2max}	η	
		[rpm]	[kW]	[Nm]	[%]	[rpm]	[kW]	[Nm]	[%]	[rpm]	[kW]	[Nm]	[%]	[rpm]	[kW]	[Nm]	[%]	[%]
28	7.5	226.7	0.336	12	84.7	186.7	0.316	14	83.4	146.7	0.264	14	81.5	120.0	0.229	15	79.4	65.4
	10.0	170.0	0.263	13	84.5	140.0	0.247	14	83.2	110.0	0.206	15	81.2	90.0	0.191	16	79.1	62.1
	15.0	113.3	0.188	13	78.7	93.3	0.178	14	77.0	73.3	0.150	15	74.4	60.0	0.144	17	71.9	52.9
	20.0	85.0	0.141	12	75.7	70.0	0.139	14	73.6	55.0	0.118	15	70.7	45.0	0.108	16	67.9	49.8
	25.0	68.0	0.133	13	69.4	56.0	0.131	15	67.2	44.0	0.112	16	63.9	36.0	0.105	17	60.9	41.4
	30.0	56.7	0.141	16	65.1	46.7	0.132	17	62.8	36.7	0.110	17	59.4	30.0	0.100	18	56.3	36.4
	40.0	42.5	0.103	14	60.5	35.0	0.098	16	58.0	27.5	0.085	16	54.4	22.5	0.076	17	51.2	32.5
	50.0	34.0	0.083	13	55.7	28.0	0.079	15	53.5	22.0	0.067	15	51.2	18.0	0.064	16	47.1	30.2
	60.0	28.3	0.056	9	45.6	23.3	0.062	11	43.5	18.3	0.051	11	41.1	15.0	0.051	12	37.2	26.4
	80.0	21.3	0.036	7	43.2	17.5	0.040	9	41.0	13.8	0.033	9	39.8	11.3	0.033	10	35.6	26.1

Table 19.5 **Performance Data**

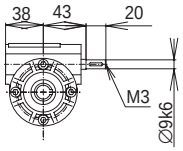
n_1 – 1400 [rpm]					
Output	Speed	Gear ratio	Torque	Service factor	Motor
P_1	n_2	i	M_2	S_f	
[kW]	[rpm]	[–]	[Nm]	[–]	
0.06	140	10.0	3.4	4.1	56-4p
	93	15.0	4.7	3.0	56-4p
	70	20.0	6.0	2.3	56-4p
	56	25.0	6.9	2.2	56-4p
	47	30.0	7.7	2.2	56-4p
	35	40.0	9.5	1.7	56-4p
	28	50.0	10.9	1.4	56-4p
	23	60.0	10.7	1.0	56-4p
0.09	187	7.5	3.8	3.7	56-4p
	140	10.0	5.1	2.7	56-4p
	93	15.0	7.1	2.0	56-4p
	70	20.0	9.0	1.6	56-4p
	56	25.0	10.3	1.5	56-4p
	47	30.0	11.6	1.5	56-4p
	35	40.0	14.2	1.1	56-4p
	28	50.0	16.4	0.9	56-4p
0.12	187	7.5	5.1	2.7	63-4p
	140	10.0	6.8	2.1	63-4p
	93	15.0	9.5	1.5	63-4p
	70	20.0	12.0	1.2	63-4p
	56	25.0	13.8	1.1	63-4p
	47	30.0	15.4	1.1	63-4p
	35	40.0	19.0	0.8	63-4p
0.18	187	7.5	7.7	1.8	63-4p
	140	10.0	10.2	1.4	63-4p
	93	15.0	14.2	1.0	63-4p
	70	20.0	18.1	0.8	63-4p

Table 19.6 **Dimensions**

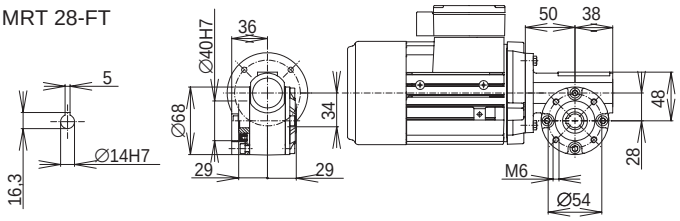
MRT 28-FO



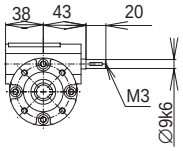
RT 28-FO



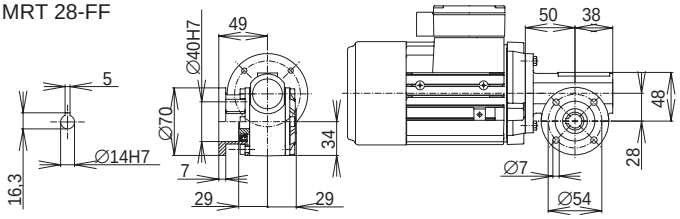
MRT 28-FT



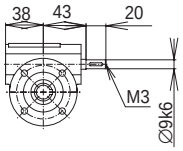
RT 28-FT



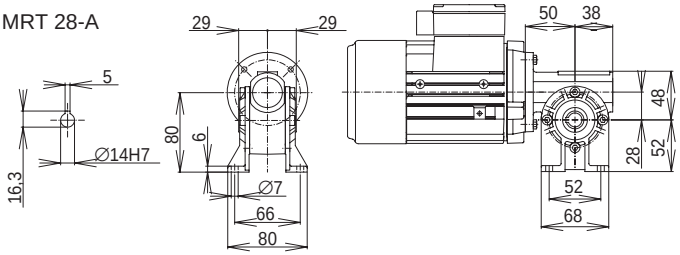
MRT 28-FF



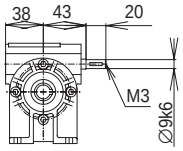
RT 28-FF



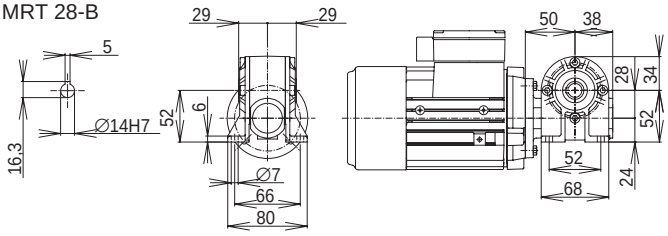
MRT 28-A



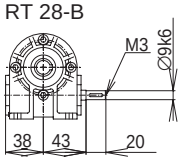
RT 28-A



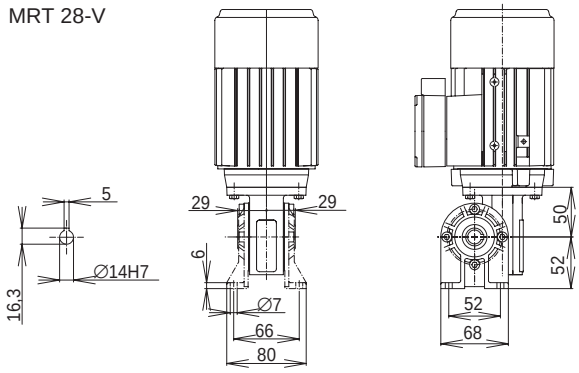
MRT 28-B



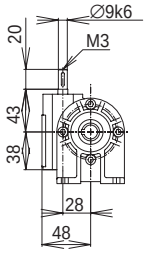
RT 28-B



MRT 28-V

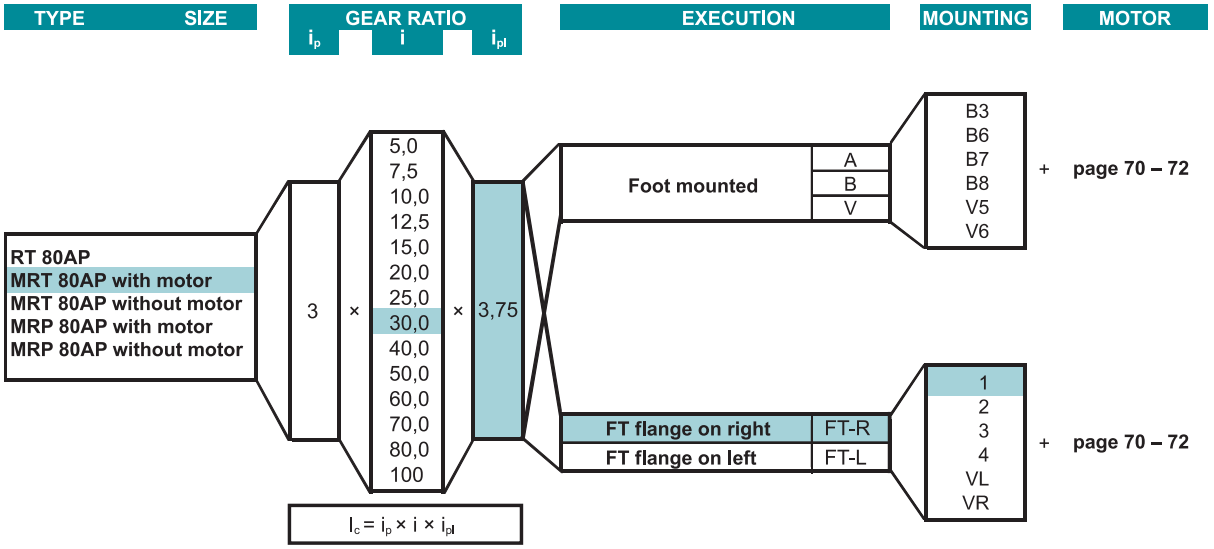


RT 28-V



20. MRT 80AP / RT 80AP WORM GEAR UNIT WITH PLANETARY REDUCTION

Type Identification Diagram



Example: MRT 80AP with motor 112,5 FT-R 1 90-4p 1,5 kW

MRT 80AP worm-gear unit with planet, gear ratio 112,5, assembly version FT-R/1, 90-4p 1,5 kW electric motor width 115 mm flange

Table 20.1 **Rated Data**

Type RT MRT	i	47.6n_1 – 1400 [rpm] (4p-50 Hz)				n_1 – 1100 [rpm] (6p-50 Hz)				n_1 – 900 [rpm] (6p-50 Hz)				η_s
		n_2	P_1	M_{2max}	η	n_2	P_1	M_{2max}	η	n_2	P_1	M_{2max}	η	
		[rpm]	[kW]	[Nm]	[%]	[rpm]	[kW]	[Nm]	[%]	[rpm]	[kW]	[Nm]	[%]	[%]
80AP	28.1	49.8	2.925	460	82.0	39.1	2.686	534	81.0	32.0	2.295	554	81.0	63.7
	37.5	37.3	2.676	546	79.7	29.3	2.287	589	79.0	24.0	2.089	651	78.3	57.9
	46.9	29.9	2.542	632	78.0	23.5	2.138	669	77.0	19.2	1.900	717	76.0	53.9
	56.3	24.9	2.494	725	75.8	19.5	2.050	751	74.8	16.0	1.782	786	73.9	49.5
	75.0	18.7	1.774	675	74.5	14.7	1.520	725	73.4	12.0	1.363	783	72.2	48.5
	93.8	14.9	1.379	647	73.2	11.7	1.188	696	71.8	9.6	1.082	759	70.5	47.1
	112.5	12.4	1.574	799	65.9	9.8	1.354	851	64.5	8.0	1.016	765	63.1	34.4
	150.0	9.3	1.176	773	64.0	7.3	0.994	810	62.3	6.0	0.881	851	60.7	33.3
	187.5	7.5	0.901	710	61.9	5.9	0.795	772	60.0	4.8	0.718	831	58.2	31.8
	225.0	6.2	0.742	638	55.8	4.9	0.638	670	53.9	4.4	0.572	712	52.1	25.0
	300.0	4.7	0.567	573	49.7	3.7	0.486	598	47.7	3.0	0.436	637	45.9	20.2
	375.0	3.7	0.408	501	47.6	2.9	0.395	592	45.5	2.4	0.363	627	43.4	19.0

Table 20.2 **Performance Data**

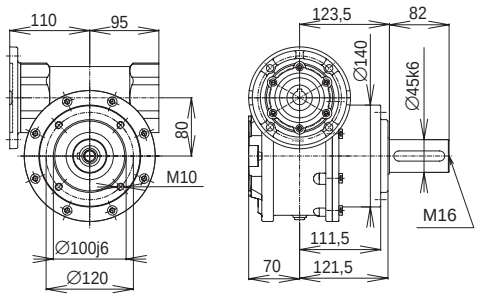
n_1 – 1400 [rpm]							
Output	Speed	Gear ratio			Torque	Service factor	Motor
P_1	n_2	i	$i_{šnek}$	$i_{planeta}$	M_2	S_f	
[kW]	[rpm]	[–]	[–]	[–]	[Nm]	[–]	
0.18	4.7	300.0	80.0	3.75	183	3.1	63-4p
	3.7	375.0	100.0	3.75	219	2.3	63-4p
0.25	6.2	225.0	60.0	3.75	214	3.0	71-4p
	4.7	300.0	80.0	3.75	254	2.3	71-4p
	3.7	375.0	100.0	3.75	304	1.6	71-4p
0.37	9.3	150.0	40.0	3.75	242	3.2	71-4p
	7.5	187.5	50.0	3.75	293	2.4	71-4p
	6.2	225.0	60.0	3.75	317	2.0	71-4p
	4.7	300.0	80.0	3.75	376	1.5	71-4p
	3.7	375.0	100.0	3.75	451	1.1	71-4p

Table 20.2 **Performance Data**

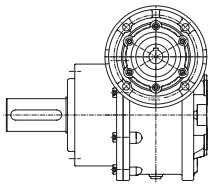
n_1 – 1400 [rpm]							
Output	Speed	Gear ratio			Torque	Service factor	Motor
P_1	n_2	i	$i_{šnek}$	$i_{planeta}$	M_2	S_f	
[kW]	[rpm]	[–]	[–]	[–]	[Nm]	[–]	
0.55	18.7	75.0	20.0	3.75	210	3.2	80-4p
	14.9	93.8	25.0	3.75	258	2.5	80-4p
	12.4	112.5	30.0	3.75	278	2.9	80-4p
	9.3	150.0	40.0	3.75	360	2.1	80-4p
	7.5	187.5	50.0	3.75	435	1.6	80-4p
	6.2	225.0	60.0	3.75	471	1.4	80-4p
	4.7	300.0	80.0	3.75	559	1.0	80-4p
0.75	29.9	46.9	12.5	3.75	187	3.4	80-4p
	24.9	56.3	15.0	3.75	218	3.3	80-4p
	18.7	75.0	20.0	3.75	286	2.4	80-4p
	14.9	93.8	25.0	3.75	351	1.8	80-4p
	12.4	112.5	30.0	3.75	379	2.1	80-4p
	9.3	150.0	40.0	3.75	491	1.6	80-4p
	7.5	187.5	50.0	3.75	594	1.2	80-4p
	6.2	225.0	60.0	3.75	642	1.0	80-4p
	4.7	300.0	80.0	3.75	763	0.8	80-4p
1.10	49.8	28.1	7.5	3.75	173	2.7	90-4p
	37.3	37.5	10.0	3.75	224	2.4	90-4p
	29.9	46.9	12.5	3.75	274	2.3	90-4p
	24.9	56.3	15.0	3.75	320	2.3	90-4p
	18.7	75.0	20.0	3.75	419	1.6	90-4p
	14.9	93.8	25.0	3.75	515	1.3	90-4p
	12.4	112.5	30.0	3.75	556	1.4	90-4p
	9.3	150.0	40.0	3.75	720	1.1	90-4p
	7.5	187.5	50.0	3.75	871	0.8	90-4p
1.50	49.8	28.1	7.5	3.75	236	1.9	90-4p
	37.3	37.5	10.0	3.75	306	1.8	90-4p
	29.9	46.9	12.5	3.75	374	1.7	90-4p
	24.9	56.3	15.0	3.75	437	1.7	90-4p
	18.7	75.0	20.0	3.75	572	1.2	90-4p
	14.9	93.8	25.0	3.75	703	0.9	90-4p
	12.4	112.5	30.0	3.75	759	1.1	90-4p
	9.3	150.0	40.0	3.75	982	0.8	90-4p
2.20	49.8	28.1	7.5	3.75	346	1.3	100-4p
	37.3	37.5	10.0	3.75	449	1.2	100-4p
	29.9	46.9	12.5	3.75	549	1.2	100-4p
	24.9	56.3	15.0	3.75	640	1.1	100-4p
	18.7	75.0	20.0	3.75	839	0.8	100-4p
3.00	49.8	28.1	7.5	3.75	472	1.0	100-4p
	37.3	37.5	10.0	3.75	612	0.9	100-4p
	29.9	46.9	12.5	3.75	749	0.8	100-4p
	24.9	56.3	15.0	3.75	873	0.8	100-4p

Table 20.3 **Dimensions**

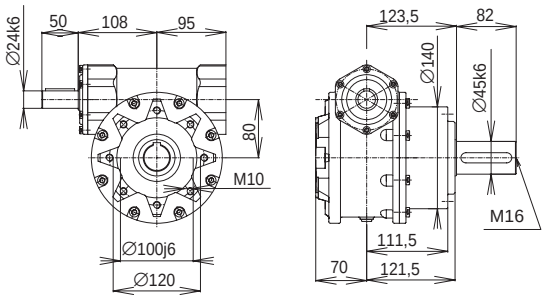
MRT80AP-FTR



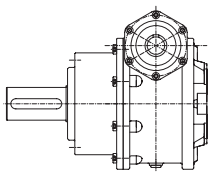
MRT80AP-FTL



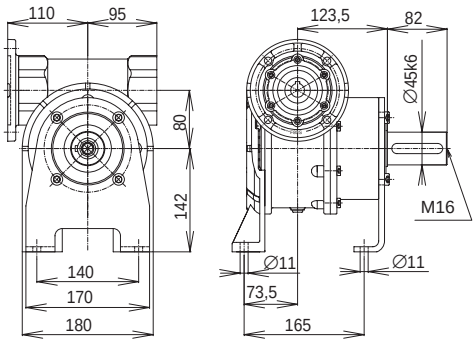
RT80AP-FTR



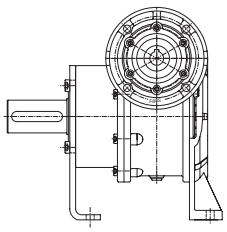
RT80AP-FTL



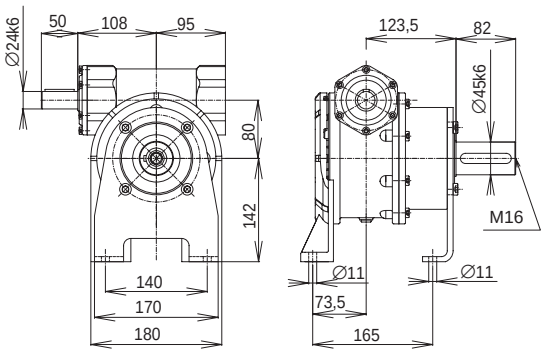
MRT80AP-AR



MRT80AP-AL



RT80AP-AR



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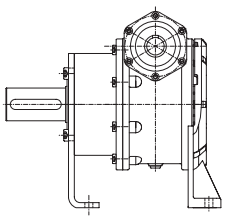

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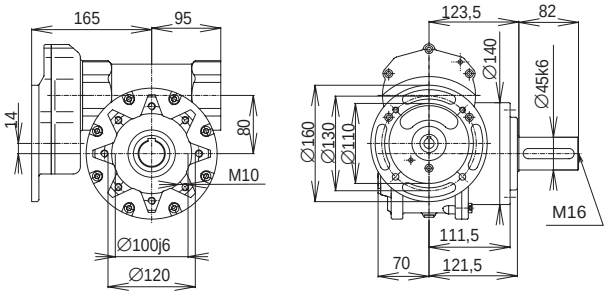
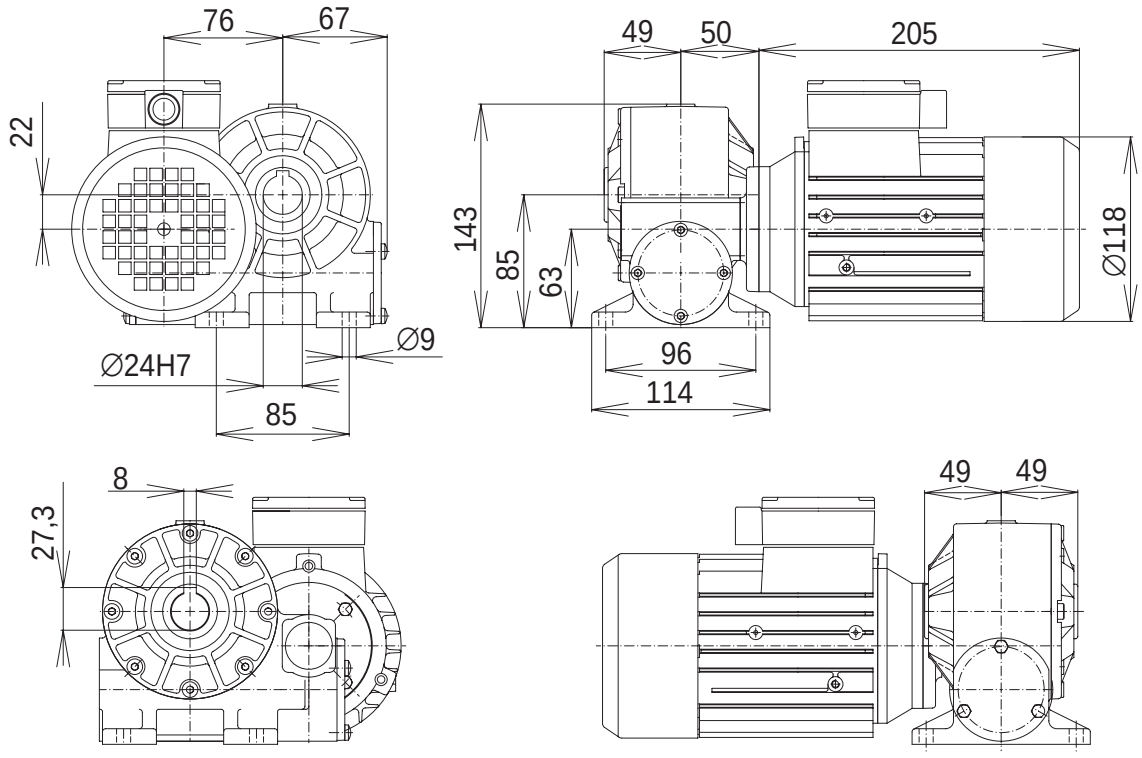


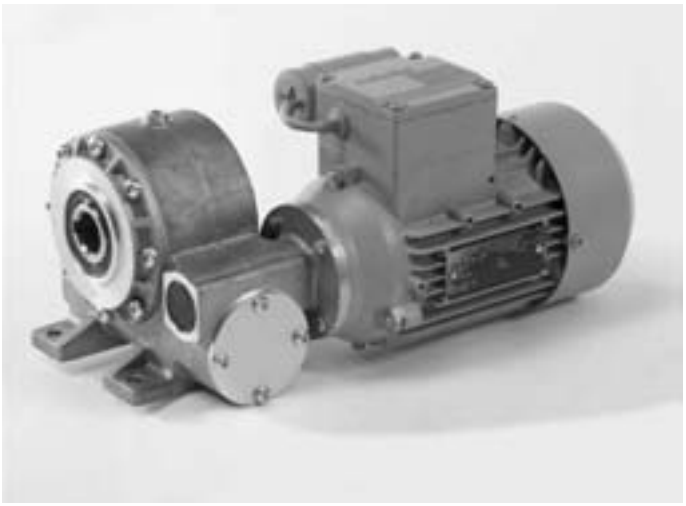
21. MRT 2850 DOUBLE WORM GEAR UNIT



Description: Compact gear unit with double worm gear in one housing with cast on feet and hollow output shaft.

Basic Data:

Gear ratio: i = 225:1 – 4000:1
Torque: M_{k2} = 100 Nm
Motor position on the right or left
Output flange FO (without centring), one FT flange can be fitted

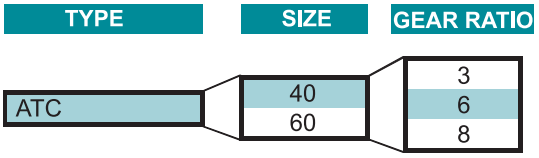


Standard Execution:

Motor position according to outline drawing
Gear ratio: 900:1 (30×30:1)
Motor: single-phase with increased starting torque
1LF7063 – 4AJ19–ZN52
0,18 kW, 230V / 50Hz, 1350 rpm
M_z = 1,59 Nm
M_{max} = 2,55 Nm
Starting torque ratio M_z / M_n = 1,25

22. ATC – MAT GEARBOXES WITH A STEP ON THE INPUT SHAFT

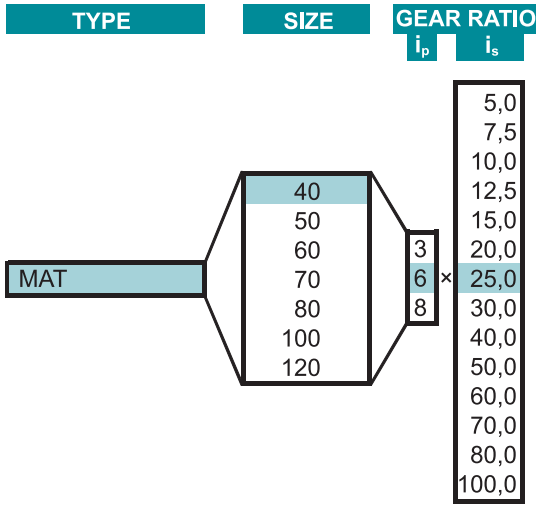
Type Identification Diagram:



Example: ATC 40 6

ATC 40 spur gearbox, gear ratio 6:1

Type Identification Diagram (combination of ATC spur gearbox with MRT worm-gear



Example: MAT 40 6 × 25

Table 22.1 **Rated Data**

Type ATC	i	n_1 – 1400 [rpm] (4p-50 Hz)		
		n_2 [rpm]	P_1 [kW]	M_{2max} [Nm]
40	3.43	408	0.72	16.6
	6.23	225	0.44	18.5
60	3.47	403	2.50	58.3
	6.60	212	1.25	55.4
	7.93	177	0.91	48.6

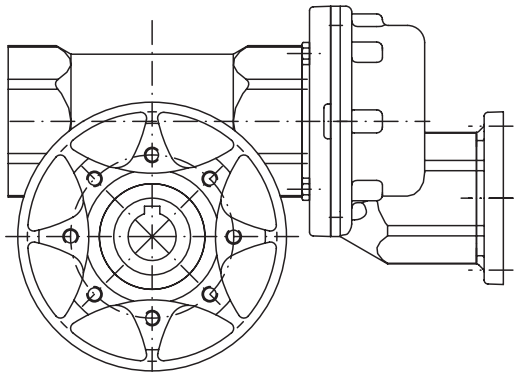
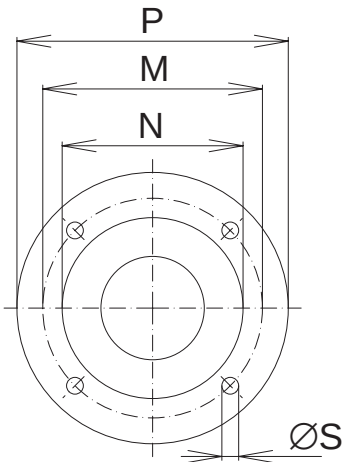
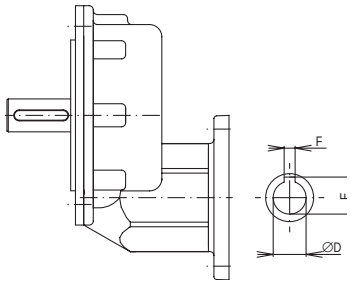


Table 22.2 **Gear Units Input Flanges Fitted to ATC Gear Units**



Type		Flange Identif.	Dimension			
ATC 40	ATC 60		M	N H7	P	S
•		F 75	75	60	90	5.5
•		F 85	85	70	105	6.6
•	•	F 100	100	80	120	6.6
	•	F 115	115	95	140	10.0
•	•	F 130	130	110	160	10.0

Table 22.3 **Combination of Electric Motors and ATC gear units**



Type		Size of IEC motor	Dimension		
ATC 40	ATC 60		ØD E7	E P9	F
•		71	14	5	16.3
•	•	80	19	6	21.8
	•	90	24	8	27.3

Table 22.4 **Rated Data of MAT**

			i [–]	i_p [–]	i_c [–]	Mk_3 [Nm]	n_3 [rpm]	P_1 [kW]		i [–]	i_p [–]	i_c [–]	Mk_3 [Nm]	n_3 [rpm]	P_1 [kW]		i [–]	i_p [–]	i_c [–]	Mk_3 [Nm]	n_3 [rpm]	P_1 [kW]
MAT40=MRT40A+ATC																						
MAT 40	MRT40A	ATC40	5	3.43	17.1	48	82.8	0.608	ATC40	5	6.23	31.2	49	45.6	0.386							
	MRT40A	ATC40	7.5	3.43	25.7	49	55.2	0.449	ATC40	7.5	6.23	46.7	50	30.4	0.297							
	MRT40A	ATC40	10	3.43	34.3	55	41.4	0.401	ATC40	10	6.23	62.3	56	22.8	0.270							
	MRT40A	ATC40	12.5	3.43	42.9	53	33.1	0.334	ATC40	12.5	6.23	77.9	54	18.2	0.233							
	MRT40A	ATC40	15	3.43	51.4	54	27.6	0.302	ATC40	15	6.23	93.5	55	15.2	0.215							
	MRT40A	ATC40	20	3.43	68.6	53	20.7	0.257	ATC40	20	6.23	124.6	54	11.4	0.190							
	MRT40A	ATC40	25	3.43	85.7	48	16.6	0.218	ATC40	25	6.23	155.8	49	9.1	0.168							
	MRT40A	ATC40	30	3.43	102.9	58	13.8	0.228	ATC40	30	6.23	186.9	59	7.6	0.173							
	MRT40A	ATC40	40	3.43	137.1	55	10.4	0.201	ATC40	40	6.23	249.2	56	5.7	0.159							
	MRT40A	ATC40	50	3.43	171.4	53	8.3	0.182	ATC40	50	6.23	311.5	54	4.6	0.148							
	MRT40A	ATC40	60	3.43	205.7	48	6.9	0.169	ATC40	60	6.23	373.8	49	3.8	0.140							
	MRT40A	ATC40	70	3.43	240.0	46	5.9	0.163	ATC40	70	6.23	436.2	46	3.3	0.137							
	MRT40A	ATC40	80	3.43	274.3	41	5.2	0.156	ATC40	80	6.23	498.5	41	2.8	0.133							
	MRT40A	ATC40	100	3.43	342.9	37	4.1	0.143	ATC40	100	6.23	623.1	38	2.3	0.126							
MAT50=MRT50A+ATC																						
MAT 50	MRT50A	ATC40	5	3.47	17.4	88	81.8	0.983	ATC40	5	6.60	33.0	107	43.0	0.668	ATC60	5	7.93	39.7	134	35.8	0.690
	MRT50A	ATC40	7.5	3.43	25.7	90	55.2	0.734	ATC40	7.5	6.60	46.7	110	30.4	0.527	ATC60	7.5	7.93	59.5	137	23.9	0.520
	MRT50A	ATC40	10	3.43	34.3	95	41.4	0.602	ATC40	10	6.23	62.3	116	22.8	0.438	ATC60	10	7.93	80.8	145	17.6	0.426
	MRT50A	ATC40	12.5	3.43	42.9	91	33.1	0.492	ATC40	12.5	6.23	77.9	111	18.2	0.364							
	MRT50A	ATC40	15	3.43	51.4	102	27.6	0.470	ATC40	15	6.23	93.5	124	15.2	0.350							
	MRT50A	ATC40	20	3.43	68.6	100	20.7	0.378	ATC40	20	6.23	124.6	122	11.4	0.288							
	MRT50A	ATC40	25	3.43	85.7	85	16.6	0.304	ATC40	25	6.23	155.8	104	9.1	0.238							
	MRT50A	ATC40	30	3.43	102.9	107	13.8	0.324	ATC40	30	6.23	186.9	130	7.6	0.252							
	MRT50A	ATC40	40	3.43	137.1	103	10.4	0.268	ATC40	40	6.23	249.2	126	5.7	0.214							
	MRT50A	ATC40	50	3.43	171.4	92	8.3	0.235	ATC40	50	6.23	311.5	113	4.6	0.192							
	MRT50A	ATC40	60	3.43	205.7	90	6.9	0.219	ATC40	60	6.23	373.8	110	3.8	0.181							
	MRT50A	ATC40	70	3.43	240.0	85	5.9	0.201	ATC40	70	6.23	436.2	104	3.3	0.169							
	MRT50A	ATC40	80	3.43	274.3	80	5.2	0.187	ATC40	80	6.23	498.5	98	2.8	0.159							
	MRT50A	ATC40	100	3.43	342.9	77	4.1	0.175	ATC40	100	6.23	623.1	94	2.3	0.152							
MAT60=MRT60A+ATC																						
MAT 60	MRT60A	ATC60	5	3.47	17.4	148	81.8	1.585	ATC60	5	6.60	33.0	180	43.0	1.054	ATC60	5	7.93	39.7	225	35.8	1.092
	MRT60A	ATC60	7.5	3.47	26.0	161	54.6	1.192	ATC60	7.5	6.60	49.5	196	28.7	0.802	ATC60	7.5	7.93	59.5	245	23.9	0.829
	MRT60A	ATC60	10	3.47	34.7	150	40.9	0.865	ATC60	10	6.60	66.0	183	21.5	0.592	ATC60	10	7.93	79.3	229	17.9	0.612
	MRT60A	ATC40	12.5	3.43	42.9	148	33.1	0.724	ATC60	12.5	6.60	77.9	180	18.2	0.520	ATC60	12.5	7.93	99.2	225	14.3	0.513
	MRT60A	ATC40	15	3.43	51.4	161	27.6	0.674	ATC60	15	6.60	93.5	196	15.2	0.487	ATC60	15	7.93	121.2	245	11.7	0.473
	MRT60A	ATC40	20	3.43	68.6	150	20.7	0.517	ATC40	20	6.23	124.6	183	11.4	0.381	ATC60	20	7.93	161.7	229	8.8	0.371
	MRT60A	ATC40	25	3.43	85.7	169	16.6	0.496	ATC40	25	6.23	155.8	206	9.1	0.367							
	MRT60A	ATC40	30	3.43	102.9	186	13.8	0.478	ATC40	30	6.23	186.9	227	7.6	0.355							
	MRT60A	ATC40	40	3.43	137.1	175	10.4	0.387	ATC40	40	6.23	249.2	214	5.7	0.294							
	MRT60A	ATC40	50	3.43	171.4	163	8.3	0.338	ATC40	50	6.23	311.5	199	4.6	0.261							
	MRT60A	ATC40	60	3.43	205.7	152	6.9	0.292	ATC40	60	6.23	373.8	186	3.8	0.230							
	MRT60A	ATC40	70	3.43	240.0	146	5.9	0.262	ATC40	70	6.23	436.2	179	3.3	0.210							
	MRT60A	ATC40	80	3.43	274.3	139	5.2	0.237	ATC40	80	6.23	498.5	170	2.8	0.194							
	MRT60A	ATC40	100	3.43	342.9	128	4.1	0.211	ATC40	100	6.23	623.1	157	2.3	0.176							
MAT70=MRT70A+ATC																						
MAT 70	MRT70A	ATC60	5	3.47	17.4	197	81.8	2.056	ATC60	5	6.60	33.0	240	43.0	1.356	ATC60	5	7.93	39.7	300	35.8	1.406
	MRT70A	ATC60	7.5	3.47	26.0	205	54.6	1.476	ATC60	7.5	6.60	49.5	250	28.7	0.984	ATC60	7.5	7.93	59.5	313	23.9	1.019
	MRT70A	ATC60	10	3.47	34.7	221	40.9	1.199	ATC60	10	6.60	66.0	269	21.5	0.806	ATC60	10	7.93	79.3	337	17.9	0.835
	MRT70A	ATC60	12.5	3.47	43.4	239	32.7	1.073	ATC60	12.5	6.60	82.5	291	17.2	0.726	ATC60	12.5	7.93	99.2	364	14.3	0.750
	MRT70A	ATC60	15	3.47	52.1	244	27.3	0.947	ATC60	15	6.60	99.0	297	14.3	0.645	ATC60	15	7.93	119.0	371	11.9	0.666
	MRT70A	ATC40	20	3.43	68.6	228	20.7	0.717	ATC60	20	6.60	124.6	278	11.4	0.516	ATC60	20	7.93	158.7	348	8.9	0.508
	MRT70A	ATC40	25	3.43	85.7	217	16.6	0.589	ATC40	25	6.23	155.8	265	9.1	0.429	ATC60	25	7.93	202.1	331	7.0	0.418
	MRT70A	ATC40	30	3.43	102.9	259	13.8	0.618	ATC40	30	6.23	186.9	316	7.6	0.449	ATC60	30	7.93	242.5	395	5.9	0.436
	MRT70A	ATC40	40	3.43	137.1	238	10.4	0.477	ATC40	40	6.23	249.2	290	5.7	0.354							
	MRT70A	ATC40	50	3.43	171.4	241	8.3	0.420	ATC40	50	6.23	311.5	294	4.6	0.316							
	MRT70A	ATC40	60	3.43	205.7	222	6.9	0.374	ATC40	60	6.23	373.8	271	3.8	0.285							
	MRT70A	ATC40	70	3.43	240.0	204	5.9	0.339	ATC40	70	6.23	436.2	249	3.3	0.262							
	MRT70A	ATC40	80	3.43	274.3	175	5.2	0.298	ATC40	80	6.23	498.5	214	2.8	0.234							
	MRT70A	ATC40	100	3.43	342.9	172	4.1	0.276	ATC40	100	6.23	623.1	209	2.3	0.220							
MAT80=MRT80A+ATC																						
MAT 80	MRT80A	ATC60	5	3.47	17.4	254	81.8	2.573	ATC60	5	6.60	33.0	310	43.0	1.687	ATC60	5	7.93	39.7	388	35.8	1.751
	MRT80A	ATC60	7.5	3.47	26.0	262	54.6	1.815	ATC60	7.5	6.60	49.5	319	28.7	1.201	ATC60	7.5	7.93	59.5	399	23.9	1.245
	MRT80A	ATC60	10	3.47	34.7	254	40.9	1.366	ATC60	10	6.60	66.0	310	21.5	0.913	ATC60	10	7.93	79.3	388	17.9	0.946
	MRT80A	ATC60	12.5	3.47	43.4	295	32.7	1.302	ATC60	12.5	6.60	82.5	360	17.2	0.872	ATC60	12.5	7.93	99.2	450	14.3	0.903
	MRT80A	ATC60	15	3.47	52.1	335	27.3	1.276	ATC60	15	6.60	99.0	408	14.3	0.856	ATC60	15	7.93	119.0	511	11.9	0.886
	MRT80A	ATC60	20	3.47	69.4	317	20.5	0.936	ATC60	20	6.60	132.0	386	10.8	0.638	ATC60	20	7.93	158.7	483	8.9	0.659
	MRT80A	ATC60	25	3.47	86.8	301	16.4	0.760	ATC60	25	6.60	165.0	367	8.6	0.525	ATC60	25	7.93	198.3	459	7.2	0.542
	MRT80A	ATC60	30	3.47	104.1	383	13.6	0.874	ATC60	30	6.60	198.0	467	7.2	0.598	ATC60	30	7.93	238.0	584	6.0	0.617
	MRT80A	ATC40	40	3.43	137.1	362	10.4	0.673	ATC60	40	6.60	249.2	442	5.7	0.486	ATC60	40	7.93	323.3	553	4.4	0.472
	MRT80A	ATC40	50	3.43	171.4	334	8.3	0.535	ATC40	50	6.23	311.5	407	4.6	0.393	ATC60	50	7.93	404.2	509	3.5	0.383
	MRT80A	ATC40	60	3.43	205.7	299	6.9	0.461	ATC40	60	6.23	373.8	365	3.8	0.344							
	MRT80A	ATC40	70	3.43	240.0	300	5.9	0.438	ATC40	70	6.23	436.2	366	3.3	0.328							
	MRT80A	ATC40	80	3.43	274.3	287	5.2	0.399	ATC40	80	6.23	498.5	350	2.8	0.302							
	MRT80A	ATC40	100	3.43	342.9	253	4.1	0.320	ATC40	100	6.23	623.1	309	2.3	0.249							

Table 22.4 **Rated Data of MAT**

			i [–]	i_p [–]	i_c [–]	Mk_3 [Nm]	n_3 [rpm]	P_1 [kW]		i [–]	i_p [–]	i_c [–]	Mk_3 [Nm]	n_3 [rpm]	P_1 [kW]		i [–]	i_p [–]	i_c [–]	Mk_3 [Nm]	n_3 [rpm]	P_1 [kW]
	MAT100=MRT100A+ATC																					
MAT 100	MRT100A	ATC60	7.5	3.47	26.0	428	55.2	2.971	ATC60	7.5	6.60	49.5	523	28.7	1.921	ATC60	7.5	7.93	59.5	653	23.9	1.994
	MRT100A	ATC60	10	3.47	34.7	469	41.4	2.513	ATC60	10	6.60	66.0	572	21.5	1.631	ATC60	10	7.93	79.3	716	17.9	1.692
	MRT100A	ATC60	12.5	3.47	43.4	589	33.1	2.497	ATC60	12.5	6.60	82.5	719	17.2	1.620	ATC60	12.5	7.93	99.2	899	14.3	1.681
	MRT100A	ATC60	15	3.47	52.1	623	27.6	2.260	ATC60	15	6.60	99.0	760	14.3	1.470	ATC60	15	7.93	119.0	950	11.9	1.525
	MRT100A	ATC60	20	3.47	69.4	550	20.7	1.600	ATC60	20	6.60	132.0	671	10.8	1.052	ATC60	20	7.93	158.7	838	8.9	1.090
	MRT100A	ATC60	25	3.47	86.8	536	16.6	1.316	ATC60	25	6.60	165.0	654	8.6	0.872	ATC60	25	7.93	198.3	818	7.2	0.903
	MRT100A	ATC60	30	3.47	104.1	671	13.8	1.416	ATC60	30	6.60	198.0	818	7.2	0.935	ATC60	30	7.93	238.0	1023	6.0	0.969
	MRT100A	ATC60	40	3.47	138.8	643	10.4	1.113	ATC60	40	6.60	264.0	785	5.4	0.743	ATC60	40	7.93	317.3	981	4.5	0.769
	MRT100A	ATC60	50	3.47	173.5	617	8.3	0.924	ATC60	50	6.60	330.0	752	4.3	0.623	ATC60	50	7.93	396.7	941	3.6	0.644
	MRT100A	ATC60	60	3.47	208.2	589	6.9	0.808	ATC60	60	6.60	396.0	719	3.6	0.550	ATC60	60	7.93	476.0	899	3.0	0.568
	MRT100A	ATC60	80	3.47	277.6	509	5.2	0.567	ATC60	80	6.60	528.0	621	2.7	0.398	ATC60	80	7.93	634.7	776	2.2	0.410
	MRT100A	ATC60	100	3.47	347.0	456	4.1	0.516	ATC60	100	6.60	660.0	556	2.2	0.365	ATC60	100	7.93	793.3	695	1.8	0.376
	MAT120=MRT120A+ATC																					
MAT 120	MRT120A	ATC60	7.5	3.47	26.0	724	54.6	4.785	ATC60	7.5	6.60	49.5	883	28.7	3.107	ATC60	7.5	7.93	59.5	1103	23.9	3.226
	MRT120A	ATC60	10	3.47	34.7	858	40.9	4.313	ATC60	10	6.60	66.0	1047	21.5	2.804	ATC60	10	7.93	79.3	1308	17.9	2.911
	MRT120A	ATC60	12.5	3.47	43.4	925	32.7	3.775	ATC60	12.5	6.60	82.5	112 9	17.2	2.459	ATC60	12.5	7.93	99.2	1411	14.3	2.553
	MRT120A	ATC60	15	3.47	52.1	965	27.3	3.367	ATC60	15	6.60	99.0	1177	14.3	2.197	ATC60	15	7.93	119.0	1471	11.9	2.280
	MRT120A	ATC60	20	3.47	69.4	845	20.5	2.349	ATC60	20	6.60	132.0	1031	10.8	1.544	ATC60	20	7.93	158.7	1288	8.9	1.601
	MRT120A	ATC60	25	3.47	86.8	845	16.4	1.921	ATC60	25	6.60	165.0	1031	8.6	1.270	ATC60	25	7.93	198.3	1288	7.2	1.316
	MRT120A	ATC60	30	3.47	104.1	1086	13.6	2.149	ATC60	30	6.60	198.0	1325	7.2	1.416	ATC60	30	7.93	238.0	1656	6.0	1.468
	MRT120A	ATC60	40	3.47	138.8	1019	10.2	1.661	ATC60	40	6.60	264.0	1243	5.4	1.103	ATC60	40	7.93	317.3	1554	4.5	1.143
	MRT120A	ATC60	50	3.47	173.5	938	8.2	1.284	ATC60	50	6.60	330.0	1145	4.3	0.861	ATC60	50	7.93	396.7	1431	3.6	0.891
	MRT120A	ATC60	60	3.47	208.2	912	6.8	1.164	ATC60	60	6.60	396.0	1113	3.6	0.784	ATC60	60	7.93	476.0	1391	3.0	0.811
	MRT120A	ATC60	80	3.47	277.6	858	5.1	0.819	ATC60	80	6.60	528.0	1047	2.7	0.562	ATC60	80	7.93	634.7	1308	2.2	0.581
	MRT120A	ATC60	100	3.47	347.0	724	4.1	0.642	ATC60	100	6.60	660.0	883	2.2	0.449	ATC60	100	7.93	793.3	1103	1.8	0.463

Table 22.5 **Combination of Gear Units with Electric Motors**

	i_p	i_s=5	i_s=7,5	i_s=10	i_s=12,5	i_s=15	i_s=20	i_s=25	i_s=30	i_s=40	i_s=50	i_s=60	i_s=70	i_s=80	i_s=100
MAT 40	3,43 (3,47)	80-4p	71-4p	71-4p	71-4p	71-4p	71-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p
MAT 50		80-4p	80-4p	80-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	63-4p	63-4p	63-4p	63-4p	63-4p
MAT 60		90-4p	90-4p	80-4p	80-4p	80-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	63-4p	63-4p
MAT 70		90-4p	90-4p	90-4p	90-4p	80-4p	80-4p	80-4p	80-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p
MAT 80		90-4p	90-4p	90-4p	90-4p	90-4p	80-4p	80-4p	80-4p	80-4p	80-4p	71-4p	71-4p	71-4p	71-4p
MAT 100			90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	80-4p	80-4p		80-4p	80-4p
MAT 120			90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p		80-4p	80-4p

	i_p	i_s=5	i_s=7,5	i_s=10	i_s=12,5	i_s=15	i_s=20	i_s=25	i_s=30	i_s=40	i_s=50	i_s=60	i_s=70	i_s=80	i_s=100
MAT 40	6,23 (6,60)	71-4p	71-4p	71-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p
MAT 50		80-4p	80-4p	71-4p	71-4p	71-4p	71-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p	63-4p
MAT 60		80-4p	80-4p	80-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	63-4p	63-4p	63-4p	63-4p
MAT 70		90-4p	80-4p	80-4p	80-4p	80-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p	63-4p	63-4p
MAT 80		90-4p	90-4p	80-4p	80-4p	80-4p	80-4p	80-4p	80-4p	71-4p	71-4p	71-4p	71-4p	71-4p	71-4p
MAT 100			90-4p	90-4p	90-4p	90-4p	90-4p	80-4p	80-4p	80-4p	80-4p	80-4p		71-4p	71-4p
MAT 120			90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	80-4p	80-4p		80-4p	80-4p

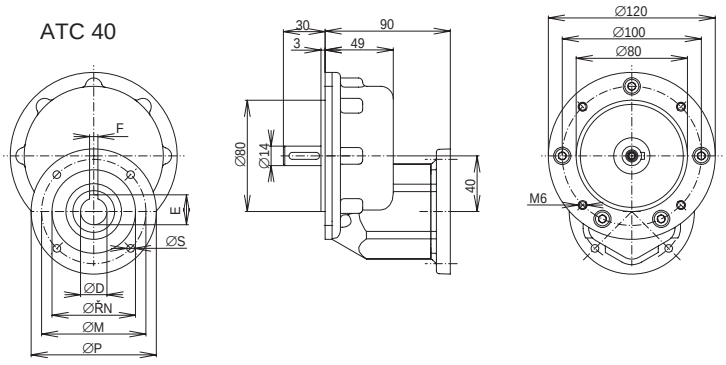
	i_p	i_s=5	i_s=7,5	i_s=10	i_s=12,5	i_s=15	i_s=20	i_s=25	i_s=30	i_s=40	i_s=50	i_s=60	i_s=70	i_s=80	i_s=100
MAT 50	7,93	80-4p	71-4p	71-4p											
MAT 60		80-4p	80-4p	80-4p	71-4p	71-4p	71-4p								
MAT 70		90-4p	90-4p	80-4p	80-4p	80-4p	71-4p	71-4p	71-4p						
MAT 80		90-4p	90-4p	80-4p	80-4p	80-4p	80-4p	80-4p	80-4p	71-4p	71-4p				
MAT 100			90-4p	90-4p	90-4p	90-4p	90-4p	80-4p	80-4p	80-4p	80-4p	80-4p		71-4p	71-4p
MAT 120			90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	90-4p	80-4p	80-4p		80-4p	80-4p

Legend:

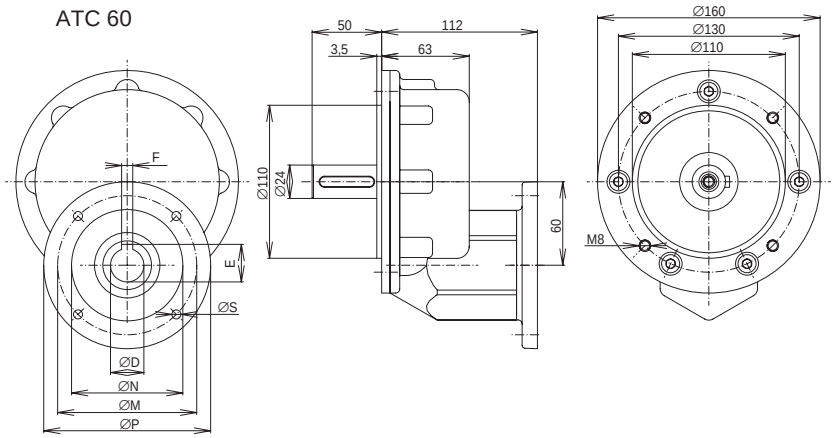
0,06kW	0,09kW	0,12kW	0,18kW	0,25kW	0,37kW	0,55kW	0,75kW	1,1kW	1,5kW							
56-4p	56-4p	63-4p	63-4p	71-4p	71-4p	80-4p	80-4p	90-4p	90-4p							

Table 22.6 **Dimension**

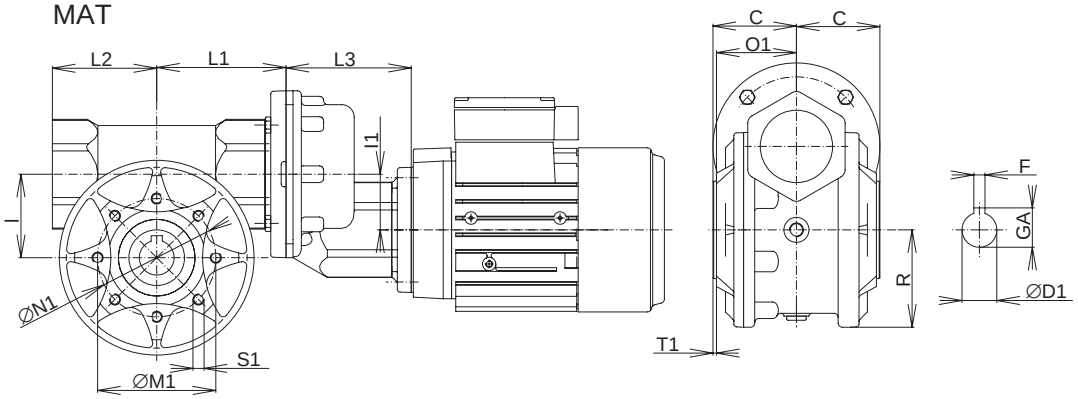
ATC 40



ATC 60



MAT



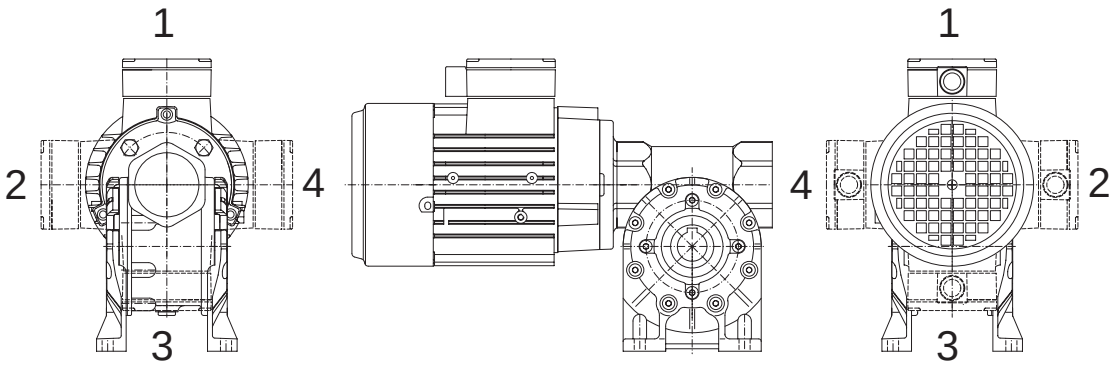
Size	MRT	ATC	C	D1H7	F	GA	I	I2	R	L1	L2	L3	M1	N1	O1	S1	T1
MAT 40	40A	40	41.0	19	6	21.8	40	40	48	65	57	90	65	50	38.5	M6×12	2.5
MAT 50	50A	40	49.0	24	8	27.3	50	40	56	75	65	90	75	60	46.5	M6×12	2.5
MAT 50	50A	60	49.0	24	8	27.3	50	60	56	75	65	112	75	60	46.5	M6×12	2.5
MAT 60	60A	40	60.0	25	8	28.3	60	40	70	93	75	90	85	70	57.5	M6×12	2.5
MAT 60	60A	60	60.0	25	8	28.3	60	60	70	93	75	112	85	70	57.5	M6×12	2.5
MAT 70	70A	40	60.5	28	8	31.3	70	40	76	101	81	90	100	80	57.0	M8×16	3.5
MAT 70	70A	60	60.5	28	8	31.3	70	60	76	101	81	112	100	80	57.0	M8×16	3.5
MAT 80	80A	40	70.0	35	10	38.3	80	40	90	110	95	90	130	110	66.5	M10×16	3.5
MAT 80	80A	60	70.0	35	10	38.3	80	60	90	110	95	112	130	110	66.5	M10×16	3.5
MAT 100	100A	60	76.0	40	12	43.3	100	60	107	130	117	112	130	110	72.5	M10×20	5.0
MAT 120	120A	60	86.0	45	14	48.8	120	60	128	152	138	112	165	130	80.5	M12×25	5.0

23. ELECTRIC MOTORS

This paragraph provides basic technical and dimensional data of three-phase squirrel cage asynchronous electric motors with frame sizes 56 to 160 supplied by Siemens. Any further details and/or technical information can be obtained from the manufacturers.

Mounting Positions of Electric Motors:

• Terminal box on top as standard – pos. 1.
If different terminal box position is required please specify in your order as special requirement.



• Technical Data:

Mounting:

– flange mounted IM 3041 (IM B5), IM 3641 FT** (IM B14 FT**)
– foot & flange mounted IM 2081 (IM B35)
– all mounting to IEC 34-7 code I/II

Mounting dimension:

– in compliance with IEC 72 / DIN 42673

Protection:

– IP 55

Table 23.1 **2-pole, Synchronous Speed 3000 rpm**

Size		Output [kW]	speed [rpm]	Rated current A 400 V	Rated torque [Nm]	Power factor cos φ	Efficiency η [%]	Ratio		Inertia [kg×m²]	Weight [kg]
								I_k/I_n	M_z/M_n		
56	2s	0.09	2830	0.26	0.30	0.81	63.0	3.7	2.0	0.00015	3.0
56	2	0.12	2800	0.32	0.41	0.83	65.0	3.7	2.1	0.00015	3.0
63	2s	0.18	2820	0.51	0.61	0.82	63.0	3.7	2.0	0.00018	3.5
63	2	0.25	2830	0.68	0.84	0.82	65.0	4.0	2.0	0.00023	4.1
71	2s	0.37	2740	1.00	1.30	0.82	66.0	3.5	2.3	0.00035	5.0
71	2	0.55	2800	1.36	1.90	0.82	71.0	4.3	2.5	0.00045	6.6
80	2s	0.75	2855	1.73	2.50	0.86	73.0	5.6	2.3	0.00085	8.2
80	2	1.10	2845	2.40	3.70	0.87	77.0	6.1	2.6	0.00110	9.9
90S	2	1.50	2860	3.25	5.00	0.85	79.0	5.5	2.4	0.00150	12.9
90L	2	2.20	2880	4.55	7.30	0.85	82.0	6.3	2.8	0.00200	15.7
100L	2	3.00	2890	6.10	9.90	0.85	84.0	6.8	2.8	0.00380	21.5
112M	2	4.00	2905	7.80	13.10	0.86	86.0	7.2	2.6	0.00550	29.0
132S	2	5.50	2925	10.30	180.00	0.89	86.5	5.9	2.0	0.01600	40.5
132S	2	7.50	2930	13.80	24.40	0.89	88.0	6.9	2.3	0.02100	48.5
160M	2	11.00	2940	20.00	36.00	0.88	89.5	6.5	2.1	0.03400	68.5
160M	2	15.00	2940	26.50	49.00	0.90	90.0	6.6	2.2	0.04000	76.5
160L	2	18.50	2940	32.50	60.00	0.91	91.0	7.0	2.4	0.05200	87.0

Table 23.2 **4-pole, Synchronous Speed 1500 rpm**

Size		Output [kW]	Speed [rpm]	Rated current A 400 V	Rated torque [Nm]	Power factor cos φ	Efficiency η [%]	Ratio		Inertia [kg×m²]	Weight [kg]
								I_k/I_n	M_z/M_n		
56	4s	0.06	1350	0.20	0.42	0.77	56.0	2.6	1.9	0.00027	3.0
56	4	0.09	1350	0.29	0.63	0.77	58.0	2.6	1.9	0.00027	3.0
63	4s	0.12	1350	0.42	0.84	0.75	55.0	2.8	1.9	0.00030	3.5
63	4	0.18	1350	0.56	1.30	0.77	60.0	3.0	1.9	0.00040	4.1
71	4s	0.25	1350	0.76	1.80	0.79	60.0	3.0	1.9	0.00060	4.8
71	4	0.37	1370	1.03	2.50	0.80	65.0	3.3	1.9	0.00080	6.0
80	4s	0.55	1395	1.45	3.70	0.82	67.0	3.9	2.2	0.00150	8.0
80	4	0.75	1395	1.86	5.10	0.81	72.0	4.2	2.3	0.00180	9.4
90S	4	1.10	1415	2.55	7.40	0.81	77.0	4.6	2.3	0.00280	12.3
90L	4	1.50	1420	3.40	10.10	0.81	79.0	5.3	2.4	0.00350	15.6
100L	4s	2.20	1420	4.70	14.80	0.82	82.0	5.6	2.5	0.00480	21.5
100L	4	3.00	1420	6.40	20.20	0.82	83.0	5.6	2.7	0.00580	24.5
112M	4	4.00	1440	8.20	26.50	0.83	85.0	6.0	2.7	0.01100	31.0
132S	4	5.50	1455	11.40	36.10	0.81	86.0	6.3	2.5	0.01800	42.5
132M	4	7.50	1455	15.20	49.20	0.82	87.0	6.7	2.7	0.02400	49.0
160M	4	11.00	1460	21.50	72.00	0.84	88.5	6.2	2.2	0.04000	68.0
160L	4	15.00	1460	28.50	98.10	0.84	90.0	6.5	2.6	0.05200	93.5

Table 23.3 **6-pole, Synchronous Speed 1000 rpm**

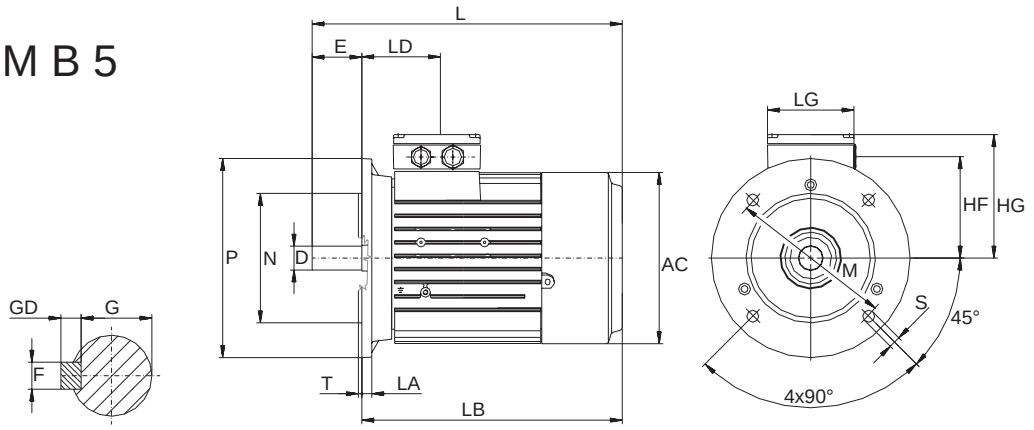
Size		Output [kW]	Speed [rpm]	Rated current A 400 V	Rated torque [Nm]	Power factor cos φ	Efficiency η [%]	Ratio		Inertia [kg×m²]	Weight [kg]
								I_k/I_n	M_z/M_n		
63	6	0.09	870	0.47	1.0	0.70	40.0	2.0	1.8	0.0004	4.1
71	6s	0.18	835	0.62	2.0	0.75	56.0	2.3	2.1	0.0006	6.3
71	6	0.25	850	0.78	2.8	0.76	61.0	2.7	2.2	0.0009	6.3
80	6s	0.37	920	1.20	3.8	0.72	62.0	3.1	1.9	0.0015	7.5
80	6	0.55	910	1.60	5.8	0.74	67.0	3.4	2.1	0.0018	9.4
90S	6	0.75	915	2.10	7.8	0.76	69.0	3.7	2.2	0.0028	12.5
90L	6	1.10	915	2.90	11.5	0.77	72.0	3.8	2.3	0.0035	15.7
100L	6	1.50	925	3.90	15.0	0.75	74.0	4.2	2.2	0.0063	24.0
112M	6	2.20	940	5.20	22.0	0.78	78.0	4.6	2.2	0.0110	27.0
132S	6	3.00	950	7.20	30.0	0.76	79.0	4.2	1.9	0.0150	41.0
132M	6	4.00	950	9.40	40.0	0.76	80.5	4.5	2.1	0.0190	46.0
132M	6	5.50	950	12.80	55.0	0.76	83.0	5.0	2.3	0.0250	54.0
160M	6	7.50	960	17.00	75.0	0.74	86.0	4.6	2.1	0.0410	76.0
160L	6	11.00	960	24.50	109.0	0.74	87.5	4.8	2.3	0.0490	102.0

Table 23 4 **8-pole, Synchronous Speed 750 rpm**

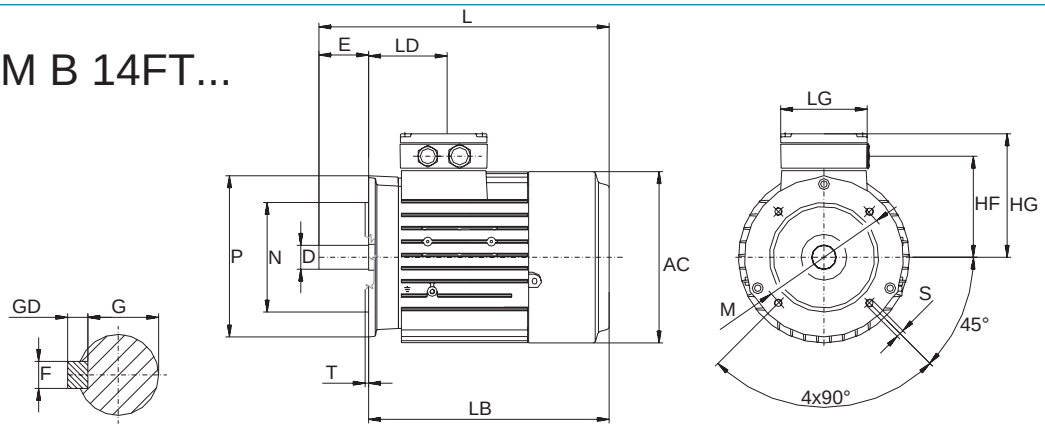
Size		Output [kW]	Speed [rpm]	Rated current A 400 V	Rated torque [Nm]	Power factor cos φ	Efficiency η [%]	Ratio		Inertia [kg×m²]	Weight [kg]
								I_k/I_n	M_z/M_n		
71	8s	0.09	630	0.36	1.4	0.68	53.0	2.2	1.9	0.0009	6.3
71	8	0.12	645	0.51	1.8	0.64	53.0	2.2	2.2	0.0009	6.3
80	8s	0.18	675	0.75	2.5	0.68	51.0	2.3	1.7	0.0015	7.5
80	8	0.25	680	1.03	3.5	0.64	58.0	2.6	2.0	0.0018	9.4
90S	8	0.37	675	1.13	5.2	0.75	63.0	2.9	1.6	0.0025	10.5
90L	8	0.55	675	1.58	7.8	0.76	66.0	3.0	1.7	0.0035	13.2
100L	8	0.75	680	2.15	10.5	0.76	66.0	3.0	1.7	0.0053	20.0
100L	8	1.10	680	2.90	15.4	0.76	72.0	3.4	1.9	0.0070	22.0
112M	8	1.50	705	3.90	20.0	0.76	74.0	3.7	1.8	0.0130	24.0
132S	8	2.20	695	5.70	30.0	0.74	75.0	3.9	1.9	0.0140	41.0
132M	8	3.00	700	7.60	40.0	0.74	77.0	4.1	2.1	0.0190	49.0
160M	8s	4.00	715	10.00	53.0	0.72	80.0	4.5	2.2	0.0350	61.0
160M	8	5.50	710	13.00	73.0	0.73	83.5	4.7	2.3	0.0430	70.0
160L	8	7.50	715	17.70	100.0	0.72	85.0	5.3	2.7	0.0620	91.0

Table 23.5 **Dimensions of Motors**

IM B 5



IM B 14FT...



Size	Flanged motors – dimensions in mm												
	AC	HF	HG	L	LB	LD	LG	LK	Dk6	E	F	G	GD
56	116.0	78.5	101	177.0	157.0	69.5	75	32	9	20	3	7.2	3
63	118.0	78.5	101	202.0	179.0	69.5	75	32	11	23	4	8.5	4
71	139.0	88.5	111	240.0	210.0	63.5	75	32	14	30	5	11.0	5
80	156.5	95.5	120	272.5	232.5	63.5	75	32	19	40	6	15.5	6
90	173.6	105.5	128	331.0	281.0	79.0	75	32	24	50	8	20.0	7
100	196.0	78.0	129	327.5	312.5	102.0	120	42	28	60	8	24.0	7
112	219.5	91.0	142	393.0	333.0	102.0	120	42	28	60	8	24.0	7
132S	259.0	107.0	164	454.0	374.0	128.5	140	42	38	80	10	33.0	8
132M	259.0	107.0	164	454.0	374.0	128.5	140	42	38	80	10	33.0	8
160M	314.0	127.0	191	588.0	478.0	160.5	165	54	42	110	12	37.0	8
160L	314.0	127.0	191	588.0	478.0	160.5	165	54	42	110	12	37.0	8

Size	Flanged motors – dimensions in mm																	
	Mounting IM B5 flange							Mounting IM B 14FT.. small flange						Mounting IM B 14FT.. bigger flange					
		M	Nj6	P	S	T	LA		M	Nj6	P	S	T		M	Nj6	P	S	T
56	FF100	100	80	120	7.0	3.0	8	FT65	65	50	80	M5×16	2.5	FT85	85	70	105	M6×16	2.5
63	FF115	115	95	140	10.0	3.0	8	FT75	75	60	90	M5×14	2.5	FT100	100	80	120	M6×16	3.0
71	FF130	130	110	160	10.0	3.5	9	FT85	85	70	105	M6×16	2.5	FT115	115	95	140	M8×16	3.0
80	FF165	165	130	200	12.0	3.5	10	FT100	100	80	120	M6×16	3.0	FT130	130	110	160	M8×16	3.5
90	FF165	165	130	200	12.0	3.5	10	FT115	115	95	140	M8×21	3.0	FT130	130	110	160	M8×22	3.5
100	FF215	215	180	250	14.5	4.0	11	FT130	130	110	160	M8×20	3.5	FT165	160	130	200	M10×20	3.5
112	FF215	215	180	250	14.5	4.0	11	FT130	130	110	160	M8×20	3.5	FT165	160	130	200	M10×20	3.5
132S	FF265	265	230	300	14.5	4.0	12	FT165	165	130	200	M10×24	3.5						
132M	FF265	265	230	300	14.5	4.0	12	FT165	165	130	200	M10×24	3.5						
160M	FF300	300	250	350	18.5	5.0	13												
160L	FF300	300	250	350	18.5	5.0	13												

ORDER FORM

Customer

Company (name) .....
Street, No. .....
Town ..... Post code .....
P.O.B. .....
VAT. No. .....
Bank, Account No. and IBAN .....

Order No. .....
Tel./fax .....
Issued by (name) .....
Date .....
Signature (stamp) .....

Q-ty/pcs [10]

Required delivery [30. 5. 2005]

I. Gearbox

RT ☐
MRT with motor ☒
MRT without motor ☐
MRP with motor ☐
MRP without motor ☐
MAT ☐
RT [ ] × [ ] ☐
MRT [ ] × [ ] with motor ☐
MRT [ ] × [ ] without motor ☐

II. Size

RT	30A	40A	~~30A~~	60A	70A	80A	100A	120A	150A	180A
MRP		40A	50A	60A	70A	80A	100A	120A	150A	180A
MAT		40A	50A	60A	70A	80A	100A	120A		
RT/MRT [ ] × [ ]	30×30	30×50	30×50	40×50	40×60	40×70	50×70	50×80	70×100	80×100
	80×120	100×150	100×180							

III. Gear ratio

RT	5	7,5	10	12,5	15	20	25	~~30~~	40	50	60	70	80	100
MRP							75	90	120	150	180	210	240	300
MAT	15	22,5	30	37,5	45	60	75	90	120	150	180	210	240	300
	30	45	60	75	90	120	150	180	240	300	360	420	480	600
	40	60,5	80	100	120	160	200	240	320	400	480	560	640	800
RT/MRT [ ] × [ ]	150	225	300	375	450	600	750	900	1200	1500	1800	2100	2400	3000
	3500	4000	8000	10000										

IV. Execution and mounting

RT/MRT; MRP; MAT

RT/MRT [ ] × [ ]

						Version			Pos.	Version		Pos.	Vers.	Pos.
~~A/B3~~	B/B3	V/B3	FF-R-B5/1	FF-L-B5/1	FF-RL-1	AAL	ABL	AVL	B3	VFLR	AFL	B5/1	APL	1
A/B6	B/B6	V/B6	FF-R-B5/2	FF-L-B5/2	FF-RL-2	AAR	ABR	AVR	B6	VFLL	AFR	B5/2	APR	2
A/B7	B/B7	V/B7	FF-R-B5/3	FF-R-B5/3	FF-RL-3	BAL	BBL	BVL	B7	VFRL	BFL	B5/3	BPL	3
A/B8	B/B8	V/B8	FF-R-B5/4	FF-L-B5/4	FF-RL-4	BAR	BBR	BVR	B8	VFRR	BFB	B5/4	BPR	VL
A/V5	B/V6	V/V5	FF-R-V1	FF-L-V1	FF-RL-VL	VAR	VBL	VVL	V5			V1	VPL	VR
A/V6	B/V8	V/V6	FF-R-V3	FF-L-V3	FF-RL-VR	VAL	VBR	VVR	V6			V3	VPR	

V. Electric motor

Size: [71] Pitch circle dia of flange: [100] Poles: [4] Power [kW]: [0,25]

Special accessories and requirements.....

VI. Accessories

Single-sided output shaft ☐
1 pc FF flange + fasteners ☐
Double-sided output shaft ☐
2 pcs FF flange + fasteners ☐
Reaction arm ☐
2 pcs foot + fasteners ☐
reducer sleeve Order No.: .....

VII. Special requirements

.....
.....
.....
.....

Nottingham Electrical Transmissions. Northern Court, Vernon Road, Basford, Nottingham. NG6 0BJ
Tel: +44 (0) 115 9753655 Fax: +44 (0) 115 9770366 email: sales@net-eng.co.uk www.net-eng.co.uk

ORDER FORM

Customer

Company (name) .....
Street, No. .....
Town ..... Post code .....
P.O.B. .....
VAT. No. .....
Bank, Account No. and IBAN .....

Order No. .....
Tel./fax .....
Issued by (name) .....
Date .....
Signature (stamp) .....

Q-ty/pcs ☐ Required delivery ☐

I. Gearbox

RT ☐
MRT with motor ☐
MRT without motor ☐
MRP with motor ☐
MRP without motor ☐
MAT ☐
RT ☐ × ☐ ☐
MRT ☐ × ☐ with motor ☐
MRT ☐ × ☐ without motor ☐

II. Size

RT	30A	40A	50A	60A	70A	80A	100A	120A	150A	180A
MRP		40A	50A	60A	70A	80A	100A	120A	150A	180A
MAT		40A	50A	60A	70A	80A	100A	120A		
RT/MRT ☐ × ☐	30×30	30×50	30×50	40×50	40×60	40×70	50×70	50×80	70×100	80×100
	80×120	100×150	100×180							

III. Gear ratio

RT	5	7,5	10	12,5	15	20	25	30	40	50	60	70	80	100
MRP							75	90	120	150	180	210	240	300
MAT	15	22,5	30	37,5	45	60	75	90	120	150	180	210	240	300
	30	45	60	75	90	120	150	180	240	300	360	420	480	600
	40	60,5	80	100	120	160	200	240	320	400	480	560	640	800
RT/MRT ☐ × ☐	150	225	300	375	450	600	750	900	1200	1500	1800	2100	2400	3000
	3500	4000	8000	10000										

IV. Execution and mounting

RT/MRT; MRP; MAT

A/B3	B/B3	V/B3	FF-R-B5/1	FF-L-B5/1	FF-RL-1
A/B6	B/B6	V/B6	FF-R-B5/2	FF-L-B5/2	FF-RL-2
A/B7	B/B7	V/B7	FF-R-B5/3	FF-R-B5/3	FF-RL-3
A/B8	B/B8	V/B8	FF-R-B5/4	FF-L-B5/4	FF-RL-4
A/V5	B/V6	V/V5	FF-R-V1	FF-L-V1	FF-RL-VL
A/V6	B/V8	V/V6	FF-R-V3	FF-L-V3	FF-RL-VR

RT/MRT ☐ × ☐

Version			Pos.	Version		Pos.	Vers.	Pos.
AAL	ABL	AVL	B3	VFLR	AFL	B5/1	APL	1
AAR	ABR	AVR	B6	VFLL	AFR	B5/2	APR	2
BAL	BBL	BVL	B7	VFRL	BFL	B5/3	BPL	3
BAR	BBR	BVR	B8	VFRR	BFB	B5/4	BPR	VL
VAR	VBL	VVL	V5			V1	VPL	VR
VAL	VBR	VVR	V6			V3	VPR	

V. Electric motor

Size: ☐ Pitch circle dia of flange: ☐ Poles: ☐ Power [kW]: ☐

Special accessories and requirements.....

VI. Accessories

Single-sided output shaft ☐
1 pc FF flange + fasteners ☐
Double-sided output shaft ☐
2 pcs FF flange + fasteners ☐
Reaction arm ☐
2 pcs foot + fasteners ☐
reducer sleeve Order No.: .....

VII. Special requirements

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