2.1 Overview

Helical-geared precision planetary geared motors

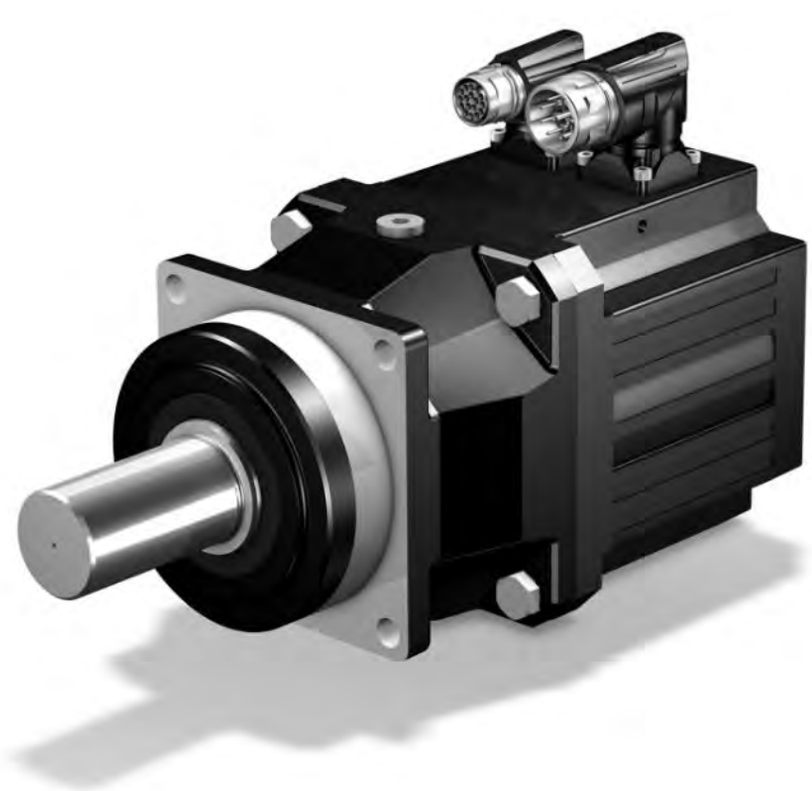
Technical data

i	3 – 100
M_{2acc}	11 – 3000 Nm
$\Delta\varphi_2$	3 – 8 arcmin
η	≤ 95 – 97 %

Features

Power density	★★★★☆
Backlash	★★★★☆
Price category	€€
Shaft load	★★★★☆
Smooth operation	★★★★☆
Torsional stiffness	★★★☆☆
Mass moment of inertia	★★★★★
Helical gearing	✓
Maintenance-free	✓
Any installation position	✓
Continuous operation without cooling (FKM sealing ring at the input)	✓
Reinforced output bearing	✓ (optional)
Compact and highly dynamic due to direct motor attachment	✓

Key: ★☆☆☆☆ good | ★★★★★ excellent



2.2 Selection tables

The technical data specified in the selection tables applies to:

- Installation altitudes up to 1000 m above sea level
- Surrounding temperatures from 0 °C to 40 °C
- Drives with convection-cooled motors (e.g. EZ401**U**)

You can calculate the technical data for drives with forced ventilated motors (for example EZ401**B**) at http://products.stoeber.de.

Formula symbol	Unit	Explanation
a_{th}	–	Parameter for calculating $K_{mot,th}$
C_2	Nm/ arcmin	Torsional stiffness of gear unit (final stiffness) relative to the gear unit output
$\Delta\varphi_2$	arcmin	Backlash at the output shaft with a blocked input
η	%	Efficiency
i	–	Gear ratio
i_{exakt}	–	Mathematically exact gear ratio
J_1	$10^{-4}kgm^2$	Mass moment of inertia relative to the gear unit input
m	kg	Weight
$M_{2.0}$	Nm	Stall torque on the gear unit output
M_{2acc}	Nm	Maximum permitted acceleration torque on the gear unit output
$M_{2acc,max}$	Nm	Maximum permitted acceleration torque of a group of geared motors whose size and nominal torque n_{1N} are the same
M_{2N}	Nm	Nominal torque on the gear unit output (relative to n_{1N})
M_{2NOT}	Nm	Gear unit emergency-off torque on the gear unit output for max. 1000 load changes
n_{1maxDB}	min^{-1}	Maximum permitted input speed of the gear unit in continuous operation
		(at surrounding temperature of 20 °C)
n_{1maxZB}	min^{-1}	Maximum permitted input speed of the gear unit in cyclic operation
		(at surrounding temperature of 20 °C)
n_{1N}	min^{-1}	Nominal speed at the gear unit input
n_{2N}	min^{-1}	Nominal speed at the gear unit output
S	–	Load value: Quotient of gear unit and motor nominal torque without regard to the thermal performance limit. Represents a value for the reserve of the geared motor.

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P2 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 22 Nm)															
188	14	14	5.8	1.1	P222_0160 EZ301U	22	44	16.00	16/1	4500	8000	0.23	8	1.8	2.9
300	9.0	9.2	1.1	1.2	P221_0100 EZ301U	18	36	10.00	10/1	4500	8000	0.20	6	1.6	2.3
375	7.2	7.4	1.2	1.7	P221_0080 EZ301U	18	36	8.000	8/1	4500	8000	0.20	6	1.7	2.3
429	6.3	6.5	1.2	2.2	P221_0070 EZ301U	19	44	7.000	7/1	4500	8000	0.20	6	1.8	2.3
429	11	11	2.1	1.3	P221_0070 EZ302U	22	44	7.000	7/1	4500	8000	0.30	6	1.8	2.9
600	4.5	4.6	1.9	3.1	P221_0050 EZ301U	14	44	5.000	5/1	4500	8000	0.22	6	1.9	2.3
600	7.7	8.1	3.2	1.8	P221_0050 EZ302U	22	44	5.000	5/1	4500	8000	0.32	6	1.9	2.9
600	10	11	4.2	1.4	P221_0050 EZ303U	22	44	5.000	5/1	4500	8000	0.43	6	1.9	3.4
750	3.6	3.7	2.4	3.9	P221_0040 EZ301U	11	44	4.000	4/1	4500	8000	0.24	6	1.9	2.3
750	6.2	6.5	4.2	2.3	P221_0040 EZ302U	19	44	4.000	4/1	4500	8000	0.34	6	1.9	2.9
750	8.0	8.5	5.4	1.7	P221_0040 EZ303U	22	44	4.000	4/1	4500	8000	0.45	6	1.9	3.4
P2 (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 22 Nm)															
375	14	14	5.5	1.2	P222_0160 EZ301U	22	44	16.00	16/1	4500	8000	0.23	8	1.8	2.9
750	6.9	7.4	1.5	1.4	P221_0080 EZ301U	18	36	8.000	8/1	4500	8000	0.20	6	1.7	2.3
857	6.0	6.5	1.5	1.8	P221_0070 EZ301U	19	44	7.000	7/1	4500	8000	0.20	6	1.8	2.3
857	10	11	2.5	1.1	P221_0070 EZ302U	22	44	7.000	7/1	4500	8000	0.30	6	1.8	2.9
1200	4.3	4.6	2.3	2.6	P221_0050 EZ301U	14	44	5.000	5/1	4500	8000	0.22	6	1.9	2.3
1200	7.3	8.1	3.8	1.5	P221_0050 EZ302U	22	44	5.000	5/1	4500	8000	0.32	6	1.9	2.9
1200	9.5	11	5.0	1.2	P221_0050 EZ303U	22	44	5.000	5/1	4500	8000	0.43	6	1.9	3.4
1500	3.5	3.7	2.9	3.2	P221_0040 EZ301U	11	44	4.000	4/1	4500	8000	0.24	6	1.9	2.3
1500	5.8	6.5	5.0	1.9	P221_0040 EZ302U	19	44	4.000	4/1	4500	8000	0.34	6	1.9	2.9
1500	7.6	8.7	6.5	1.5	P221_0040 EZ303U	22	44	4.000	4/1	4500	8000	0.45	6	1.9	3.4
P3 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 65 Nm)															
60	44	45	1.3	1.0	P322_0500 EZ301U	65	130	50.00	50/1	4500	8000	0.20	5	4.5	3.6
75	35	36	1.6	1.2	P322_0400 EZ301U	65	130	40.00	40/1	4500	8000	0.20	5	4.4	3.6
86	31	32	1.6	1.5	P322_0350 EZ301U	65	130	35.00	35/1	4500	8000	0.21	5	4.6	3.6
94	28	29	1.9	1.4	P322_0320 EZ301U	50	100	32.00	32/1	4500	8000	0.23	5	4.1	3.6
107	25	25	1.8	1.8	P322_0280 EZ301U	65	130	28.00	28/1	4500	8000	0.21	5	4.5	3.6
107	42	45	3.0	1.1	P322_0280 EZ302U	65	130	28.00	28/1	4500	8000	0.31	5	4.5	4.2
120	22	23	1.9	2.0	P322_0250 EZ301U	65	130	25.00	25/1	4500	8000	0.22	5	4.6	3.6
120	38	40	3.2	1.2	P322_0250 EZ302U	65	130	25.00	25/1	4500	8000	0.32	5	4.6	4.2
150	18	18	2.1	2.5	P322_0200 EZ301U	53	130	20.00	20/1	4500	8000	0.24	5	4.6	3.6
150	30	32	3.6	1.5	P322_0200 EZ302U	65	130	20.00	20/1	4500	8000	0.34	5	4.6	4.2
150	39	42	4.7	1.1	P322_0200 EZ303U	65	130	20.00	20/1	4500	8000	0.45	5	4.6	4.7
188	14	14	2.4	3.2	P322_0160 EZ301U	43	130	16.00	16/1	4500	8000	0.24	5	4.5	3.6
188	24	26	4.0	1.9	P322_0160 EZ302U	65	130	16.00	16/1	4500	8000	0.34	5	4.5	4.2
188	31	33	5.2	1.4	P322_0160 EZ303U	65	130	16.00	16/1	4500	8000	0.45	5	4.5	4.7
250	11	11	4.1	2.8	P322_0120 EZ301U	32	120	12.00	12/1	4000	8000	0.24	5	4.3	3.6
250	18	19	7.0	1.7	P322_0120 EZ302U	50	120	12.00	12/1	4000	8000	0.34	5	4.3	4.2
250	24	25	9.1	1.3	P322_0120 EZ303U	50	120	12.00	12/1	4000	8000	0.45	5	4.3	4.7
300	9.0	9.2	0.6	2.9	P321_0100 EZ301U	27	100	10.00	10/1	4500	8000	0.21	4	4.0	3.0
300	15	16	0.9	1.7	P321_0100 EZ302U	49	100	10.00	10/1	4500	8000	0.31	4	4.0	3.6
300	20	21	1.2	1.3	P321_0100 EZ303U	50	100	10.00	10/1	4500	8000	0.42	4	4.0	4.1
375	7.2	7.4	0.5	4.8	P321_0080 EZ301U	22	100	8.000	8/1	4500	8000	0.21	4	4.2	3.0
375	12	13	0.9	2.8	P321_0080 EZ302U	39	100	8.000	8/1	4500	8000	0.31	4	4.2	3.6
375	16	17	1.2	2.2	P321_0080 EZ303U	50	100	8.000	8/1	4500	8000	0.42	4	4.2	4.1
375	22	23	1.6	1.6	P321_0080 EZ401U	50	100	8.000	8/1	4500	8000	0.95	4	4.2	5.5
429	11	11	1.0	3.6	P321_0070 EZ302U	34	130	7.000	7/1	4500	8000	0.32	4	4.4	3.6
429	14	15	1.3	2.8	P321_0070 EZ303U	48	130	7.000	7/1	4500	8000	0.43	4	4.4	4.1
429	19	20	1.7	2.1	P321_0070 EZ401U	58	130	7.000	7/1	4500	8000	0.96	4	4.4	5.5
429	32	35	2.9	1.2	P321_0070 EZ402U	60	130	7.000	7/1	4500	8000	1.7	4	4.4	6.6
600	10	11	1.9	3.9	P321_0050 EZ303U	34	110	5.000	5/1	4000	7000	0.48	4	5.1	4.1
600	14	15	2.6	2.9	P321_0050 EZ401U	41	130	5.000	5/1	4000	7000	1.0	4	5.1	5.5
600	21	23	3.9	1.9	P321_0050 EZ501U	65	130	5.000	5/1	4000	7000	3.0	4	5.1	6.5
600	23	25	4.3	1.7	P321_0050 EZ402U	65	130	5.000	5/1	4000	7000	1.7	4	5.1	6.6
600	33	42	6.3	1.2	P321_0050 EZ404U	65	130	5.000	5/1	4000	7000	3.1	4	5.1	8.7
600	36	39	6.8	1.1	P321_0050 EZ502U	65	130	5.000	5/1	4000	7000	5.3	4	5.1	8.0
750	8.0	8.5	2.5	4.9	P321_0040 EZ303U	27	85	4.000	4/1	3700	6500	0.52	4	5.3	4.1
750	11	12	3.3	3.6	P321_0040 EZ401U	33	130	4.000	4/1	3700	6500	1.1	4	5.3	5.5

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P3 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 65 Nm)															
750	17	18	5.1	2.4	P321_0040 EZ501U	62	130	4.000	4/1	3700	6500	3.0	4	5.3	6.5
750	18	20	5.6	2.2	P321_0040 EZ402U	62	130	4.000	4/1	3700	6500	1.8	4	5.3	6.6
750	27	33	8.2	1.5	P321_0040 EZ404U	65	130	4.000	4/1	3700	6500	3.1	4	5.3	8.7
750	29	31	8.8	1.4	P321_0040 EZ502U	65	130	4.000	4/1	3700	6500	5.3	4	5.3	8.0
750	38	43	12	1.0	P321_0040 EZ503U	65	130	4.000	4/1	3700	6500	7.7	4	5.3	9.5
1000	6.0	6.4	5.2	4.4	P321_0030 EZ303U	20	64	3.000	3/1	3500	6000	0.60	4	5.7	4.1
1000	8.1	8.7	7.1	3.2	P321_0030 EZ401U	25	120	3.000	3/1	3500	6000	1.1	4	5.7	5.5
1000	13	14	11	2.1	P321_0030 EZ501U	47	120	3.000	3/1	3500	6000	3.1	4	5.7	6.5
1000	14	15	12	1.9	P321_0030 EZ402U	47	120	3.000	3/1	3500	6000	1.8	4	5.7	6.6
1000	20	25	17	1.3	P321_0030 EZ404U	50	120	3.000	3/1	3500	6000	3.2	4	5.7	8.7
1000	22	23	19	1.2	P321_0030 EZ502U	50	120	3.000	3/1	3500	6000	5.4	4	5.7	8.0
P3 (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 65 Nm)															
171	30	32	1.5	1.5	P322_0350 EZ301U	65	130	35.00	35/1	4500	8000	0.21	5	4.6	3.6
188	27	29	1.8	1.5	P322_0320 EZ301U	50	100	32.00	32/1	4500	8000	0.23	5	4.1	3.6
214	24	25	1.8	1.8	P322_0280 EZ301U	65	130	28.00	28/1	4500	8000	0.21	5	4.5	3.6
214	40	45	3.0	1.1	P322_0280 EZ302U	65	130	28.00	28/1	4500	8000	0.31	5	4.5	4.2
240	21	23	1.8	2.1	P322_0250 EZ301U	65	130	25.00	25/1	4500	8000	0.22	5	4.6	3.6
240	36	40	3.0	1.3	P322_0250 EZ302U	65	130	25.00	25/1	4500	8000	0.32	5	4.6	4.2
300	17	18	2.0	2.7	P322_0200 EZ301U	53	130	20.00	20/1	4500	8000	0.24	5	4.6	3.6
300	29	32	3.4	1.6	P322_0200 EZ302U	65	130	20.00	20/1	4500	8000	0.34	5	4.6	4.2
300	37	43	4.4	1.2	P322_0200 EZ303U	65	130	20.00	20/1	4500	8000	0.45	5	4.6	4.7
375	14	14	2.4	3.2	P322_0160 EZ301U	43	130	16.00	16/1	4500	8000	0.24	5	4.5	3.6
375	23	26	4.0	1.9	P322_0160 EZ302U	65	130	16.00	16/1	4500	8000	0.34	5	4.5	4.2
375	30	34	5.2	1.4	P322_0160 EZ303U	65	130	16.00	16/1	4500	8000	0.45	5	4.5	4.7
500	10	11	3.9	3.0	P322_0120 EZ301U	32	120	12.00	12/1	4000	8000	0.24	5	4.3	3.6
500	17	19	6.6	1.8	P322_0120 EZ302U	50	120	12.00	12/1	4000	8000	0.34	5	4.3	4.2
500	22	26	8.6	1.3	P322_0120 EZ303U	50	120	12.00	12/1	4000	8000	0.45	5	4.3	4.7
600	8.6	9.2	0.7	2.4	P321_0100 EZ301U	27	100	10.00	10/1	4500	8000	0.21	4	4.0	3.0
600	15	16	1.1	1.4	P321_0100 EZ302U	49	100	10.00	10/1	4500	8000	0.31	4	4.0	3.6
600	19	22	1.5	1.1	P321_0100 EZ303U	50	100	10.00	10/1	4500	8000	0.42	4	4.0	4.1
750	6.9	7.4	0.7	4.0	P321_0080 EZ301U	22	100	8.000	8/1	4500	8000	0.21	4	4.2	3.0
750	12	13	1.1	2.4	P321_0080 EZ302U	39	100	8.000	8/1	4500	8000	0.31	4	4.2	3.6
750	15	17	1.4	1.8	P321_0080 EZ303U	50	100	8.000	8/1	4500	8000	0.42	4	4.2	4.1
750	18	22	1.7	1.6	P321_0080 EZ401U	50	100	8.000	8/1	4500	8000	0.95	4	4.2	5.5
750	27	38	2.6	1.0	P321_0080 EZ402U	50	100	8.000	8/1	4500	8000	1.7	4	4.2	6.6
857	10	11	1.2	3.1	P321_0070 EZ302U	34	130	7.000	7/1	4500	8000	0.32	4	4.4	3.6
857	13	15	1.5	2.3	P321_0070 EZ303U	48	130	7.000	7/1	4500	8000	0.43	4	4.4	4.1
857	16	19	1.8	2.0	P321_0070 EZ401U	58	130	7.000	7/1	4500	8000	0.96	4	4.4	5.5
857	24	33	2.7	1.3	P321_0070 EZ402U	60	130	7.000	7/1	4500	8000	1.7	4	4.4	6.6
1200	7.3	8.1	1.7	4.3	P321_0050 EZ302U	24	110	5.000	5/1	4000	7000	0.37	4	5.1	3.6
1200	9.5	11	2.3	3.3	P321_0050 EZ303U	34	110	5.000	5/1	4000	7000	0.48	4	5.1	4.1
1200	11	14	2.6	2.8	P321_0050 EZ401U	41	130	5.000	5/1	4000	7000	1.0	4	5.1	5.5
1200	16	21	3.9	1.9	P321_0050 EZ501U	65	130	5.000	5/1	4000	7000	3.0	4	5.1	6.5
1200	17	24	4.0	1.8	P321_0050 EZ402U	65	130	5.000	5/1	4000	7000	1.7	4	5.1	6.6
1200	25	38	6.0	1.2	P321_0050 EZ502U	65	130	5.000	5/1	4000	7000	5.3	4	5.1	8.0
1200	28	41	6.7	1.1	P321_0050 EZ404U	65	130	5.000	5/1	4000	7000	3.1	4	5.1	8.7
1500	7.6	8.7	3.0	4.1	P321_0040 EZ303U	27	85	4.000	4/1	3700	6500	0.52	4	5.3	4.1
1500	8.9	11	3.5	3.5	P321_0040 EZ401U	33	130	4.000	4/1	3700	6500	1.1	4	5.3	5.5
1500	13	17	5.1	2.4	P321_0040 EZ501U	62	130	4.000	4/1	3700	6500	3.0	4	5.3	6.5
1500	14	19	5.3	2.3	P321_0040 EZ402U	62	130	4.000	4/1	3700	6500	1.8	4	5.3	6.6
1500	20	30	7.8	1.5	P321_0040 EZ502U	65	130	4.000	4/1	3700	6500	5.3	4	5.3	8.0
1500	23	33	8.7	1.4	P321_0040 EZ404U	65	130	4.000	4/1	3700	6500	3.1	4	5.3	8.7
1500	24	41	9.3	1.3	P321_0040 EZ503U	65	130	4.000	4/1	3700	6500	7.7	4	5.3	9.5
2000	4.4	4.9	4.8	4.8	P321_0030 EZ302U	15	64	3.000	3/1	3500	6000	0.49	4	5.7	3.6
2000	5.7	6.5	6.2	3.6	P321_0030 EZ303U	20	64	3.000	3/1	3500	6000	0.60	4	5.7	4.1
2000	6.7	8.1	7.3	3.1	P321_0030 EZ401U	25	120	3.000	3/1	3500	6000	1.1	4	5.7	5.5
2000	9.9	13	11	2.1	P321_0030 EZ501U	47	120	3.000	3/1	3500	6000	3.1	4	5.7	6.5
2000	10	14	11	2.0	P321_0030 EZ402U	47	120	3.000	3/1	3500	6000	1.8	4	5.7	6.6
2000	15	23	17	1.4	P321_0030 EZ502U	50	120	3.000	3/1	3500	6000	5.4	4	5.7	8.0

STÖBER

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P3 (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 65 Nm)															
2000	17	24	18	1.2	P321_0030 EZ404U	50	120	3.000	3/1	3500	6000	3.2	4	5.7	8.7
2000	18	31	20	1.2	P321_0030 EZ503U	50	120	3.000	3/1	3500	6000	7.8	4	5.7	9.5
P4 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 120 Nm)															
38	71	72	0.7	1.1	P422_0800 EZ301U	100	200	80.00	80/1	4500	8000	0.21	5	9.2	6.0
43	62	63	0.7	1.4	P422_0700 EZ301U	110	240	70.00	70/1	4500	8000	0.21	5	9.6	6.0
54	49	51	0.8	1.6	P422_0560 EZ301U	100	200	56.00	56/1	4500	8000	0.23	5	9.2	6.0
60	44	45	0.8	1.9	P422_0500 EZ301U	120	240	50.00	50/1	4500	8000	0.21	5	10	6.0
60	76	80	1.4	1.1	P422_0500 EZ302U	120	240	50.00	50/1	4500	8000	0.31	5	10	6.6
75	35	36	0.9	2.4	P422_0400 EZ301U	110	240	40.00	40/1	4500	8000	0.21	5	10	6.0
75	60	64	1.5	1.4	P422_0400 EZ302U	120	240	40.00	40/1	4500	8000	0.31	5	10	6.6
75	79	83	2.0	1.1	P422_0400 EZ303U	120	240	40.00	40/1	4500	8000	0.42	5	10	7.1
86	31	32	0.9	2.7	P422_0350 EZ301U	93	240	35.00	35/1	4500	8000	0.23	5	11	6.0
86	53	56	1.6	1.6	P422_0350 EZ302U	120	240	35.00	35/1	4500	8000	0.33	5	11	6.6
86	69	73	2.1	1.2	P422_0350 EZ303U	120	240	35.00	35/1	4500	8000	0.44	5	11	7.1
94	28	29	1.1	2.8	P422_0320 EZ301U	85	200	32.00	32/1	3700	6500	0.32	5	9.2	6.0
94	48	51	1.8	1.7	P422_0320 EZ302U	100	200	32.00	32/1	3700	6500	0.42	5	9.2	6.6
94	63	67	2.3	1.3	P422_0320 EZ303U	100	200	32.00	32/1	3700	6500	0.53	5	9.2	7.1
107	25	25	1.1	3.4	P422_0280 EZ301U	74	240	28.00	28/1	4500	8000	0.23	5	10	6.0
107	42	45	1.8	2.0	P422_0280 EZ302U	120	240	28.00	28/1	4500	8000	0.33	5	10	6.6
107	55	58	2.4	1.5	P422_0280 EZ303U	120	240	28.00	28/1	4500	8000	0.44	5	10	7.1
107	74	80	3.2	1.1	P422_0280 EZ401U	120	240	28.00	28/1	4500	8000	0.97	5	10	8.5
120	22	23	1.1	3.8	P422_0250 EZ301U	67	240	25.00	25/1	4000	7000	0.27	5	11	6.0
120	38	40	1.9	2.3	P422_0250 EZ302U	120	240	25.00	25/1	4000	7000	0.37	5	11	6.6
120	49	52	2.5	1.7	P422_0250 EZ303U	120	240	25.00	25/1	4000	7000	0.48	5	11	7.1
120	67	71	3.4	1.3	P422_0250 EZ401U	120	240	25.00	25/1	4000	7000	1.0	5	11	8.5
150	18	18	1.3	4.8	P422_0200 EZ301U	53	240	20.00	20/1	3700	6500	0.32	5	11	6.0
150	30	32	2.1	2.8	P422_0200 EZ302U	95	240	20.00	20/1	3700	6500	0.42	5	11	6.6
150	39	42	2.8	2.2	P422_0200 EZ303U	120	240	20.00	20/1	3700	6500	0.53	5	11	7.1
150	53	57	3.8	1.6	P422_0200 EZ401U	120	240	20.00	20/1	3700	6500	1.1	5	11	8.5
150	82	89	5.8	1.0	P422_0200 EZ501U	120	240	20.00	20/1	3700	6500	3.0	5	11	9.5
188	24	26	2.4	3.5	P422_0160 EZ302U	76	240	16.00	16/1	3700	6500	0.43	5	11	6.6
188	31	33	3.1	2.7	P422_0160 EZ303U	110	240	16.00	16/1	3700	6500	0.54	5	11	7.1
188	43	46	4.2	2.0	P422_0160 EZ401U	120	240	16.00	16/1	3700	6500	1.1	5	11	8.5
188	65	71	6.5	1.3	P422_0160 EZ501U	120	240	16.00	16/1	3700	6500	3.0	5	11	9.5
188	71	79	7.1	1.2	P422_0160 EZ402U	120	240	16.00	16/1	3700	6500	1.8	5	11	9.6
250	11	11	2.8	4.7	P422_0120 EZ301U	32	240	12.00	12/1	3500	6500	0.36	5	9.9	6.0
250	18	19	4.7	2.8	P422_0120 EZ302U	57	240	12.00	12/1	3500	6500	0.46	5	9.9	6.6
250	24	25	6.1	2.1	P422_0120 EZ303U	80	240	12.00	12/1	3500	6500	0.57	5	9.9	7.1
250	32	34	8.3	1.6	P422_0120 EZ401U	97	240	12.00	12/1	3500	6500	1.1	5	9.9	8.5
250	49	54	13	1.0	P422_0120 EZ501U	100	240	12.00	12/1	3500	6500	3.1	5	9.9	9.5
300	27	29	1.0	1.9	P421_0100 EZ401U	82	200	10.00	10/1	4000	7000	0.97	4	9.0	6.6
300	42	46	1.6	1.3	P421_0100 EZ501U	100	200	10.00	10/1	4000	7000	2.9	4	9.0	7.6
300	46	50	1.7	1.2	P421_0100 EZ402U	100	200	10.00	10/1	4000	7000	1.7	4	9.0	7.7
375	22	23	1.0	3.2	P421_0080 EZ401U	66	200	8.000	8/1	4000	7000	0.99	4	9.5	6.6
375	33	36	1.5	2.1	P421_0080 EZ501U	100	200	8.000	8/1	4000	7000	3.0	4	9.5	7.6
375	36	40	1.7	1.9	P421_0080 EZ402U	100	200	8.000	8/1	4000	7000	1.7	4	9.5	7.7
375	54	67	2.5	1.3	P421_0080 EZ404U	100	200	8.000	8/1	4000	7000	3.0	4	9.5	9.8
375	57	62	2.6	1.2	P421_0080 EZ502U	100	200	8.000	8/1	4000	7000	5.3	4	9.5	9.1
429	19	20	1.1	3.9	P421_0070 EZ401U	58	240	7.000	7/1	4000	7000	1.0	4	10	6.6
429	29	32	1.7	2.5	P421_0070 EZ501U	110	240	7.000	7/1	4000	7000	3.0	4	10	7.6
429	32	35	1.9	2.3	P421_0070 EZ402U	110	240	7.000	7/1	4000	7000	1.7	4	10	7.7
429	47	58	2.7	1.6	P421_0070 EZ404U	110	240	7.000	7/1	4000	7000	3.1	4	10	9.8
429	50	54	2.9	1.5	P421_0070 EZ502U	110	240	7.000	7/1	4000	7000	5.3	4	10	9.1
429	66	75	3.8	1.1	P421_0070 EZ503U	110	240	7.000	7/1	4000	7000	7.7	4	10	11
600	21	23	2.5	3.6	P421_0050 EZ501U	78	240	5.000	5/1	3700	6500	3.1	4	12	7.6
600	23	25	2.8	3.3	P421_0050 EZ402U	78	240	5.000	5/1	3700	6500	1.8	4	12	7.7
600	33	42	4.1	2.2	P421_0050 EZ404U	120	240	5.000	5/1	3700	6500	3.2	4	12	9.8
600	36	39	4.4	2.1	P421_0050 EZ502U	120	240	5.000	5/1	3700	6500	5.4	4	12	9.1
600	36	40	4.4	2.1	P421_0050 EZ701U	97	240	5.000	5/1	3700	6500	8.7	4	12	11

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P4 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 120 Nm)															
600	47	54	5.7	1.6	P421_0050 EZ503U	120	240	5.000	5/1	3700	6500	7.8	4	12	11
600	58	70	7.1	1.3	P421_0050 EZ702U	120	240	5.000	5/1	3700	6500	14	4	12	13
600	65	78	8.0	1.1	P421_0050 EZ505U	120	240	5.000	5/1	3700	6500	12	4	12	14
750	17	18	3.3	4.5	P421_0040 EZ501U	62	240	4.000	4/1	3300	6000	3.2	4	12	7.6
750	18	20	3.6	4.1	P421_0040 EZ402U	62	200	4.000	4/1	3300	6000	1.9	4	12	7.7
750	27	33	5.3	2.8	P421_0040 EZ404U	110	240	4.000	4/1	3300	6000	3.3	4	12	9.8
750	29	31	5.7	2.6	P421_0040 EZ502U	120	240	4.000	4/1	3300	6000	5.5	4	12	9.1
750	29	32	5.7	2.6	P421_0040 EZ701U	78	240	4.000	4/1	3300	6000	8.8	4	12	11
750	38	43	7.5	2.0	P421_0040 EZ503U	120	240	4.000	4/1	3300	6000	7.9	4	12	11
750	47	56	9.3	1.6	P421_0040 EZ702U	120	240	4.000	4/1	3300	6000	14	4	12	13
750	52	62	10	1.4	P421_0040 EZ505U	120	240	4.000	4/1	3300	6000	12	4	12	14
750	64	81	13	1.2	P421_0040 EZ703U	120	240	4.000	4/1	3300	6000	22	4	12	15
1000	13	14	8.0	3.5	P421_0030 EZ501U	47	240	3.000	3/1	3000	5500	3.6	4	13	7.6
1000	14	15	8.7	3.2	P421_0030 EZ402U	47	150	3.000	3/1	3000	5500	2.3	4	13	7.7
1000	20	25	13	2.2	P421_0030 EZ404U	84	240	3.000	3/1	3000	5500	3.7	4	13	9.8
1000	22	23	14	2.0	P421_0030 EZ502U	90	240	3.000	3/1	3000	5500	5.9	4	13	9.1
1000	22	24	14	2.0	P421_0030 EZ701U	58	240	3.000	3/1	3000	5500	9.2	4	13	11
1000	28	32	18	1.5	P421_0030 EZ503U	100	240	3.000	3/1	3000	5500	8.3	4	13	11
1000	35	42	22	1.3	P421_0030 EZ702U	100	240	3.000	3/1	3000	5500	14	4	13	13
1000	39	47	25	1.1	P421_0030 EZ505U	100	240	3.000	3/1	3000	5500	13	4	13	14
P4 (n_{1N} = 4500 rpm, $M_{2acc,max}$ = 120 Nm)															
900	46	74	6.4	1.4	P421_0050 EZ505U	120	240	5.000	5/1	3700	6500	12	4	12	14
1125	37	59	8.4	1.8	P421_0040 EZ505U	120	240	4.000	4/1	3300	6000	12	4	12	14
1125	47	78	11	1.4	P421_0040 EZ703U	120	240	4.000	4/1	3300	6000	22	4	12	15
1500	28	45	20	1.4	P421_0030 EZ505U	100	240	3.000	3/1	3000	5500	13	4	13	14
1500	35	58	26	1.1	P421_0030 EZ703U	100	240	3.000	3/1	3000	5500	22	4	13	15
P4 (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 120 Nm)															
75	68	72	0.6	1.2	P422_0800 EZ301U	100	200	80.00	80/1	4500	8000	0.21	5	9.2	6.0
86	59	63	0.6	1.4	P422_0700 EZ301U	110	240	70.00	70/1	4500	8000	0.21	5	9.6	6.0
107	47	51	0.8	1.7	P422_0560 EZ301U	100	200	56.00	56/1	4500	8000	0.23	5	9.2	6.0
120	42	45	0.8	2.0	P422_0500 EZ301U	120	240	50.00	50/1	4500	8000	0.21	5	10	6.0
120	71	80	1.3	1.2	P422_0500 EZ302U	120	240	50.00	50/1	4500	8000	0.31	5	10	6.6
150	34	36	0.9	2.4	P422_0400 EZ301U	110	240	40.00	40/1	4500	8000	0.21	5	10	6.0
150	57	64	1.5	1.4	P422_0400 EZ302U	120	240	40.00	40/1	4500	8000	0.31	5	10	6.6
150	74	86	2.0	1.1	P422_0400 EZ303U	120	240	40.00	40/1	4500	8000	0.42	5	10	7.1
171	30	32	0.9	2.9	P422_0350 EZ301U	93	240	35.00	35/1	4500	8000	0.23	5	11	6.0
171	50	56	1.5	1.7	P422_0350 EZ302U	120	240	35.00	35/1	4500	8000	0.33	5	11	6.6
171	65	75	2.0	1.3	P422_0350 EZ303U	120	240	35.00	35/1	4500	8000	0.44	5	11	7.1
188	27	29	1.0	3.0	P422_0320 EZ301U	85	200	32.00	32/1	3700	6500	0.32	5	9.2	6.0
188	46	51	1.7	1.8	P422_0320 EZ302U	100	200	32.00	32/1	3700	6500	0.42	5	9.2	6.6
188	60	68	2.2	1.3	P422_0320 EZ303U	100	200	32.00	32/1	3700	6500	0.53	5	9.2	7.1
214	24	25	1.0	3.6	P422_0280 EZ301U	74	240	28.00	28/1	4500	8000	0.23	5	10	6.0
214	40	45	1.7	2.1	P422_0280 EZ302U	120	240	28.00	28/1	4500	8000	0.33	5	10	6.6
214	52	60	2.2	1.6	P422_0280 EZ303U	120	240	28.00	28/1	4500	8000	0.44	5	10	7.1
214	61	74	2.6	1.4	P422_0280 EZ401U	120	240	28.00	28/1	4500	8000	0.97	5	10	8.5
240	21	23	1.1	4.0	P422_0250 EZ301U	67	240	25.00	25/1	4000	7000	0.27	5	11	6.0
240	36	40	1.8	2.4	P422_0250 EZ302U	120	240	25.00	25/1	4000	7000	0.37	5	11	6.6
240	47	53	2.4	1.8	P422_0250 EZ303U	120	240	25.00	25/1	4000	7000	0.48	5	11	7.1
240	55	67	2.8	1.6	P422_0250 EZ401U	120	240	25.00	25/1	4000	7000	1.0	5	11	8.5
300	29	32	2.0	3.0	P422_0200 EZ302U	95	240	20.00	20/1	3700	6500	0.42	5	11	6.6
300	37	43	2.6	2.3	P422_0200 EZ303U	120	240	20.00	20/1	3700	6500	0.53	5	11	7.1
300	44	53	3.1	1.9	P422_0200 EZ401U	120	240	20.00	20/1	3700	6500	1.1	5	11	8.5
300	65	84	4.6	1.3	P422_0200 EZ501U	120	240	20.00	20/1	3700	6500	3.0	5	11	9.5
375	23	26	2.3	3.7	P422_0160 EZ302U	76	240	16.00	16/1	3700	6500	0.43	5	11	6.6
375	30	34	3.0	2.9	P422_0160 EZ303U	110	240	16.00	16/1	3700	6500	0.54	5	11	7.1
375	35	43	3.5	2.4	P422_0160 EZ401U	120	240	16.00	16/1	3700	6500	1.1	5	11	8.5
375	52	67	5.1	1.6	P422_0160 EZ501U	120	240	16.00	16/1	3700	6500	3.0	5	11	9.5
375	53	74	5.3	1.6	P422_0160 EZ402U	120	240	16.00	16/1	3700	6500	1.8	5	11	9.6
500	10	11	2.6	4.9	P422_0120 EZ301U	32	240	12.00	12/1	3500	6500	0.36	5	9.9	6.0

STÖBER

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P4 (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 120 Nm)															
500	17	19	4.4	2.9	P422_0120 EZ302U	57	240	12.00	12/1	3500	6500	0.46	5	9.9	6.6
500	22	26	5.8	2.2	P422_0120 EZ303U	80	240	12.00	12/1	3500	6500	0.57	5	9.9	7.1
500	26	32	6.8	1.9	P422_0120 EZ401U	97	240	12.00	12/1	3500	6500	1.1	5	9.9	8.5
500	39	50	10	1.3	P422_0120 EZ501U	100	240	12.00	12/1	3500	6500	3.1	5	9.9	9.5
500	40	56	10	1.3	P422_0120 EZ402U	100	240	12.00	12/1	3500	6500	1.8	5	9.9	9.6
600	22	27	1.1	1.9	P421_0100 EZ401U	82	200	10.00	10/1	4000	7000	0.97	4	9.0	6.6
600	33	43	1.6	1.3	P421_0100 EZ501U	100	200	10.00	10/1	4000	7000	2.9	4	9.0	7.6
600	34	48	1.6	1.2	P421_0100 EZ402U	100	200	10.00	10/1	4000	7000	1.7	4	9.0	7.7
750	18	22	1.0	3.1	P421_0080 EZ401U	66	200	8.000	8/1	4000	7000	0.99	4	9.5	6.6
750	26	34	1.5	2.1	P421_0080 EZ501U	100	200	8.000	8/1	4000	7000	3.0	4	9.5	7.6
750	27	38	1.6	2.0	P421_0080 EZ402U	100	200	8.000	8/1	4000	7000	1.7	4	9.5	7.7
750	40	61	2.3	1.4	P421_0080 EZ502U	100	200	8.000	8/1	4000	7000	5.3	4	9.5	9.1
750	45	65	2.6	1.2	P421_0080 EZ404U	100	200	8.000	8/1	4000	7000	3.0	4	9.5	9.8
857	16	19	1.1	3.8	P421_0070 EZ401U	58	240	7.000	7/1	4000	7000	1.0	4	10	6.6
857	23	30	1.7	2.6	P421_0070 EZ501U	110	240	7.000	7/1	4000	7000	3.0	4	10	7.6
857	24	33	1.7	2.5	P421_0070 EZ402U	110	240	7.000	7/1	4000	7000	1.7	4	10	7.7
857	35	53	2.6	1.7	P421_0070 EZ502U	110	240	7.000	7/1	4000	7000	5.3	4	10	9.1
857	39	57	2.9	1.5	P421_0070 EZ404U	110	240	7.000	7/1	4000	7000	3.1	4	10	9.8
857	42	72	3.1	1.4	P421_0070 EZ503U	110	240	7.000	7/1	4000	7000	7.7	4	10	11
1200	16	21	2.5	3.6	P421_0050 EZ501U	78	240	5.000	5/1	3700	6500	3.1	4	12	7.6
1200	17	24	2.6	3.5	P421_0050 EZ402U	78	240	5.000	5/1	3700	6500	1.8	4	12	7.7
1200	25	38	3.9	2.3	P421_0050 EZ502U	120	240	5.000	5/1	3700	6500	5.4	4	12	9.1
1200	25	38	3.9	2.3	P421_0050 EZ701U	97	240	5.000	5/1	3700	6500	8.7	4	12	11
1200	28	41	4.3	2.1	P421_0050 EZ404U	120	240	5.000	5/1	3700	6500	3.2	4	12	9.8
1200	30	51	4.6	2.0	P421_0050 EZ503U	120	240	5.000	5/1	3700	6500	7.8	4	12	11
1200	35	69	5.4	1.7	P421_0050 EZ702U	120	240	5.000	5/1	3700	6500	14	4	12	13
1500	13	17	3.3	4.5	P421_0040 EZ501U	62	240	4.000	4/1	3300	6000	3.2	4	12	7.6
1500	14	19	3.4	4.3	P421_0040 EZ402U	62	200	4.000	4/1	3300	6000	1.9	4	12	7.7
1500	20	30	5.1	2.9	P421_0040 EZ502U	120	240	4.000	4/1	3300	6000	5.5	4	12	9.1
1500	20	31	5.1	2.9	P421_0040 EZ701U	78	240	4.000	4/1	3300	6000	8.8	4	12	11
1500	23	33	5.6	2.6	P421_0040 EZ404U	110	240	4.000	4/1	3300	6000	3.3	4	12	9.8
1500	24	41	6.0	2.5	P421_0040 EZ503U	120	240	4.000	4/1	3300	6000	7.9	4	12	11
1500	28	55	7.0	2.1	P421_0040 EZ702U	120	240	4.000	4/1	3300	6000	14	4	12	13
P5 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 300 Nm)															
43	186	200	0.9	1.1	P522_0700 EZ401U	270	600	70.00	70/1	4000	7000	0.98	4	26	11
54	149	160	1.1	1.3	P522_0560 EZ401U	250	500	56.00	56/1	4000	7000	1.0	4	25	11
60	133	143	1.1	1.6	P522_0500 EZ401U	300	600	50.00	50/1	4000	7000	0.98	4	27	11
60	204	223	1.7	1.0	P522_0500 EZ501U	300	600	50.00	50/1	4000	7000	3.0	4	27	12
75	106	114	1.2	1.9	P522_0400 EZ401U	300	600	40.00	40/1	4000	7000	0.98	4	26	11
75	163	179	1.9	1.2	P522_0400 EZ501U	300	600	40.00	40/1	4000	7000	3.0	4	26	12
75	179	198	2.1	1.1	P522_0400 EZ402U	300	600	40.00	40/1	4000	7000	1.7	4	26	12
86	93	100	1.3	2.3	P522_0350 EZ401U	280	600	35.00	35/1	4000	7000	1.0	4	28	11
86	143	156	2.0	1.5	P522_0350 EZ501U	300	600	35.00	35/1	4000	7000	3.0	4	28	12
86	156	173	2.2	1.3	P522_0350 EZ402U	300	600	35.00	35/1	4000	7000	1.7	4	28	12
94	85	91	1.4	2.4	P522_0320 EZ401U	250	500	32.00	32/1	3300	6000	1.2	4	25	11
94	131	143	2.2	1.5	P522_0320 EZ501U	250	500	32.00	32/1	3300	6000	3.2	4	25	12
94	143	158	2.4	1.4	P522_0320 EZ402U	250	500	32.00	32/1	3300	6000	1.9	4	25	12
107	74	80	1.4	2.8	P522_0280 EZ401U	230	600	28.00	28/1	4000	7000	1.0	4	27	11
107	114	125	2.2	1.8	P522_0280 EZ501U	300	600	28.00	28/1	4000	7000	3.0	4	27	12
107	125	138	2.4	1.7	P522_0280 EZ402U	300	600	28.00	28/1	4000	7000	1.7	4	27	12
107	184	229	3.5	1.1	P522_0280 EZ404U	300	600	28.00	28/1	4000	7000	3.1	4	27	14
107	197	213	3.8	1.1	P522_0280 EZ502U	300	600	28.00	28/1	4000	7000	5.3	4	27	14
120	67	71	1.5	3.2	P522_0250 EZ401U	200	600	25.00	25/1	3700	6500	1.1	4	28	11
120	102	112	2.3	2.1	P522_0250 EZ501U	300	600	25.00	25/1	3700	6500	3.1	4	28	12
120	112	124	2.6	1.9	P522_0250 EZ402U	300	600	25.00	25/1	3700	6500	1.8	4	28	12
120	164	204	3.7	1.3	P522_0250 EZ404U	300	600	25.00	25/1	3700	6500	3.2	4	28	14
120	176	190	4.0	1.2	P522_0250 EZ502U	300	600	25.00	25/1	3700	6500	5.4	4	28	14
120	176	197	4.0	1.2	P522_0250 EZ701U	300	600	25.00	25/1	3700	6500	8.7	4	28	15
150	53	57	1.7	3.9	P522_0200 EZ401U	160	600	20.00	20/1	3300	6000	1.2	4	28	11

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P5 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 300 Nm)															
150	82	89	2.6	2.6	P522_0200 EZ501U	300	600	20.00	20/1	3300	6000	3.2	4	28	12
150	89	99	2.9	2.4	P522_0200 EZ402U	300	600	20.00	20/1	3300	6000	1.9	4	28	12
150	131	163	4.2	1.6	P522_0200 EZ404U	300	600	20.00	20/1	3300	6000	3.3	4	28	14
150	141	152	4.5	1.5	P522_0200 EZ502U	300	600	20.00	20/1	3300	6000	5.5	4	28	14
150	141	158	4.5	1.5	P522_0200 EZ701U	300	600	20.00	20/1	3300	6000	8.8	4	28	15
150	184	211	5.9	1.1	P522_0200 EZ503U	300	600	20.00	20/1	3300	6000	7.9	4	28	15
188	43	46	1.9	4.9	P522_0160 EZ401U	130	600	16.00	16/1	3300	6000	1.3	4	28	11
188	65	71	2.9	3.2	P522_0160 EZ501U	240	600	16.00	16/1	3300	6000	3.2	4	28	12
188	71	79	3.2	2.9	P522_0160 EZ402U	240	600	16.00	16/1	3300	6000	2.0	4	28	12
188	105	131	4.7	2.0	P522_0160 EZ404U	300	600	16.00	16/1	3300	6000	3.3	4	28	14
188	112	122	5.0	1.9	P522_0160 EZ502U	300	600	16.00	16/1	3300	6000	5.5	4	28	14
188	112	126	5.0	1.9	P522_0160 EZ701U	300	600	16.00	16/1	3300	6000	8.8	4	28	15
188	147	169	6.6	1.4	P522_0160 EZ503U	300	600	16.00	16/1	3300	6000	7.9	4	28	15
188	182	219	8.1	1.2	P522_0160 EZ702U	300	600	16.00	16/1	3300	6000	14	4	28	18
250	32	34	3.8	3.8	P522_0120 EZ401U	97	460	12.00	12/1	3000	6000	1.3	4	27	11
250	49	54	5.9	2.4	P522_0120 EZ501U	180	460	12.00	12/1	3000	6000	3.3	4	27	12
250	54	59	6.4	2.2	P522_0120 EZ402U	180	460	12.00	12/1	3000	6000	2.0	4	27	12
250	79	98	9.5	1.5	P522_0120 EZ404U	200	460	12.00	12/1	3000	6000	3.3	4	27	14
250	84	91	10	1.4	P522_0120 EZ502U	200	460	12.00	12/1	3000	6000	5.6	4	27	14
250	84	95	10	1.4	P522_0120 EZ701U	200	460	12.00	12/1	3000	6000	8.9	4	27	15
250	111	127	13	1.1	P522_0120 EZ503U	200	460	12.00	12/1	3000	6000	7.9	4	27	15
300	42	46	1.8	2.9	P521_0100 EZ501U	160	500	10.00	10/1	3700	6500	3.0	3	25	9.4
300	72	78	3.1	1.7	P521_0100 EZ502U	250	500	10.00	10/1	3700	6500	5.3	3	25	11
300	72	81	3.1	1.7	P521_0100 EZ701U	190	500	10.00	10/1	3700	6500	8.6	3	25	13
300	94	108	4.1	1.3	P521_0100 EZ503U	250	500	10.00	10/1	3700	6500	7.7	3	25	12
300	116	140	5.1	1.1	P521_0100 EZ702U	250	500	10.00	10/1	3700	6500	14	3	25	15
375	57	62	2.9	3.0	P521_0080 EZ502U	240	500	8.000	8/1	3700	6500	5.4	3	26	11
375	57	64	2.9	3.0	P521_0080 EZ701U	160	500	8.000	8/1	3700	6500	8.7	3	26	13
375	75	86	3.8	2.3	P521_0080 EZ503U	250	500	8.000	8/1	3700	6500	7.8	3	26	12
375	93	112	4.7	1.9	P521_0080 EZ702U	250	500	8.000	8/1	3700	6500	14	3	26	15
375	105	124	5.3	1.7	P521_0080 EZ505U	250	500	8.000	8/1	3700	6500	12	3	26	15
375	128	161	6.4	1.4	P521_0080 EZ703U	250	500	8.000	8/1	3700	6500	22	3	26	17
429	50	54	3.2	3.7	P521_0070 EZ502U	210	600	7.000	7/1	3700	6500	5.5	3	28	11
429	50	56	3.2	3.7	P521_0070 EZ701U	140	600	7.000	7/1	3700	6500	8.8	3	28	13
429	66	75	4.2	2.8	P521_0070 EZ503U	270	600	7.000	7/1	3700	6500	7.8	3	28	12
429	81	98	5.2	2.3	P521_0070 EZ702U	270	600	7.000	7/1	3700	6500	14	3	28	15
429	92	109	5.9	2.0	P521_0070 EZ505U	270	600	7.000	7/1	3700	6500	12	3	28	15
429	112	141	7.2	1.6	P521_0070 EZ703U	270	600	7.000	7/1	3700	6500	22	3	28	17
600	47	54	6.3	3.9	P521_0050 EZ503U	210	430	5.000	5/1	3500	6000	8.2	3	31	12
600	58	70	7.8	3.2	P521_0050 EZ702U	200	600	5.000	5/1	3500	6000	14	3	31	15
600	65	78	8.8	2.8	P521_0050 EZ505U	300	600	5.000	5/1	3500	6000	13	3	31	15
600	80	101	11	2.3	P521_0050 EZ703U	300	600	5.000	5/1	3500	6000	22	3	31	17
600	103	146	14	1.8	P521_0050 EZ705U	300	600	5.000	5/1	3500	6000	35	3	31	23
600	108	180	15	1.7	P521_0050 EZ802U	300	600	5.000	5/1	3500	6000	59	3	31	31
750	38	43	8.3	4.9	P521_0040 EZ503U	170	350	4.000	4/1	3000	5000	8.6	3	32	12
750	47	56	10	3.9	P521_0040 EZ702U	160	600	4.000	4/1	3000	5000	15	3	32	15
750	52	62	11	3.5	P521_0040 EZ505U	260	600	4.000	4/1	3000	5000	13	3	32	15
750	64	81	14	2.9	P521_0040 EZ703U	250	600	4.000	4/1	3000	5000	23	3	32	17
750	83	117	18	2.2	P521_0040 EZ705U	300	600	4.000	4/1	3000	5000	35	3	32	23
750	87	144	19	2.1	P521_0040 EZ802U	300	600	4.000	4/1	3000	5000	59	3	32	31
1000	22	23	16	4.9	P521_0030 EZ502U	90	260	3.000	3/1	2500	4500	8.0	3	36	11
1000	22	24	16	4.9	P521_0030 EZ701U	58	460	3.000	3/1	2500	4500	11	3	36	13
1000	28	32	20	3.7	P521_0030 EZ503U	130	260	3.000	3/1	2500	4500	10	3	36	12
1000	35	42	25	3.0	P521_0030 EZ702U	120	460	3.000	3/1	2500	4500	17	3	36	15
1000	39	47	28	2.7	P521_0030 EZ505U	190	460	3.000	3/1	2500	4500	15	3	36	15
1000	48	61	35	2.2	P521_0030 EZ703U	190	460	3.000	3/1	2500	4500	24	3	36	17
1000	62	88	45	1.7	P521_0030 EZ705U	200	460	3.000	3/1	2500	4500	37	3	36	23
1000	65	108	47	1.6	P521_0030 EZ802U	200	460	3.000	3/1	2500	4500	61	3	36	31

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P5 (n_{1N} = 4500 rpm, $M_{2acc,max}$ = 300 Nm)															
450	92	148	4.6	1.2	P521_0100 EZ505U	250	500	10.00	10/1	3700	6500	12	3	25	15
563	74	119	4.2	2.1	P521_0080 EZ505U	250	500	8.000	8/1	3700	6500	12	3	26	15
563	94	155	5.4	1.6	P521_0080 EZ703U	250	500	8.000	8/1	3700	6500	22	3	26	17
643	65	104	4.7	2.5	P521_0070 EZ505U	270	600	7.000	7/1	3700	6500	12	3	28	15
643	82	136	6.0	2.0	P521_0070 EZ703U	270	600	7.000	7/1	3700	6500	22	3	28	17
900	46	74	7.1	3.5	P521_0050 EZ505U	300	600	5.000	5/1	3500	6000	13	3	31	15
900	51	167	7.8	3.1	P521_0050 EZ802U	300	600	5.000	5/1	3500	6000	59	3	31	31
900	59	97	9.0	2.7	P521_0050 EZ703U	300	600	5.000	5/1	3500	6000	22	3	31	17
900	80	146	12	2.0	P521_0050 EZ705U	300	600	5.000	5/1	3500	6000	35	3	31	23
1125	37	59	9.3	4.3	P521_0040 EZ505U	260	600	4.000	4/1	3000	5000	13	3	32	15
1125	41	134	10	3.9	P521_0040 EZ802U	300	600	4.000	4/1	3000	5000	59	3	32	31
1125	47	78	12	3.4	P521_0040 EZ703U	250	600	4.000	4/1	3000	5000	23	3	32	17
1125	64	116	16	2.5	P521_0040 EZ705U	300	600	4.000	4/1	3000	5000	35	3	32	23
1500	28	45	23	3.3	P521_0030 EZ505U	190	460	3.000	3/1	2500	4500	15	3	36	15
1500	31	100	25	3.0	P521_0030 EZ802U	200	460	3.000	3/1	2500	4500	61	3	36	31
1500	35	58	29	2.6	P521_0030 EZ703U	190	460	3.000	3/1	2500	4500	24	3	36	17
1500	48	87	40	1.9	P521_0030 EZ705U	200	460	3.000	3/1	2500	4500	37	3	36	23
P5 (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 300 Nm)															
86	153	186	0.7	1.4	P522_0700 EZ401U	270	600	70.00	70/1	4000	7000	0.98	4	26	11
107	122	149	0.9	1.6	P522_0560 EZ401U	250	500	56.00	56/1	4000	7000	1.0	4	25	11
120	109	133	0.9	1.8	P522_0500 EZ401U	300	600	50.00	50/1	4000	7000	0.98	4	27	11
120	162	209	1.4	1.2	P522_0500 EZ501U	300	600	50.00	50/1	4000	7000	3.0	4	27	12
150	87	106	1.3	1.8	P522_0400 EZ401U	300	600	40.00	40/1	4000	7000	0.98	4	26	11
150	129	167	1.9	1.2	P522_0400 EZ501U	300	600	40.00	40/1	4000	7000	3.0	4	26	12
150	133	186	2.0	1.2	P522_0400 EZ402U	300	600	40.00	40/1	4000	7000	1.7	4	26	12
171	76	93	1.1	2.7	P522_0350 EZ401U	280	600	35.00	35/1	4000	7000	1.0	4	28	11
171	113	146	1.6	1.9	P522_0350 EZ501U	300	600	35.00	35/1	4000	7000	3.0	4	28	12
171	116	163	1.6	1.8	P522_0350 EZ402U	300	600	35.00	35/1	4000	7000	1.7	4	28	12
188	70	85	1.2	2.9	P522_0320 EZ401U	250	500	32.00	32/1	3300	6000	1.2	4	25	11
188	103	134	1.7	1.9	P522_0320 EZ501U	250	500	32.00	32/1	3300	6000	3.2	4	25	12
188	106	149	1.8	1.9	P522_0320 EZ402U	250	500	32.00	32/1	3300	6000	1.9	4	25	12
214	61	74	1.2	3.4	P522_0280 EZ401U	230	600	28.00	28/1	4000	7000	1.0	4	27	11
214	90	117	1.7	2.3	P522_0280 EZ501U	300	600	28.00	28/1	4000	7000	3.0	4	27	12
214	93	130	1.8	2.3	P522_0280 EZ402U	300	600	28.00	28/1	4000	7000	1.7	4	27	12
214	138	207	2.7	1.5	P522_0280 EZ502U	300	600	28.00	28/1	4000	7000	5.3	4	27	14
214	154	223	3.0	1.4	P522_0280 EZ404U	300	600	28.00	28/1	4000	7000	3.1	4	27	14
240	55	67	1.2	3.8	P522_0250 EZ401U	200	600	25.00	25/1	3700	6500	1.1	4	28	11
240	81	105	1.8	2.6	P522_0250 EZ501U	300	600	25.00	25/1	3700	6500	3.1	4	28	12
240	83	116	1.9	2.5	P522_0250 EZ402U	300	600	25.00	25/1	3700	6500	1.8	4	28	12
240	124	185	2.8	1.7	P522_0250 EZ502U	300	600	25.00	25/1	3700	6500	5.4	4	28	14
240	124	188	2.8	1.7	P522_0250 EZ701U	300	600	25.00	25/1	3700	6500	8.7	4	28	15
240	138	200	3.1	1.5	P522_0250 EZ404U	300	600	25.00	25/1	3700	6500	3.2	4	28	14
300	44	53	1.4	4.8	P522_0200 EZ401U	160	600	20.00	20/1	3300	6000	1.2	4	28	11
300	65	84	2.1	3.3	P522_0200 EZ501U	300	600	20.00	20/1	3300	6000	3.2	4	28	12
300	67	93	2.1	3.2	P522_0200 EZ402U	300	600	20.00	20/1	3300	6000	1.9	4	28	12
300	99	148	3.2	2.1	P522_0200 EZ502U	300	600	20.00	20/1	3300	6000	5.5	4	28	14
300	99	150	3.2	2.1	P522_0200 EZ701U	300	600	20.00	20/1	3300	6000	8.8	4	28	15
300	110	160	3.5	1.9	P522_0200 EZ404U	300	600	20.00	20/1	3300	6000	3.3	4	28	14
300	118	201	3.8	1.8	P522_0200 EZ503U	300	600	20.00	20/1	3300	6000	7.9	4	28	15
375	52	67	2.3	4.1	P522_0160 EZ501U	240	600	16.00	16/1	3300	6000	3.2	4	28	12
375	53	74	2.4	3.9	P522_0160 EZ402U	240	600	16.00	16/1	3300	6000	2.0	4	28	12
375	79	119	3.5	2.7	P522_0160 EZ502U	300	600	16.00	16/1	3300	6000	5.5	4	28	14
375	79	120	3.5	2.7	P522_0160 EZ701U	300	600	16.00	16/1	3300	6000	8.8	4	28	15
375	88	128	3.9	2.4	P522_0160 EZ404U	300	600	16.00	16/1	3300	6000	3.3	4	28	14
375	94	161	4.2	2.2	P522_0160 EZ503U	300	600	16.00	16/1	3300	6000	7.9	4	28	15
375	109	217	4.9	1.9	P522_0160 EZ702U	300	600	16.00	16/1	3300	6000	14	4	28	18
500	26	32	3.2	4.6	P522_0120 EZ401U	97	460	12.00	12/1	3000	6000	1.3	4	27	11
500	39	50	4.7	3.1	P522_0120 EZ501U	180	460	12.00	12/1	3000	6000	3.3	4	27	12
500	40	56	4.8	3.0	P522_0120 EZ402U	180	460	12.00	12/1	3000	6000	2.0	4	27	12

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P5 (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 300 Nm)															
500	59	89	7.1	2.0	P522_0120 EZ502U	200	460	12.00	12/1	3000	6000	5.6	4	27	14
500	59	90	7.1	2.0	P522_0120 EZ701U	200	460	12.00	12/1	3000	6000	8.9	4	27	15
500	66	96	8.0	1.8	P522_0120 EZ404U	200	460	12.00	12/1	3000	6000	3.3	4	27	14
500	71	121	8.5	1.7	P522_0120 EZ503U	200	460	12.00	12/1	3000	6000	7.9	4	27	15
600	33	43	1.8	2.9	P521_0100 EZ501U	160	500	10.00	10/1	3700	6500	3.0	3	25	9.4
600	50	76	2.8	1.9	P521_0100 EZ502U	250	500	10.00	10/1	3700	6500	5.3	3	25	11
600	50	77	2.8	1.9	P521_0100 EZ701U	190	500	10.00	10/1	3700	6500	8.6	3	25	13
600	60	103	3.3	1.6	P521_0100 EZ503U	250	500	10.00	10/1	3700	6500	7.7	3	25	12
600	70	139	3.9	1.4	P521_0100 EZ702U	250	500	10.00	10/1	3700	6500	14	3	25	15
750	40	61	2.5	3.4	P521_0080 EZ502U	240	500	8.000	8/1	3700	6500	5.4	3	26	11
750	40	61	2.5	3.4	P521_0080 EZ701U	160	500	8.000	8/1	3700	6500	8.7	3	26	13
750	48	82	3.0	2.9	P521_0080 EZ503U	250	500	8.000	8/1	3700	6500	7.8	3	26	12
750	56	111	3.5	2.5	P521_0080 EZ702U	250	500	8.000	8/1	3700	6500	14	3	26	15
857	35	53	2.9	4.1	P521_0070 EZ502U	210	600	7.000	7/1	3700	6500	5.5	3	28	11
857	35	54	2.9	4.1	P521_0070 EZ701U	140	600	7.000	7/1	3700	6500	8.8	3	28	13
857	42	72	3.4	3.5	P521_0070 EZ503U	270	600	7.000	7/1	3700	6500	7.8	3	28	12
857	49	97	3.9	3.0	P521_0070 EZ702U	270	600	7.000	7/1	3700	6500	14	3	28	15
1200	30	51	5.1	4.8	P521_0050 EZ503U	210	430	5.000	5/1	3500	6000	8.2	3	31	12
1200	35	69	5.9	4.2	P521_0050 EZ702U	200	600	5.000	5/1	3500	6000	14	3	31	15
P7 (n_{1N} = 2000 rpm, $M_{2acc,max}$ = 700 Nm)															
400	212	321	14	2.1	P721_0050 EZ805U	700	1400	5.000	5/1	3000	5500	135	3	58	54
500	170	256	19	2.6	P721_0040 EZ805U	700	1380	4.000	4/1	2500	4500	136	3	60	54
667	127	192	41	2.2	P721_0030 EZ805U	500	1040	3.000	3/1	2200	3700	141	3	65	54
P7 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 700 Nm)															
38	327	357	0.8	1.2	P722_0800 EZ501U	500	1000	80.00	80/1	3700	6500	3.1	4	52	18
43	286	313	0.8	1.5	P722_0700 EZ501U	650	1250	70.00	70/1	3700	6500	3.1	4	53	18
54	229	250	1.0	1.7	P722_0560 EZ501U	500	1000	56.00	56/1	3700	6500	3.2	4	52	18
60	204	223	0.9	2.2	P722_0500 EZ501U	700	1400	50.00	50/1	3700	6500	3.1	4	53	18
60	352	380	1.6	1.3	P722_0500 EZ502U	700	1400	50.00	50/1	3700	6500	5.4	4	53	19
60	352	394	1.6	1.3	P722_0500 EZ701U	700	1400	50.00	50/1	3700	6500	8.7	4	53	21
75	163	179	1.1	2.7	P722_0400 EZ501U	610	1380	40.00	40/1	3700	6500	3.1	4	52	18
75	281	304	1.8	1.6	P722_0400 EZ502U	700	1380	40.00	40/1	3700	6500	5.4	4	52	19
75	281	315	1.8	1.6	P722_0400 EZ701U	700	1380	40.00	40/1	3700	6500	8.7	4	52	21
75	369	422	2.4	1.2	P722_0400 EZ503U	700	1380	40.00	40/1	3700	6500	7.8	4	52	21
86	143	156	1.1	3.1	P722_0350 EZ501U	530	1400	35.00	35/1	3700	6500	3.2	4	53	18
86	246	266	1.9	1.8	P722_0350 EZ502U	700	1400	35.00	35/1	3700	6500	5.5	4	53	19
86	246	276	1.9	1.8	P722_0350 EZ701U	670	1400	35.00	35/1	3700	6500	8.8	4	53	21
86	323	369	2.5	1.4	P722_0350 EZ503U	700	1400	35.00	35/1	3700	6500	7.9	4	53	21
86	399	479	3.2	1.1	P722_0350 EZ702U	700	1400	35.00	35/1	3700	6500	14	4	53	24
94	131	143	1.3	3.1	P722_0320 EZ501U	490	1000	32.00	32/1	3000	5000	3.9	4	52	18
94	225	243	2.2	1.8	P722_0320 EZ502U	500	1000	32.00	32/1	3000	5000	6.2	4	52	19
94	225	252	2.2	1.8	P722_0320 EZ701U	500	1000	32.00	32/1	3000	5000	9.5	4	52	21
94	295	337	2.9	1.4	P722_0320 EZ503U	500	1000	32.00	32/1	3000	5000	8.5	4	52	21
107	114	125	1.3	3.8	P722_0280 EZ501U	430	1380	28.00	28/1	3700	6500	3.3	4	53	18
107	197	213	2.2	2.2	P722_0280 EZ502U	700	1380	28.00	28/1	3700	6500	5.6	4	53	19
107	197	221	2.2	2.2	P722_0280 EZ701U	530	1380	28.00	28/1	3700	6500	8.9	4	53	21
107	258	295	2.9	1.7	P722_0280 EZ503U	700	1380	28.00	28/1	3700	6500	7.9	4	53	21
107	319	383	3.5	1.4	P722_0280 EZ702U	700	1380	28.00	28/1	3700	6500	14	4	53	24
107	359	426	4.0	1.2	P722_0280 EZ505U	700	1380	28.00	28/1	3700	6500	13	4	53	24
120	102	112	1.3	4.3	P722_0250 EZ501U	380	1400	25.00	25/1	3500	6000	3.6	4	54	18
120	176	190	2.3	2.5	P722_0250 EZ502U	700	1400	25.00	25/1	3500	6000	5.9	4	54	19
120	176	197	2.3	2.5	P722_0250 EZ701U	480	1400	25.00	25/1	3500	6000	9.2	4	54	21
120	230	264	3.0	1.9	P722_0250 EZ503U	700	1400	25.00	25/1	3500	6000	8.2	4	54	21
120	285	342	3.7	1.5	P722_0250 EZ702U	700	1400	25.00	25/1	3500	6000	14	4	54	24
120	321	380	4.2	1.4	P722_0250 EZ505U	700	1400	25.00	25/1	3500	6000	13	4	54	24
120	392	494	5.1	1.1	P722_0250 EZ703U	700	1400	25.00	25/1	3500	6000	22	4	54	26
150	141	152	2.6	3.1	P722_0200 EZ502U	590	1400	20.00	20/1	3000	5000	6.2	4	54	19
150	141	158	2.6	3.1	P722_0200 EZ701U	380	1400	20.00	20/1	3000	5000	9.5	4	54	21
150	184	211	3.4	2.4	P722_0200 EZ503U	700	1400	20.00	20/1	3000	5000	8.6	4	54	21

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P7 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 700 Nm)															
150	228	274	4.2	1.9	P722_0200 EZ702U	700	1400	20.00	20/1	3000	5000	15	4	54	24
150	257	304	4.7	1.7	P722_0200 EZ505U	700	1400	20.00	20/1	3000	5000	13	4	54	24
150	314	395	5.7	1.4	P722_0200 EZ703U	700	1400	20.00	20/1	3000	5000	23	4	54	26
188	112	122	2.9	3.9	P722_0160 EZ502U	470	1340	16.00	16/1	3000	5000	6.3	4	54	19
188	112	126	2.9	3.9	P722_0160 EZ701U	300	1380	16.00	16/1	3000	5000	9.6	4	54	21
188	147	169	3.8	3.0	P722_0160 EZ503U	650	1340	16.00	16/1	3000	5000	8.7	4	54	21
188	182	219	4.7	2.4	P722_0160 EZ702U	620	1380	16.00	16/1	3000	5000	15	4	54	24
188	205	243	5.2	2.1	P722_0160 EZ505U	700	1380	16.00	16/1	3000	5000	13	4	54	24
188	251	316	6.4	1.8	P722_0160 EZ703U	700	1380	16.00	16/1	3000	5000	23	4	54	26
188	324	459	8.3	1.4	P722_0160 EZ705U	700	1380	16.00	16/1	3000	5000	35	4	54	31
250	84	91	5.2	3.3	P722_0120 EZ502U	350	1000	12.00	12/1	2500	5000	6.6	4	53	19
250	84	95	5.2	3.3	P722_0120 EZ701U	230	1040	12.00	12/1	2500	5000	9.9	4	53	21
250	111	127	6.8	2.5	P722_0120 EZ503U	490	1000	12.00	12/1	2500	5000	9.0	4	53	21
250	137	164	8.5	2.0	P722_0120 EZ702U	470	1040	12.00	12/1	2500	5000	15	4	53	24
250	154	182	9.5	1.8	P722_0120 EZ505U	500	1040	12.00	12/1	2500	5000	14	4	53	24
250	188	237	12	1.5	P722_0120 EZ703U	500	1040	12.00	12/1	2500	5000	23	4	53	26
250	243	344	15	1.2	P722_0120 EZ705U	500	1040	12.00	12/1	2500	5000	35	4	53	31
300	72	81	1.8	3.7	P721_0100 EZ701U	190	1000	10.00	10/1	3300	6000	9.0	3	50	17
300	116	140	2.9	2.3	P721_0100 EZ702U	400	1000	10.00	10/1	3300	6000	14	3	50	19
300	160	202	3.9	1.6	P721_0100 EZ703U	500	1000	10.00	10/1	3300	6000	22	3	50	21
300	207	293	5.1	1.3	P721_0100 EZ705U	500	1000	10.00	10/1	3300	6000	35	3	50	27
300	216	360	5.3	1.2	P721_0100 EZ802U	500	1000	10.00	10/1	3300	6000	59	3	50	35
375	93	112	2.8	3.8	P721_0080 EZ702U	320	1000	8.000	8/1	3300	6000	15	3	53	19
375	128	161	3.9	2.7	P721_0080 EZ703U	500	1000	8.000	8/1	3300	6000	22	3	53	21
375	165	234	5.0	2.1	P721_0080 EZ705U	500	1000	8.000	8/1	3300	6000	35	3	53	27
375	173	288	5.2	2.0	P721_0080 EZ802U	500	1000	8.000	8/1	3300	6000	59	3	53	35
429	81	98	3.0	4.7	P721_0070 EZ702U	280	1250	7.000	7/1	3300	6000	15	3	55	19
429	112	141	4.1	3.4	P721_0070 EZ703U	440	1250	7.000	7/1	3300	6000	23	3	55	21
429	145	205	5.3	2.7	P721_0070 EZ705U	650	1250	7.000	7/1	3300	6000	35	3	55	27
429	151	252	5.6	2.5	P721_0070 EZ802U	650	1250	7.000	7/1	3300	6000	59	3	55	35
600	80	101	6.2	4.8	P721_0050 EZ703U	320	900	5.000	5/1	3000	5500	24	3	58	21
600	103	146	7.9	3.7	P721_0050 EZ705U	500	1400	5.000	5/1	3000	5500	36	3	58	27
600	108	180	8.3	3.6	P721_0050 EZ802U	490	1400	5.000	5/1	3000	5500	60	3	58	35
600	129	234	9.9	3.0	P721_0050 EZ803U	700	1400	5.000	5/1	3000	5500	85	3	58	41
750	83	117	10	4.7	P721_0040 EZ705U	400	1380	4.000	4/1	2500	4500	38	3	60	27
750	87	144	11	4.4	P721_0040 EZ802U	390	1380	4.000	4/1	2500	4500	62	3	60	35
750	103	187	13	3.7	P721_0040 EZ803U	560	1380	4.000	4/1	2500	4500	87	3	60	41
1000	62	88	23	3.9	P721_0030 EZ705U	300	1040	3.000	3/1	2200	3700	42	3	65	27
1000	65	108	24	3.8	P721_0030 EZ802U	290	1040	3.000	3/1	2200	3700	66	3	65	35
1000	77	140	29	3.2	P721_0030 EZ803U	420	1040	3.000	3/1	2200	3700	92	3	65	41
P7 (n_{1N} = 4500 rpm, $M_{2acc,max}$ = 700 Nm)															
129	316	509	2.5	1.4	P722_0350 EZ505U	700	1400	35.00	35/1	3700	6500	12	4	53	24
161	253	407	2.8	1.7	P722_0280 EZ505U	700	1380	28.00	28/1	3700	6500	13	4	53	24
161	322	532	3.6	1.4	P722_0280 EZ703U	700	1380	28.00	28/1	3700	6500	22	4	53	26
180	226	363	3.0	2.0	P722_0250 EZ505U	700	1400	25.00	25/1	3500	6000	13	4	54	24
180	287	475	3.8	1.5	P722_0250 EZ703U	700	1400	25.00	25/1	3500	6000	22	4	54	26
225	181	291	3.3	2.4	P722_0200 EZ505U	700	1400	20.00	20/1	3000	5000	13	4	54	24
225	230	380	4.2	1.9	P722_0200 EZ703U	700	1400	20.00	20/1	3000	5000	23	4	54	26
281	144	233	3.7	3.0	P722_0160 EZ505U	700	1380	16.00	16/1	3000	5000	13	4	54	24
281	160	524	4.1	2.8	P722_0160 EZ802U	700	1380	16.00	16/1	3000	5000	59	4	54	40
281	184	304	4.7	2.4	P722_0160 EZ703U	700	1380	16.00	16/1	3000	5000	23	4	54	26
281	249	456	6.4	1.8	P722_0160 EZ705U	700	1380	16.00	16/1	3000	5000	35	4	54	31
375	108	174	6.7	2.6	P722_0120 EZ505U	500	1040	12.00	12/1	2500	5000	14	4	53	24
375	138	228	8.5	2.0	P722_0120 EZ703U	500	1040	12.00	12/1	2500	5000	23	4	53	26
375	187	342	12	1.5	P722_0120 EZ705U	500	1040	12.00	12/1	2500	5000	35	4	53	31
450	102	335	2.9	2.2	P721_0100 EZ802U	500	1000	10.00	10/1	3300	6000	59	3	50	35
450	117	194	3.3	2.0	P721_0100 EZ703U	500	1000	10.00	10/1	3300	6000	22	3	50	21
450	159	291	4.5	1.4	P721_0100 EZ705U	500	1000	10.00	10/1	3300	6000	35	3	50	27
563	81	268	2.8	3.7	P721_0080 EZ802U	500	1000	8.000	8/1	3300	6000	59	3	53	35

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P7 (n_{1N} = 4500 rpm, $M_{2acc,max}$ = 700 Nm)															
563	94	155	3.2	3.3	P721_0080 EZ703U	500	1000	8.000	8/1	3300	6000	22	3	53	21
563	127	233	4.4	2.4	P721_0080 EZ705U	500	1000	8.000	8/1	3300	6000	35	3	53	27
643	71	234	3.0	4.7	P721_0070 EZ802U	650	1250	7.000	7/1	3300	6000	59	3	55	35
643	82	136	3.5	4.1	P721_0070 EZ703U	440	1250	7.000	7/1	3300	6000	23	3	55	21
643	111	204	4.7	3.0	P721_0070 EZ705U	650	1250	7.000	7/1	3300	6000	35	3	55	27
900	80	146	7.0	4.2	P721_0050 EZ705U	500	1400	5.000	5/1	3000	5500	36	3	58	27
P7 (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 700 Nm)															
75	258	334	0.7	1.5	P722_0800 EZ501U	500	1000	80.00	80/1	3700	6500	3.1	4	52	18
86	226	293	0.6	1.9	P722_0700 EZ501U	650	1250	70.00	70/1	3700	6500	3.1	4	53	18
107	181	234	0.8	2.2	P722_0560 EZ501U	500	1000	56.00	56/1	3700	6500	3.2	4	52	18
120	162	209	0.7	2.7	P722_0500 EZ501U	700	1400	50.00	50/1	3700	6500	3.1	4	53	18
120	247	371	1.1	1.8	P722_0500 EZ502U	700	1400	50.00	50/1	3700	6500	5.4	4	53	19
120	247	375	1.1	1.8	P722_0500 EZ701U	700	1400	50.00	50/1	3700	6500	8.7	4	53	21
120	295	504	1.4	1.5	P722_0500 EZ503U	700	1400	50.00	50/1	3700	6500	7.7	4	53	21
150	129	167	1.0	2.9	P722_0400 EZ501U	610	1380	40.00	40/1	3700	6500	3.1	4	52	18
150	198	296	1.5	1.9	P722_0400 EZ502U	700	1380	40.00	40/1	3700	6500	5.4	4	52	19
150	198	300	1.5	1.9	P722_0400 EZ701U	700	1380	40.00	40/1	3700	6500	8.7	4	52	21
150	236	403	1.8	1.6	P722_0400 EZ503U	700	1380	40.00	40/1	3700	6500	7.8	4	52	21
171	113	146	0.9	3.9	P722_0350 EZ501U	530	1400	35.00	35/1	3700	6500	3.2	4	53	18
171	173	259	1.4	2.5	P722_0350 EZ502U	700	1400	35.00	35/1	3700	6500	5.5	4	53	19
171	173	263	1.4	2.5	P722_0350 EZ701U	670	1400	35.00	35/1	3700	6500	8.8	4	53	21
171	206	352	1.6	2.1	P722_0350 EZ503U	700	1400	35.00	35/1	3700	6500	7.9	4	53	21
171	239	475	1.9	1.8	P722_0350 EZ702U	700	1400	35.00	35/1	3700	6500	14	4	53	24
214	90	117	1.0	4.9	P722_0280 EZ501U	430	1380	28.00	28/1	3700	6500	3.3	4	53	18
214	138	207	1.5	3.2	P722_0280 EZ502U	700	1380	28.00	28/1	3700	6500	5.6	4	53	19
214	138	210	1.5	3.2	P722_0280 EZ701U	530	1380	28.00	28/1	3700	6500	8.9	4	53	21
214	165	282	1.8	2.7	P722_0280 EZ503U	700	1380	28.00	28/1	3700	6500	7.9	4	53	21
214	192	380	2.1	2.3	P722_0280 EZ702U	700	1380	28.00	28/1	3700	6500	14	4	53	24
240	124	185	1.6	3.6	P722_0250 EZ502U	700	1400	25.00	25/1	3500	6000	5.9	4	54	19
240	124	188	1.6	3.6	P722_0250 EZ701U	480	1400	25.00	25/1	3500	6000	9.2	4	54	21
240	147	252	1.9	3.0	P722_0250 EZ503U	700	1400	25.00	25/1	3500	6000	8.2	4	54	21
240	171	340	2.2	2.6	P722_0250 EZ702U	700	1400	25.00	25/1	3500	6000	14	4	54	24
600	50	77	1.6	4.1	P721_0100 EZ701U	190	1000	10.00	10/1	3300	6000	9.0	3	50	17
600	70	139	2.2	3.0	P721_0100 EZ702U	400	1000	10.00	10/1	3300	6000	14	3	50	19
750	56	111	2.1	5.0	P721_0080 EZ702U	320	1000	8.000	8/1	3300	6000	15	3	53	19
P8 (n_{1N} = 2000 rpm, $M_{2acc,max}$ = 1600 Nm)															
125	664	1005	10	1.2	P822_0160 EZ805U	1600	3180	16.00	16/1	2500	4500	137	4	169	74
167	498	754	12	1.6	P822_0120 EZ805U	1200	2400	12.00	12/1	2200	4500	138	4	156	74
200	424	641	4.2	1.7	P821_0100 EZ805U	1200	2400	10.00	10/1	2800	4500	135	3	153	64
250	339	513	4.8	2.4	P821_0080 EZ805U	1200	2400	8.000	8/1	2800	4500	136	3	166	64
286	297	449	4.5	3.4	P821_0070 EZ805U	1390	2800	7.000	7/1	2800	4500	138	3	177	64
400	212	321	6.8	4.7	P821_0050 EZ805U	990	2900	5.000	5/1	2500	4000	142	3	194	64
500	170	256	11	4.7	P821_0040 EZ805U	800	2330	4.000	4/1	2200	3500	149	3	205	64
P8 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 1600 Nm)															
38	562	631	0.8	1.4	P822_0800 EZ701U	1200	2400	80.00	80/1	3300	6000	9.0	4	159	37
43	492	552	0.7	2.0	P822_0700 EZ701U	1330	2800	70.00	70/1	3300	6000	9.0	4	165	37
43	798	958	1.1	1.3	P822_0700 EZ702U	1400	2800	70.00	70/1	3300	6000	14	4	165	39
54	394	442	0.9	2.0	P822_0560 EZ701U	1060	2400	56.00	56/1	3300	6000	9.7	4	159	37
54	638	766	1.5	1.3	P822_0560 EZ702U	1200	2400	56.00	56/1	3300	6000	15	4	159	39
60	352	394	0.8	2.8	P822_0500 EZ701U	950	3200	50.00	50/1	3300	6000	9.1	4	168	37
60	570	684	1.3	1.8	P822_0500 EZ702U	1600	3200	50.00	50/1	3300	6000	14	4	168	39
60	784	988	1.7	1.3	P822_0500 EZ703U	1600	3200	50.00	50/1	3300	6000	22	4	168	41
75	281	315	1.1	2.8	P822_0400 EZ701U	760	3180	40.00	40/1	3300	6000	9.2	4	163	37
75	456	547	1.8	1.8	P822_0400 EZ702U	1560	3180	40.00	40/1	3300	6000	14	4	163	39
75	627	790	2.4	1.3	P822_0400 EZ703U	1600	3180	40.00	40/1	3300	6000	22	4	163	41
86	246	276	0.9	4.1	P822_0350 EZ701U	670	3200	35.00	35/1	3300	6000	9.7	4	170	37
86	399	479	1.5	2.5	P822_0350 EZ702U	1360	3200	35.00	35/1	3300	6000	15	4	170	39
86	549	692	2.1	1.8	P822_0350 EZ703U	1600	3200	35.00	35/1	3300	6000	23	4	170	41
86	708	1004	2.7	1.4	P822_0350 EZ705U	1600	3200	35.00	35/1	3300	6000	35	4	170	47

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P8 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 1600 Nm)															
86	741	1234	2.8	1.3	P822_0350 EZ802U	1600	3200	35.00	35/1	3300	6000	59	4	170	55
94	225	252	1.2	3.6	P822_0320 EZ701U	610	2400	32.00	32/1	2500	4500	12	4	159	37
94	365	438	2.0	2.2	P822_0320 EZ702U	1200	2400	32.00	32/1	2500	4500	17	4	159	39
94	502	632	2.7	1.6	P822_0320 EZ703U	1200	2400	32.00	32/1	2500	4500	25	4	159	41
94	648	918	3.5	1.2	P822_0320 EZ705U	1200	2400	32.00	32/1	2500	4500	37	4	159	47
107	197	221	1.3	4.1	P822_0280 EZ701U	530	3180	28.00	28/1	3300	6000	9.8	4	166	37
107	319	383	2.1	2.5	P822_0280 EZ702U	1090	3180	28.00	28/1	3300	6000	15	4	166	39
107	439	553	2.9	1.8	P822_0280 EZ703U	1600	3180	28.00	28/1	3300	6000	23	4	166	41
107	567	803	3.7	1.4	P822_0280 EZ705U	1600	3180	28.00	28/1	3300	6000	35	4	166	47
107	593	987	3.9	1.3	P822_0280 EZ802U	1600	3180	28.00	28/1	3300	6000	59	4	166	55
120	285	342	1.8	3.5	P822_0250 EZ702U	970	3200	25.00	25/1	3000	5500	16	4	171	39
120	392	494	2.4	2.6	P822_0250 EZ703U	1540	3200	25.00	25/1	3000	5500	24	4	171	41
120	506	717	3.2	2.0	P822_0250 EZ705U	1600	3200	25.00	25/1	3000	5500	36	4	171	47
120	530	881	3.3	1.9	P822_0250 EZ802U	1600	3200	25.00	25/1	3000	5500	60	4	171	55
120	632	1145	3.9	1.6	P822_0250 EZ803U	1600	3200	25.00	25/1	3000	5500	86	4	171	61
150	228	274	2.0	4.4	P822_0200 EZ702U	780	3200	20.00	20/1	2500	4500	17	4	172	39
150	314	395	2.7	3.2	P822_0200 EZ703U	1240	3200	20.00	20/1	2500	4500	25	4	172	41
150	405	574	3.5	2.5	P822_0200 EZ705U	1600	3200	20.00	20/1	2500	4500	38	4	172	47
150	424	705	3.7	2.4	P822_0200 EZ802U	1600	3200	20.00	20/1	2500	4500	62	4	172	55
150	505	916	4.4	2.0	P822_0200 EZ803U	1600	3200	20.00	20/1	2500	4500	87	4	172	61
188	182	219	2.8	4.4	P822_0160 EZ702U	620	2790	16.00	16/1	2500	4500	18	4	169	39
188	251	316	3.8	3.2	P822_0160 EZ703U	990	2790	16.00	16/1	2500	4500	26	4	169	41
188	324	459	4.9	2.5	P822_0160 EZ705U	1580	3180	16.00	16/1	2500	4500	38	4	169	47
188	339	564	5.2	2.4	P822_0160 EZ802U	1520	3180	16.00	16/1	2500	4500	62	4	169	55
188	404	733	6.2	2.0	P822_0160 EZ803U	1600	3180	16.00	16/1	2500	4500	88	4	169	61
250	188	237	4.4	4.3	P822_0120 EZ703U	740	2090	12.00	12/1	2200	4500	27	4	156	41
250	243	344	5.7	3.3	P822_0120 EZ705U	1190	2400	12.00	12/1	2200	4500	40	4	156	47
250	254	423	6.0	3.1	P822_0120 EZ802U	1140	2400	12.00	12/1	2200	4500	64	4	156	55
250	303	549	7.1	2.6	P822_0120 EZ803U	1200	2400	12.00	12/1	2200	4500	89	4	156	61
300	216	360	2.5	2.8	P821_0100 EZ802U	970	2400	10.00	10/1	2800	4500	60	3	153	45
300	258	468	2.9	2.4	P821_0100 EZ803U	1200	2400	10.00	10/1	2800	4500	86	3	153	51
375	173	288	2.8	4.0	P821_0080 EZ802U	780	2400	8.000	8/1	2800	4500	62	3	166	45
375	206	374	3.4	3.4	P821_0080 EZ803U	1130	2400	8.000	8/1	2800	4500	87	3	166	51
429	181	327	3.2	4.8	P821_0070 EZ803U	980	2800	7.000	7/1	2800	4500	88	3	177	51
P8 (n_{1N} = 4500 rpm, $M_{2acc,max}$ = 1600 Nm)															
90	575	950	1.3	1.7	P822_0500 EZ703U	1600	3200	50.00	50/1	3300	6000	22	4	168	41
113	460	760	1.8	1.7	P822_0400 EZ703U	1600	3180	40.00	40/1	3300	6000	22	4	163	41
113	623	1140	2.4	1.3	P822_0400 EZ705U	1600	3180	40.00	40/1	3300	6000	35	4	163	47
129	349	1147	1.3	2.9	P822_0350 EZ802U	1600	3200	35.00	35/1	3300	6000	59	4	170	55
129	402	665	1.5	2.5	P822_0350 EZ703U	1600	3200	35.00	35/1	3300	6000	23	4	170	41
129	545	998	2.1	1.8	P822_0350 EZ705U	1600	3200	35.00	35/1	3300	6000	35	4	170	47
141	368	608	2.0	2.2	P822_0320 EZ703U	1200	2400	32.00	32/1	2500	4500	25	4	159	41
141	499	912	2.7	1.6	P822_0320 EZ705U	1200	2400	32.00	32/1	2500	4500	37	4	159	47
161	279	918	1.8	2.9	P822_0280 EZ802U	1600	3180	28.00	28/1	3300	6000	59	4	166	55
161	322	532	2.1	2.5	P822_0280 EZ703U	1600	3180	28.00	28/1	3300	6000	23	4	166	41
161	436	798	2.9	1.8	P822_0280 EZ705U	1600	3180	28.00	28/1	3300	6000	35	4	166	47
180	249	819	1.6	4.0	P822_0250 EZ802U	1600	3200	25.00	25/1	3000	5500	60	4	171	55
180	287	475	1.8	3.5	P822_0250 EZ703U	1540	3200	25.00	25/1	3000	5500	24	4	171	41
180	390	713	2.4	2.6	P822_0250 EZ705U	1600	3200	25.00	25/1	3000	5500	36	4	171	47
225	230	380	2.0	4.4	P822_0200 EZ703U	1240	3200	20.00	20/1	2500	4500	25	4	172	41
225	312	570	2.7	3.2	P822_0200 EZ705U	1600	3200	20.00	20/1	2500	4500	38	4	172	47
281	184	304	2.8	4.4	P822_0160 EZ703U	990	2790	16.00	16/1	2500	4500	26	4	169	41
281	249	456	3.8	3.2	P822_0160 EZ705U	1580	3180	16.00	16/1	2500	4500	38	4	169	47
375	187	342	4.4	4.3	P822_0120 EZ705U	1190	2400	12.00	12/1	2200	4500	40	4	156	47
P8 (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 1600 Nm)															
60	494	751	0.6	1.4	P822_1000 EZ701U	1200	2400	100.0	100/1	3300	6000	9.0	4	148	37
75	395	600	0.5	2.0	P822_0800 EZ701U	1200	2400	80.00	80/1	3300	6000	9.0	4	159	37
86	346	525	0.5	2.9	P822_0700 EZ701U	1330	2800	70.00	70/1	3300	6000	9.0	4	165	37
86	479	951	0.6	2.1	P822_0700 EZ702U	1400	2800	70.00	70/1	3300	6000	14	4	165	39

n_{2N} [rpm]	M_{2N} [Nm]	$M_{2,0}$ [Nm]	a_{th}	S	Type	M_{2acc} [Nm]	M_{2NOT} [Nm]	i	i_{exakt}	n_{1max} DB [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P8 (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 1600 Nm)															
107	277	420	0.6	2.9	P822_0560 EZ701U	1060	2400	56.00	56/1	3300	6000	9.7	4	159	37
107	383	761	0.9	2.1	P822_0560 EZ702U	1200	2400	56.00	56/1	3300	6000	15	4	159	39
120	247	375	0.5	4.0	P822_0500 EZ701U	950	3200	50.00	50/1	3300	6000	9.1	4	168	37
120	342	679	0.8	2.9	P822_0500 EZ702U	1600	3200	50.00	50/1	3300	6000	14	4	168	39
150	198	300	0.8	4.0	P822_0400 EZ701U	760	3180	40.00	40/1	3300	6000	9.2	4	163	37
150	274	543	1.1	2.9	P822_0400 EZ702U	1560	3180	40.00	40/1	3300	6000	14	4	163	39
171	239	475	0.9	4.2	P822_0350 EZ702U	1360	3200	35.00	35/1	3300	6000	15	4	170	39
214	192	380	1.3	4.2	P822_0280 EZ702U	1090	3180	28.00	28/1	3300	6000	15	4	166	39
P9 (n_{1N} = 2000 rpm, $M_{2acc,max}$ = 3000 Nm)															
57	1453	2198	2.9	1.4	P922_0350 EZ805U	3000	6000	35.00	35/1	2800	4500	138	4	333	99
71	1162	1758	3.3	1.7	P922_0280 EZ805U	3000	5530	28.00	28/1	2800	4500	138	4	335	99
80	1038	1570	3.5	1.9	P922_0250 EZ805U	3000	6000	25.00	25/1	2500	4000	143	4	335	99
100	830	1256	3.9	2.4	P922_0200 EZ805U	3000	6000	20.00	20/1	2200	3500	149	4	336	99
125	664	1005	4.4	3.0	P922_0160 EZ805U	3000	5530	16.00	16/1	2200	3500	150	4	341	99
P9 (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 3000 Nm)															
60	1059	1762	1.3	1.9	P922_0500 EZ802U	3000	6000	50.00	50/1	2800	4500	60	4	329	80
60	1264	2290	1.5	1.6	P922_0500 EZ803U	3000	6000	50.00	50/1	2800	4500	86	4	329	86
75	847	1410	1.4	2.4	P922_0400 EZ802U	3000	5530	40.00	40/1	2800	4500	60	4	329	80
75	1011	1832	1.7	2.0	P922_0400 EZ803U	3000	5530	40.00	40/1	2800	4500	86	4	329	86
86	741	1234	1.5	2.7	P922_0350 EZ802U	3000	6000	35.00	35/1	2800	4500	63	4	333	80
86	884	1603	1.8	2.3	P922_0350 EZ803U	3000	6000	35.00	35/1	2800	4500	89	4	333	86
107	593	987	1.7	3.4	P922_0280 EZ802U	2660	5530	28.00	28/1	2800	4500	63	4	335	80
107	708	1282	2.0	2.8	P922_0280 EZ803U	3000	5530	28.00	28/1	2800	4500	89	4	335	86
120	530	881	1.8	3.8	P922_0250 EZ802U	2380	6000	25.00	25/1	2500	4000	68	4	335	80
120	632	1145	2.1	3.2	P922_0250 EZ803U	3000	6000	25.00	25/1	2500	4000	93	4	335	86
150	424	705	2.0	4.7	P922_0200 EZ802U	1900	6000	20.00	20/1	2200	3500	74	4	336	80
150	505	916	2.4	4.0	P922_0200 EZ803U	2760	6000	20.00	20/1	2200	3500	100	4	336	86
188	404	733	2.7	4.9	P922_0160 EZ803U	2200	5530	16.00	16/1	2200	3500	101	4	341	86
P9 (n_{1N} = 4500 rpm, $M_{2acc,max}$ = 3000 Nm)															
90	499	1639	0.6	4.0	P922_0500 EZ802U	3000	6000	50.00	50/1	2800	4500	60	4	329	80

2.3 Dimensional drawings

In this chapter you can find the dimensions of the geared motors.

There is a dimensional drawing for every possible shaft/housing design, each with the tables for gear unit dimensions, motor dimensions and geared motor dimensions.

Dimensions can exceed the specifications of ISO 2768-mK due to casting tolerances or accumulation of individual tolerances.

We reserve the right to make dimensional changes due to ongoing technical development.

You can download CAD models of our standard drives at http://cad.stoeber.de.

Combination options and the dimensions of forced ventilated geared motors can be found at http://cad.stoeber.de.

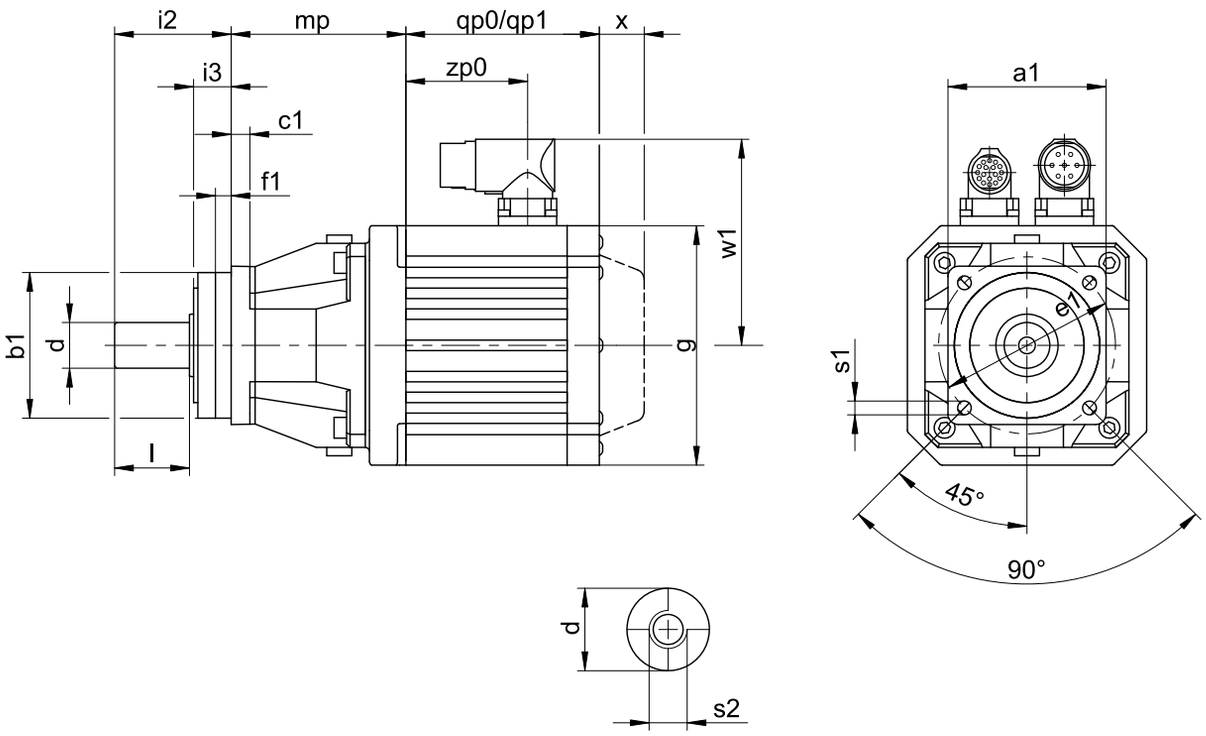
Tolerances

Solid shaft	Tolerance
Fit of shaft end Ø ≤ 50 mm	DIN 748-1, ISO k6
Fit of shaft end ∅ > 50 mm	DIN 748-1, ISO m6
Feather keys	DIN 6885-1, high form A
Balance quality	Q 2.5 (balanced with half feather key)

Centering holes in solid shafts in accordance with DIN 332-2, DR form

Thread size	M4	M5	M6	M8	M10	M12	M16	M20	M24
Gewindetiefe	10	12.5	16	19	22	28	36	42	50

2.3.1 G shaft design (solid shaft without feather key)



qp0	Applies to motors without brake.	qp1	Applies to motors with brake.
x	Applies to encoders using an optical measuring concept.	w1	For variation for One Cable Solution (OCS), see Chapter [▷ 22.4]

Dimensions of gear units

Type	□a1	Øb1	c1	Ød	Øe1	f1	i2	i3	l	Øs1	s2
P221	55	50_{h6}	6	12_{k6}	63	7.0	36	12	22	5.5	M4
P222	55	50_{h6}	6	12_{k6}	63	7.0	36	12	22	5.5	M4
P321	72	60_{h6}	7	16_{k6}	75	7.5	48	18	28	5.5	M5
P322	72	60_{h6}	7	16_{k6}	75	7.5	48	18	28	5.5	M5
P421	76	70_{h6}	9	22_{k6}	85	7.5	56	18	36	6.6	M8
P422	76	70_{h6}	9	22_{k6}	85	7.5	56	18	36	6.6	M8
P521	101	90_{h6}	10	32_{k6}	120	15.0	88	28	58	9.0	M12
P522	101	90_{h6}	10	32_{k6}	120	15.0	88	28	58	9.0	M12
P721	145	130_{h6}	15	40_{k6}	165	3.5	112	27	82	11.0	M16
P722	145	130_{h6}	15	40_{k6}	165	3.5	112	27	82	11.0	M16
P821	190	160_{h6}	15	55_{k6}	215	10.0	112	27	82	13.5	M20
P822	190	160_{h6}	15	55_{k6}	215	10.0	112	27	82	13.5	M20
P922	212	180_{h6}	17	75_{k6}	250	10.0	143	34	105	17.5	M20

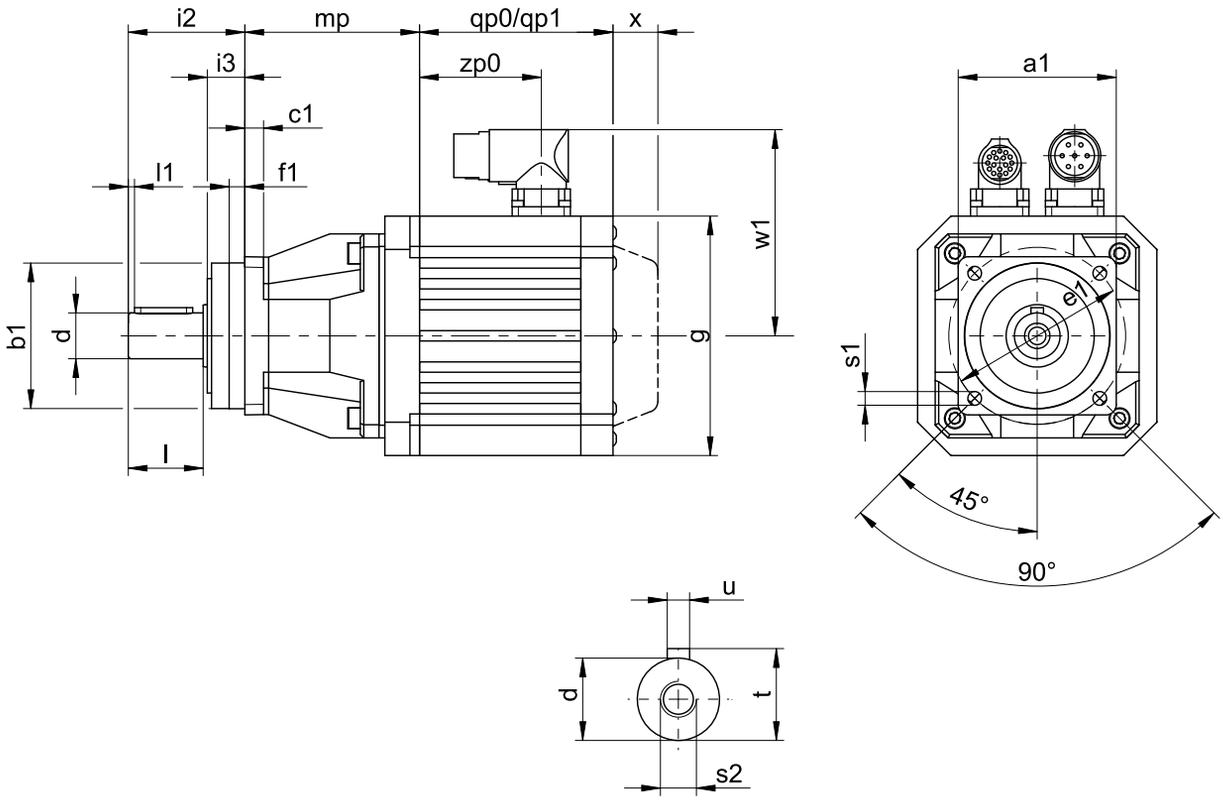
Dimensions of motors

Type	□g	qp0	qp1	w1	x	zp0
EZ301U	72	90	130.0	55.5	21	54.5
EZ302U	72	112	152.0	55.5	21	76.5
EZ303U	72	134	174.0	55.5	21	98.5
EZ401U	98	98	146.5	91.0	22	56.0
EZ402U	98	123	171.5	91.0	22	81.0
EZ404U	98	173	221.5	91.0	22	131.0
EZ501U	115	93	147.5	100.0	22	58.5
EZ502U	115	118	172.5	100.0	22	83.5
EZ503U	115	143	197.5	100.0	22	108.5
EZ505U	115	193	247.5	100.0	22	158.5
EZ701U	145	102	161.0	115.0	22	64.0
EZ702U	145	127	186.0	115.0	22	89.0
EZ703U	145	152	211.0	115.0	22	114.0
EZ705U	145	207	266.0	134.0	22	165.0
EZ802U	190	197	274.0	156.5	22	143.0
EZ803U	190	238	315.0	156.5	22	184.0
EZ805U	190	320	397.0	156.5	22	266.0

Dimensions of geared motors

Type	EZ3	EZ4	EZ5	EZ7	EZ8
	mp	mp	mp	mp	mp
P221	61.5	–	–	–	–
P222	93.5	–	–	–	–
P321	73.5	70.0	72.5	–	–
P322	113.5	–	–	–	–
P421	–	79.0	81.5	87.5	–
P422	131.0	127.5	130.0	–	–
P521	–	–	81.0	87.0	102.0
P522	–	136.5	139.0	145.0	–
P721	–	–	–	98.0	113.0
P722	–	–	158.0	164.0	179.0
P821	–	–	–	–	137.0
P822	–	–	–	206.5	221.5
P922	–	–	–	–	264.0

2.3.2 P shaft design (solid shaft with feather key)



qp0	Applies to motors without brake.	qp1	Applies to motors with brake.
x	Applies to encoders using an optical measuring concept.	w1	For variation for One Cable Solution (OCS), see Chapter [▷ 22.4]

Dimensions of gear units

Type	□a1	Øb1	c1	Ød	Øe1	f1	i2	i3	l	l1	Øs1	s2	t	u
P221	55	50_{h6}	6	12_{k6}	63	7.0	36	12	22	2	5.5	M4	13.5	A4x4x18
P222	55	50_{h6}	6	12_{k6}	63	7.0	36	12	22	2	5.5	M4	13.5	A4x4x18
P321	72	60_{h6}	7	16_{k6}	75	7.5	48	18	28	2	5.5	M5	18.0	A5x5x22
P322	72	60_{h6}	7	16_{k6}	75	7.5	48	18	28	2	5.5	M5	18.0	A5x5x22
P421	76	70_{h6}	9	22_{k6}	85	7.5	56	18	36	3	6.6	M8	24.5	A6x6x28
P422	76	70_{h6}	9	22_{k6}	85	7.5	56	18	36	3	6.6	M8	24.5	A6x6x28
P521	101	90_{h6}	10	32_{k6}	120	15.0	88	28	58	3	9.0	M12	35.0	A10x8x50
P522	101	90_{h6}	10	32_{k6}	120	15.0	88	28	58	3	9.0	M12	35.0	A10x8x50
P721	145	130_{h6}	15	40_{k6}	165	3.5	112	27	82	4	11.0	M16	43.0	A12x8x70
P722	145	130_{h6}	15	40_{k6}	165	3.5	112	27	82	4	11.0	M16	43.0	A12x8x70
P821	190	160_{h6}	15	55_{k6}	215	10.0	112	27	82	6	13.5	M20	59.0	A16x10x70
P822	190	160_{h6}	15	55_{k6}	215	10.0	112	27	82	6	13.5	M20	59.0	A16x10x70
P922	212	180_{h6}	17	75_{k6}	250	10.0	143	34	105	7	17.5	M20	79.5	A20x12x90

Dimensions of motors

Type	□g	qp0	qp1	w1	x	zp0
EZ301U	72	90	130.0	55.5	21	54.5
EZ302U	72	112	152.0	55.5	21	76.5
EZ303U	72	134	174.0	55.5	21	98.5
EZ401U	98	98	146.5	91.0	22	56.0
EZ402U	98	123	171.5	91.0	22	81.0
EZ404U	98	173	221.5	91.0	22	131.0
EZ501U	115	93	147.5	100.0	22	58.5
EZ502U	115	118	172.5	100.0	22	83.5
EZ503U	115	143	197.5	100.0	22	108.5
EZ505U	115	193	247.5	100.0	22	158.5
EZ701U	145	102	161.0	115.0	22	64.0
EZ702U	145	127	186.0	115.0	22	89.0
EZ703U	145	152	211.0	115.0	22	114.0
EZ705U	145	207	266.0	134.0	22	165.0
EZ802U	190	197	274.0	156.5	22	143.0
EZ803U	190	238	315.0	156.5	22	184.0
EZ805U	190	320	397.0	156.5	22	266.0

Dimensions of geared motors

Type	EZ3	EZ4	EZ5	EZ7	EZ8
	mp	mp	mp	mp	mp
P221	61.5	–	–	–	–
P222	93.5	–	–	–	–
P321	73.5	70.0	72.5	–	–
P322	113.5	–	–	–	–
P421	–	79.0	81.5	87.5	–
P422	131.0	127.5	130.0	–	–
P521	–	–	81.0	87.0	102.0
P522	–	136.5	139.0	145.0	–
P721	–	–	–	98.0	113.0
P722	–	–	158.0	164.0	179.0
P821	–	–	–	–	137.0
P822	–	–	–	206.5	221.5
P922	–	–	–	–	264.0

2.4 Type designation

In this chapter, you can find an explanation of the type designation with the associated options.

Additional ordering information not included in the type designation can be found at the end of the chapter.

Sample code

P	4	2	1	S	G	R	0100	EZ401U

Explanation

Code	Designation	Design
P	Type	Planetary gear unit
4	Size	4 (example)
2	Generation	Generation 2
1 2	Stages	Single-stage Two-stage
S	Housing	Standard
G P	Shaft	Solid shaft without feather key Solid shaft with feather key
R D Z	Bearing	Standard bearing Axially reinforced bearing Radially reinforced bearing
0100	Transmission ratio (i x 10)	i = 10 (example)
EZ401U	Motor	EZ synchronous servo motor

In order to complete the type designation, also specify:

- A detailed type designation of the motor, see Chapter [▷ 22]
- Radial shaft seal rings at the output made of FKM or NBR, see Chapter [▷ 2.6.3]
- The position of the plug connectors, see Chapter [▷ 2.5.3]
- For reverse operation of the output shaft at ± 20° to ± 90° and horizontal installation, note Chapter [▷ 2.6.4]

2.5 Product description

2.5.1 Installation conditions

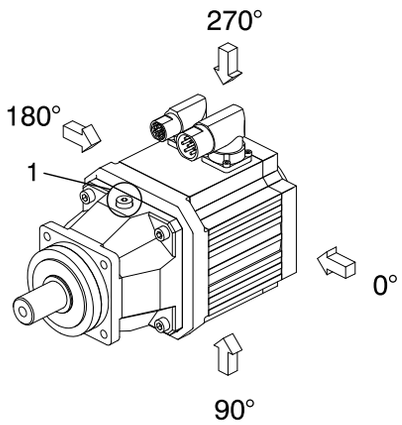
The specified torques and forces only apply when attaching gear units at the machine side using screws of quality 10.9. In addition, the gear housing must be adjusted at the pilot (H7).

2.5.2 Lubricants

STOBER fills the gear units with the amount and type of lubricant specified on the nameplate.

Lubricant filling quantities for gear units, document ID 441871, can be found online at http://www.stoeber.de

2.5.3 Position of the plug connectors



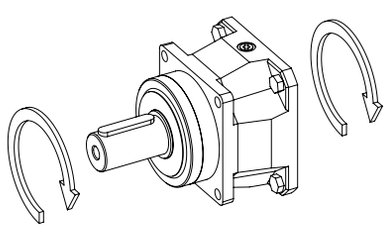
In the standard version, the plug connectors are attached in the 270° position (relative to the oil filler/drain plug (1) of the planetary gear unit). Indicate variations for your geared motor in the purchase order.

2.5.4 Other product features

Feature	Value
Max. permitted gear unit temperature (on the surface of the gear unit)	≤ 90 °C
Paint	Black RAL 9005
(ATEX) Directive 2014/34/EU	Not suitable
Protection class: [1] Gear unit Motor	 IP65 IP56, optionally IP66

2.5.5 Direction of rotation

The input and output rotate in the same direction.



2.6 Project configuration

Project your drive using our SERVOsoft designing software. You can receive SERVOsoft for free from your adviser at one of our sales centers. Observe the limit conditions in this chapter to ensure a safe design for your drives.

The formula symbols for values actually present in the application are marked with *.

Formula symbol	Unit	Explanation
a_{th}	–	Parameter for calculating $K_{mot,th}$
ED	%	Duty cycle relative to 20 minutes
fB_{op}	–	Operating mode operating factor

[1] Observe the protection class of all the components.

Formula symbol	Unit	Explanation
fB_t	–	Run-time operating factor
fB_T	–	Temperature operating factor
F_{2ax*}	N	Actual axial force at the gear unit output
F_{2ax100}	N	Permitted axial force at the gear unit output for $n_{2m*} \leq 100$ rpm
F_{2axN}	N	Permitted nominal axial force at the gear unit output
$F_{2rad,acc}$	N	Permitted radial acceleration force at the gear unit output
$F_{2rad,acc*}$	N	Actual radial acceleration force at the gear unit output
$F_{2rad,acc,1*}$	N	Actual radial acceleration force at the gear unit output in the first time segment
$F_{2rad,acc,n*}$	N	Actual radial acceleration force at the gear unit output in the n-th time segment
$F_{2rad,eq*}$	N	Actual equivalent force at the gear unit output
$F_{2rad100}$	N	Permitted radial force at the gear unit output for $n_{2m*} \leq 100$ rpm
F_{2radN}	N	Permitted nominal radial force at the gear unit output
i	–	Gear ratio
$K_{mot,th}$	–	Factor for determining the thermal limit torque
l	mm	Length of the output shaft
L_{10h}	h	Bearing service life
M_{op}	Nm	Torque of motor at the operating point from the motor characteristic curve at n_{1m*}
$\|M_2\|$	Nm	Amount of torque on the output
$M_{2,1*} – M_{2,6*}$	Nm	Actual torque in the respective time segment (1 to 6)
$M_{2,n*}$	Nm	Actual torque in the n-th time segment
M_{2acc}	Nm	Maximum permitted acceleration torque on the gear unit output
M_{2acc*}	Nm	Actual acceleration torque on the gear unit output
M_{2eff*}	Nm	Actual effective torque on the gear unit output
M_{2eq*}	Nm	Equivalent torque present on the gear unit output
M_{2k100}	Nm	Permitted breakdown torque on the gear unit output for $n_{2m*} \leq 100$ rpm
M_{2kN}	Nm	Permitted nominal breakdown torque on the gear unit output
M_{2k*}	Nm	Actual breakdown torque on the gear unit output
$M_{2k,acc}$	Nm	Permitted acceleration breakdown torque on the gear unit output
$M_{2k,acc*}$	Nm	Actual acceleration breakdown torque on the gear unit output
$M_{2k,acc,1*}$	Nm	Actual acceleration breakdown torque on the gear unit output in the first time segment
$M_{2k,acc,n*}$	Nm	Actual acceleration breakdown torque on the gear unit output in the n-th time segment
$M_{2k,eq*}$	Nm	Actual equivalent breakdown torque on the gear unit output
M_{2N}	Nm	Nominal torque on the gear unit output (relative to n_{1N})
M_{2NOT}	Nm	Gear unit emergency-off torque on the gear unit output for max. 1000 load changes
M_{2NOT*}	Nm	Actual emergency off torque for the gear unit on the gear unit output
M_{2th}	Nm	Thermal limit torque on the gear unit output

Formula symbol	Unit	Explanation
n_{1m*}	rpm	Actual average input speed
n_{1max*}	rpm	Actual maximum input speed
n_{1maxDB}	min^{-1}	Maximum permitted input speed of the gear unit in continuous operation
n_{1maxZB}	min^{-1}	Maximum permitted input speed of the gear unit in cyclic operation
$\|n_2\|$	rpm	Value of output speed
n_{2m*}	rpm	Actual average output speed
$n_{2m,1*} – n_{2m,6*}$	rpm	Actual average output speed in the respective time segment (1 to 6)
$n_{2m,n*}$	rpm	Actual average output speed in the n-th time segment
t	s	Time
$t_{1*} – t_{6*}$	s	Duration of the respective time segment (1 to 6)
t_{n*}	s	Duration of the n-th time segment
S	–	Load value: Quotient of gear unit and motor nominal torque without regard to the thermal performance limit. Represents a value for the reserve of the geared motor.
x_2	mm	Distance of the shaft shoulder to the force application point
y_2	mm	Distance of the shaft axis to the axial force application point
z_2	mm	Distance of the shaft shoulder to the middle of the output bearing

2.6.1 Calculation of the operating point

Check the following conditions for operating points other than the nominal point M_{2N} specified in the selection tables.

$$n_{1m*} \leq \frac{n_{1maxDB}}{fB_T}$$

$$n_{1max*} \leq \frac{n_{1maxZB}}{fB_T}$$

$$M_{2eff*} \leq M_{2th}$$

$$M_{2acc*} \leq M_{2acc}$$

$$M_{2NOT*} \leq M_{2NOT}$$

$$M_{2eq*} \leq M_{2N} \cdot \frac{S}{fB_{op} \cdot fB_t}$$

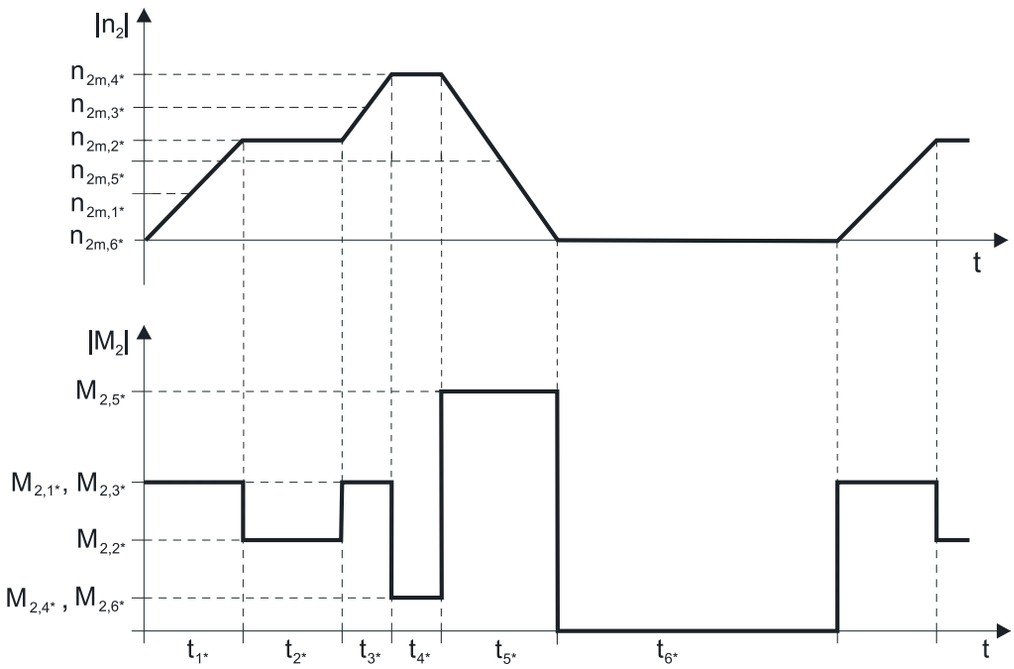
The values for n_{1maxDB}, n_{1maxZB}, M_{2acc}, M_{2NOT}, M_{2N} and S can be found in the selection tables.

The values for fB_T, fB_{op} and fB_t can be found in the corresponding tables in this chapter.

Calculate the thermal limit torque M_{2th} for a duty cycle > 50%.

Example of cycle sequence

The following calculations are based on a representation of the power taken from the output based in accordance with the following example:



Calculation of the actual average input speed

$$n_{1m^*} = n_{2m^*} \cdot i$$

$$n_{2m^*} = \frac{\left|n_{2m,1^*}\right| \cdot t_{1^*} + \ldots + \left|n_{2m,n^*}\right| \cdot t_{n^*}}{t_{1^*} + \ldots + t_{n^*}}$$

If $t_{1^*} + \ldots + t_{5^*} \geq 20$ min, calculate n_{2m^*} without the rest phase t_{6^*}.

The values for the ratio i can be found in the selection tables.

Calculation of the actual effective torque

$$M_{2eff^*} = \sqrt{\frac{t_{1^*} \cdot {M_{2,1^*}}^2 + \ldots + t_{n^*} \cdot {M_{2,n^*}}^2}{t_{1^*} + \ldots + t_{n^*}}}$$

Calculation of the actual equivalent torque

$$M_{2eq^*} = \sqrt[3]{\frac{\left|n_{2m,1^*}\right| \cdot t_{1^*} \cdot \left|{M_{2,1^*}}^3\right| + \ldots + \left|n_{2m,n^*}\right| \cdot t_{n^*} \cdot \left|{M_{2,n^*}}^3\right|}{\left|n_{2m,1^*}\right| \cdot t_{1^*} + \ldots + \left|n_{2m,n^*}\right| \cdot t_{n^*}}}$$

Calculation of the thermal limit torque

Calculate the thermal limit torque M_{2th} for a duty cycle ED > 50% and the actual average input speed n_{1m^*}. (At $K_{mot,th} \leq 0$ you must reduce the average input speed n_{1m^*} accordingly or select another geared motor size.)

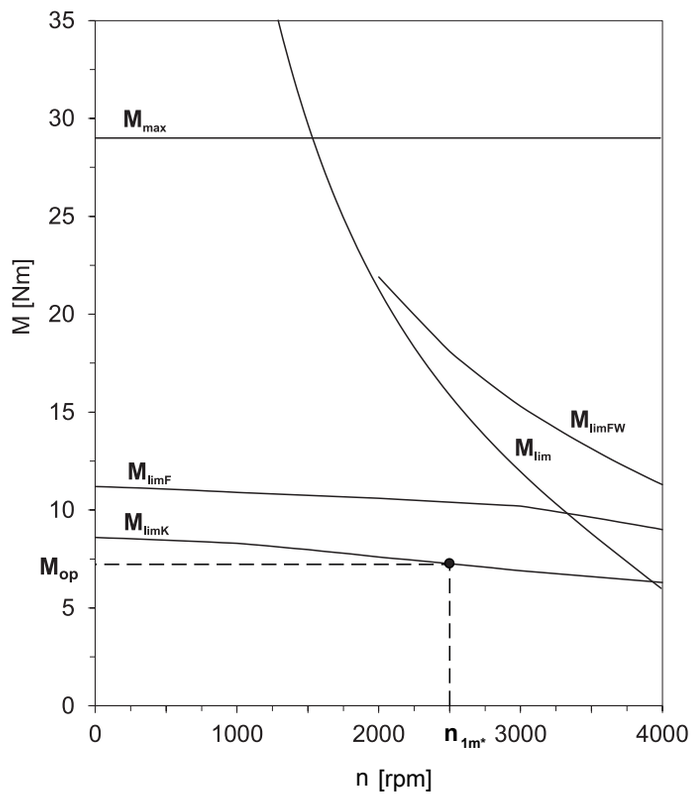
$$M_{2th} = M_{op} \cdot i \cdot K_{mot,th}$$

$$K_{mot,th} = 0{,}95 - \frac{a_{th}}{1000} \cdot fB_T \cdot \left(\frac{n_{1m^*}}{1000}\right)^3$$

The values for i and a_{th} can be found in the selection tables.

The values for fB_T can be found in the corresponding table in this chapter.

The value for the torque of the motor at operating point M_{op} with the determined average input speed n_{1m*} can be found in the motor curve of Chapter [▷ 22.3]. Note the size, nominal speed n_N and cooling type of the motor. The figure below shows an example of reading the torque M_{op} of a motor with convection cooling at the operating point.



Operating factors

Operating mode	fB_{op}
Uniform continuous operation	1.00
Cyclic operation	1.00
Reversing load cyclic operation	1.00

Run time	fB_t
Daily run time ≤ 8 h	1.00
Daily run time ≤ 16 h	1.15
Daily run time ≤ 24 h	1.20

Temperature		fB_T
Motor cooling	**Surrounding temperature**	
Motor with forced ventilation	≤ 20 °C ≤ 30 °C ≤ 40 °C	0.9 1.0 1.15
Motor with convection cooling	≤ 20 °C ≤ 30 °C ≤ 40 °C	1.0 1.1 1.25

Notes

- The maximum permitted gear unit temperature (see the "Other product features" chapter) must not be exceeded. Doing so may result in damage to the geared motor.
- For braking from full speed (for example when the power fails or when setting up the machine), note the permitted gear unit torques (M_{2acc}, M_{2NOT}) in the selection tables.
- The values specified in the selection tables for M_{2acc} refer to the gear units with a solid shaft design without feather key (G). We recommend this shaft design in general for cyclic operation.

2.6.2 Permitted shaft loads for the output shaft

The values specified in the tables apply to the permitted shaft loads:

- For shaft dimensions in accordance with the catalog
- For output speeds $n_{2m} \leq 100$ rpm ($F^{2axN} = F_{2ax100}$; $F_{2radN} = F_{2rad100}$; $M_{2kN} = M_{2k100}$)
- Only if transverse forces on the gear unit are supported via its pilots (housing, flange shaft)

Permitted shaft loads for standard bearing R

Type	z_2 [mm]	F_{2ax100} [N]	$F_{2rad100}$ [N]	$F_{2rad,acc}$ [N]	M_{2k100} [Nm]	$M_{2k,acc}$ [Nm]
P2	17.0	500	1200	1300	34	36
P3	21.0	1000	2500	2500	88	88
P4	22.0	1500	4000	4500	160	180
P5	23.0	2300	6500	7000	338	364
P7	26.0	2900	8000	9000	536	603
P8	28.0	4700	13000	18000	897	1242
P9	40.0	6000	18000	27000	1665	2498

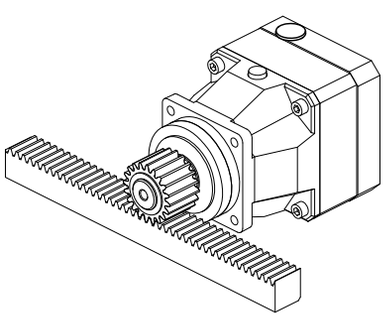


Fig. 1: Recommendation for bearing assignment R

Permitted shaft loads for axially reinforced bearing D

Type	z_2 [mm]	F_{2ax100} [N]	$F_{2rad100}$ [N]	$F_{2rad,acc}$ [N]	M_{2k100} [Nm]	$M_{2k,acc}$ [Nm]
P3	24.0	1400	2750	2750	105	105
P4	25.0	2250	4500	5000	194	215
P5	29.0	3500	7000	8000	406	464
P7	31.0	4500	9000	10000	648	720
P8	35.0	7500	15000	18000	1140	1368
P9	51.0	10000	20000	30000	2070	3105

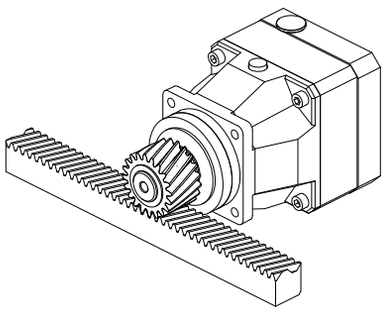


Fig. 2: Recommendation for bearing assignment D

Permitted shaft loads for radially reinforced bearing Z

Type	z_2 [mm]	F_{2ax100} [N]	$F_{2rad100}$ [N]	$F_{2rad,acc}$ [N]	M_{2k100} [Nm]	$M_{2k,acc}$ [Nm]
P3	21.0	600	3000	3000	105	105
P4	22.0	1000	5000	5000	200	200
P5	23.0	1600	8000	8000	416	416
P7	26.0	2000	10000	10000	670	670
P8	28.0	3600	18000	18000	1242	1242
P9	40.0	5000	27000	35000	2500	3238

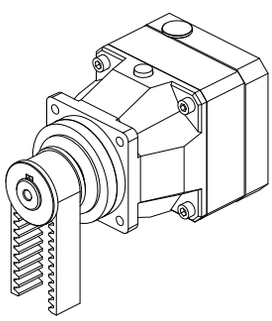


Fig. 3: Recommendation for bearing assignment Z

For other output speeds, download diagrams at http://products.stoeber.de.

The following applies to output speeds n_{2m*} > 100 rpm:

$$F_{2axN} = \frac{F_{2ax100}}{\sqrt[3]{\frac{n_{2m*}}{100\ rpm}}} \qquad F_{2radN} = \frac{F_{2rad100}}{\sqrt[3]{\frac{n_{2m*}}{100\ rpm}}} \qquad M_{2kN} = \frac{M_{2k100}}{\sqrt[3]{\frac{n_{2m*}}{100\ rpm}}}$$

The values for F_{2ax100}, $F_{2rad100}$ and M_{2k100} can be found in the table "Permitted shaft loads" in this chapter.

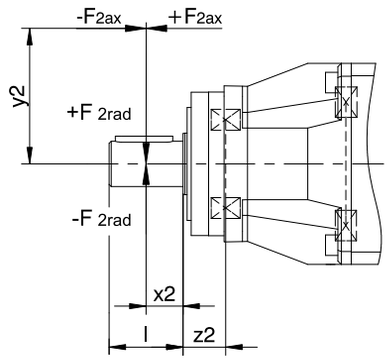


Fig. 4: Force application points

The specified values for $F_{2rad100}$ and $F_{2rad,acc}$ refer to an application of force at the center of the output shaft: $x_2 = l/2$.

Shaft dimensions can be found in the "Dimensional drawings" chapter.

The following applies to other force application points:

$$M_{2k,acc^*} = \frac{2 \cdot F_{2ax^*} \cdot y_2 + F_{2rad,acc^*} \cdot (x_2 + z_2)}{1000} \leq M_{2k,acc}$$

$$F_{2rad,acc^*} \leq F_{2rad,acc}$$

$$F_{2ax^*} \leq F_{2axN}$$

The values for $F_{2rad,acc}$ and $M_{2k,acc}$ can be found in the table "Permitted shaft loads" in this chapter.

For applications with multiple axial and/or radial forces, you must add the forces as vectors.

In the event of EMERGENCY OFF operation (max. 1000 load changes), you can multiply the permitted forces and torques for F_{2ax100}, $F_{2rad100}$ and M_{2k100} by a factor of two.

Also note the calculation for equivalent values:

$$M_{2k,eq^*} = \sqrt[3]{\frac{|n_{2m,1^*}| \cdot t_{1^*} \cdot |M_{2k,acc,1^*}{}^3| + \ldots + |n_{2m,n^*}| \cdot t_{n^*} \cdot |M_{2k,acc,n^*}{}^3|}{|n_{2m,1^*}| \cdot t_{1^*} + \ldots + |n_{2m,n^*}| \cdot t_{n^*}}} \leq M_{2kN}$$

$$F_{2rad,eq^*} = \sqrt[3]{\frac{|n_{2m,1^*}| \cdot t_{1^*} \cdot |F_{2rad,acc,1^*}{}^3| + \ldots + |n_{2m,n^*}| \cdot t_{n^*} \cdot |F_{2rad,acc,n^*}{}^3|}{|n_{2m,1^*}| \cdot t_{1^*} + \ldots + |n_{2m,n^*}| \cdot t_{n^*}}} \leq F_{2radN}$$

The following apply to the bearing service life L_{10h} (duty cycle ≤ 40%):

$L_{10h} > 10000$ h with $1 < M_{2kN}/M_{2k^*} < 1.25$

$L_{10h} > 20000$ h with $1.25 < M_{2kN}/M_{2k^*} < 1.5$

$L_{10h} > 30000$ h with $1.5 < M_{2kN}/M_{2k^*}$

For different duty cycles:

$$L_{10h} > L_{10h(ED=40\%)} \cdot \frac{40\%}{ED}$$

2.6.3 Recommendation for radial shaft seal rings

For a duty cycle > 60%, we recommend radial shaft seal rings made of FKM.

Properties:

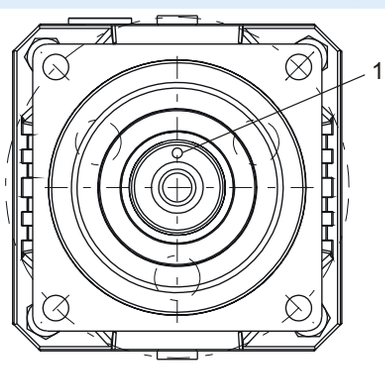
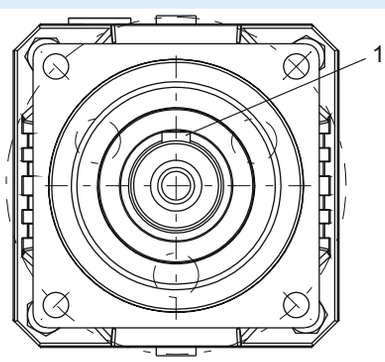
- Excellent temperature resistance
- High chemical stability
- Very good resistance to aging
- Excellent resistance to mineral oils and greases
- For use in the food, beverage and pharmaceutical industries

Leak-proofness

Our gear units are equipped with high-quality radial shaft seal rings and checked for leak-proofness. However, a leak cannot be fully ruled out over the length of use of the gear unit. If you use the gear unit with goods incompatible with the lubricant, you must take measures to prevent direct contact with the gear unit lubricant in case of a leak.

2.6.4 Reverse operation

To ensure lubrication of circulating geared parts during cyclic reverse operation from ± 20° to ± 90°, pay careful attention to the position of the output shaft if the gear unit is installed horizontally as shown in the images below. The images show the center position of reverse operation. Cyclic reverse operation ≤ ± 20° on request.

Solid shaft without feather key	Solid shaft with feather key
	
1) Position of the mark: top	1) Position of the feather key: top

Notes

- If you use the solid shaft without a feather key (G) with a mark, note the position of the mark during assembly.
- As an alternative, you can use the solid shaft with a feather key (P) and clamp. In that case, the feather key functions for position orientation.

2.7 Additional documentation

Additional documentation related to the product can be found at http://www.stoeber.de/en/download

Enter the ID of the documentation in the Search... field.

Documentation	ID
Operating manual for planetary gear units and motors	441957
Lubricant filling quantities for gear units	441871