14.1 Overview

Helical-geared precision right-angle planetary geared motors

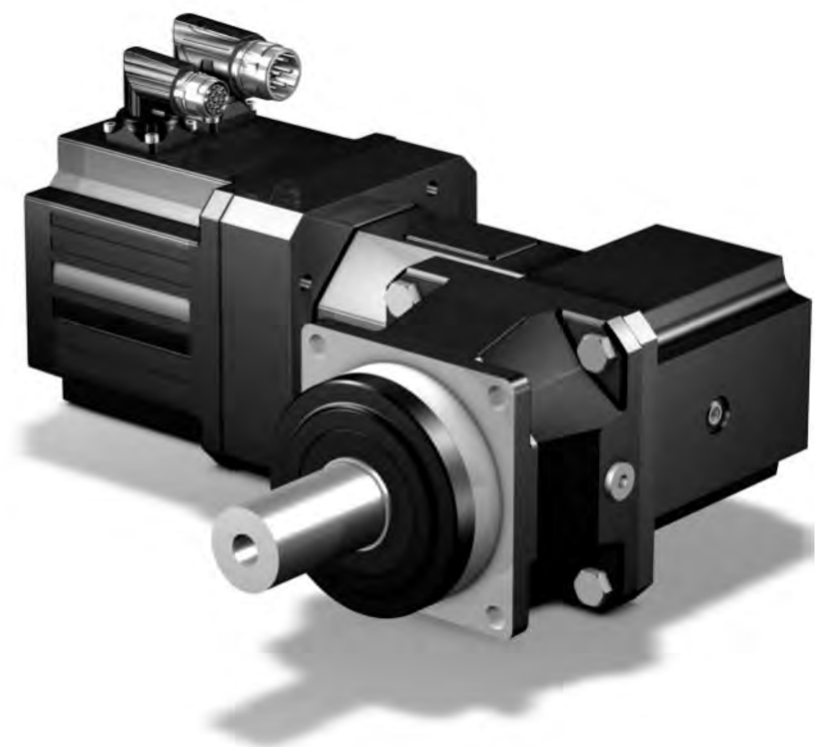
Technical data

i	3 – 210
M_{2acc}	11 – 3000 Nm
$\Delta\varphi_2$	4 – 8.5 arcmin
η	≤ 94 – 96 %

Features

Power density	★★★★☆
Backlash	★★★★☆
Price category	€€€
Shaft load	★★★★☆
Smooth operation	★★☆☆☆
Torsional stiffness	★★★☆☆
Mass moment of inertia	★★★☆☆
Helical gearing	✓
Maintenance-free	✓
Small installation space	✓
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



PKX

14.2 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
$n_{1maxDBEL1,2,5,6}$	rpm	Maximum permitted input speed of the gear unit in continuous operation Installation positions EL1, EL2, EL5, EL6
		(at surrounding temperature of 20 °C)
$n_{1maxDBEL3,4}$	rpm	Maximum permitted input speed of the gear unit in continuous operation Installation positions EL3, EL4
		(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.

STOBER

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P2KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 22 Nm)																
200	13	14	35	1.2	P221_0050 KX301VF0030 MF EZ301U	22	44	15.00	15/1	3500	3500	6000	0.94	8	1.6	4.8
214	12	13	44	1.3	P221_0070 KX301VF0020 MF EZ301U	22	44	14.00	14/1	3500	3000	5500	1.0	7.5	1.7	4.8
250	11	11	28	1.5	P221_0040 KX301VF0030 MF EZ301U	22	44	12.00	12/1	3500	3500	6000	0.94	8.5	1.5	4.8
300	8.9	9.1	32	1.8	P221_0050 KX301VF0020 MF EZ301U	22	44	10.00	10/1	3500	3000	5500	1.0	8	1.6	4.8
300	15	16	54	1.1	P221_0050 KX301VF0020 MF EZ302U	22	44	10.00	10/1	3500	3000	5500	1.1	8	1.6	5.4
375	7.1	7.3	25	2.3	P221_0040 KX301VF0020 MF EZ301U	21	44	8.000	8/1	3500	3000	5500	1.0	8.5	1.5	4.8
375	12	13	43	1.3	P221_0040 KX301VF0020 MF EZ302U	22	44	8.000	8/1	3500	3000	5500	1.1	8.5	1.5	5.4
375	16	17	56	1.0	P221_0040 KX301VF0020 MF EZ303U	22	44	8.000	8/1	3500	3000	5500	1.2	8.5	1.5	5.9
429	6.2	6.4	43	2.2	P221_0070 KX301VF0010 MF EZ301U	19	44	7.000	7/1	3000	2500	4500	1.2	7.5	1.7	4.8
429	11	11	73	1.3	P221_0070 KX301VF0010 MF EZ302U	22	44	7.000	7/1	3000	2500	4500	1.3	7.5	1.7	5.4
429	14	15	95	1.0	P221_0070 KX301VF0010 MF EZ303U	22	44	7.000	7/1	3000	2500	4500	1.4	7.5	1.7	5.9
600	4.4	4.5	31	3.1	P221_0050 KX301VF0010 MF EZ301U	13	44	5.000	5/1	3000	2500	4500	1.2	8	1.6	4.8
600	7.6	8.0	52	1.8	P221_0050 KX301VF0010 MF EZ302U	22	44	5.000	5/1	3000	2500	4500	1.3	8	1.6	5.4
600	9.9	10	68	1.4	P221_0050 KX301VF0010 MF EZ303U	22	44	5.000	5/1	3000	2500	4500	1.4	8	1.6	5.9
600	13	14	92	1.0	P221_0050 KX301VF0010 MF EZ401U	22	44	5.000	5/1	3000	2500	4500	2.0	8	1.6	7.3
750	3.6	3.6	24	3.9	P221_0040 KX301VF0010 MF EZ301U	11	44	4.000	4/1	3000	2500	4500	1.2	8.5	1.5	4.8
750	6.1	6.4	42	2.3	P221_0040 KX301VF0010 MF EZ302U	19	44	4.000	4/1	3000	2500	4500	1.3	8.5	1.5	5.4
750	7.9	8.4	54	1.8	P221_0040 KX301VF0010 MF EZ303U	22	44	4.000	4/1	3000	2500	4500	1.5	8.5	1.5	5.9
750	11	11	74	1.3	P221_0040 KX301VF0010 MF EZ401U	22	44	4.000	4/1	3000	2500	4500	2.0	8.5	1.5	7.3
P2KX (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 22 Nm)																
400	13	14	34	1.3	P221_0050 KX301VF0030 MF EZ301U	22	44	15.00	15/1	3500	3500	6000	0.94	8	1.6	4.8
500	10	11	27	1.6	P221_0040 KX301VF0030 MF EZ301U	22	44	12.00	12/1	3500	3500	6000	0.94	8.5	1.5	4.8
P3KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 65 Nm)																
60	44	44	55	1.0	P322_0250 KX301VF0020 MF EZ301U	65	130	50.00	50/1	3500	3000	5500	1.0	5.5	4.5	6.1
75	35	36	44	1.3	P322_0200 KX301VF0020 MF EZ301U	65	130	40.00	40/1	3500	3000	5500	1.0	5.5	4.5	6.1
86	30	31	65	1.5	P322_0350 KX301VF0010 MF EZ301U	65	130	35.00	35/1	3000	2500	4500	1.2	5.5	4.5	6.1
94	28	28	35	1.6	P322_0160 KX301VF0020 MF EZ301U	65	130	32.00	32/1	3500	3000	5500	1.0	5.5	4.4	6.1
100	27	27	37	1.1	P321_0100 KX301VF0030 MF EZ301U	50	100	30.00	30/1	3500	3500	6000	0.94	5	3.7	5.5
125	21	22	22	1.9	P321_0080 KX301VF0030 MF EZ301U	50	100	24.00	24/1	3500	3500	6000	0.94	5.5	3.7	5.5
125	36	39	38	1.1	P321_0080 KX301VF0030 MF EZ302U	50	100	24.00	24/1	3500	3500	6000	1.0	5.5	3.7	6.1
143	19	19	17	2.4	P321_0070 KX301VF0030 MF EZ301U	56	130	21.00	21/1	3500	3500	6000	0.94	5.5	3.7	5.5
143	32	34	30	1.4	P321_0070 KX301VF0030 MF EZ302U	60	130	21.00	21/1	3500	3500	6000	1.0	5.5	3.7	6.1
143	42	44	39	1.1	P321_0070 KX301VF0030 MF EZ303U	60	130	21.00	21/1	3500	3500	6000	1.1	5.5	3.7	6.6
150	18	18	34	1.7	P321_0100 KX301VF0020 MF EZ301U	50	100	20.00	20/1	3500	3000	5500	1.0	5	3.7	5.5
188	14	15	20	2.8	P321_0080 KX301VF0020 MF EZ301U	43	100	16.00	16/1	3500	3000	5500	1.0	5.5	3.7	5.5
188	24	26	35	1.6	P321_0080 KX301VF0020 MF EZ302U	50	100	16.00	16/1	3500	3000	5500	1.1	5.5	3.7	6.1
188	32	33	45	1.3	P321_0080 KX301VF0020 MF EZ303U	50	100	16.00	16/1	3500	3000	5500	1.2	5.5	3.7	6.6
200	13	14	13	3.2	P321_0050 KX301VF0030 MF EZ301U	40	130	15.00	15/1	3500	3500	6000	0.94	6	3.6	5.5
200	23	24	23	1.9	P321_0050 KX301VF0030 MF EZ302U	63	130	15.00	15/1	3500	3500	6000	1.0	6	3.6	6.1
200	30	31	29	1.4	P321_0050 KX301VF0030 MF EZ303U	63	130	15.00	15/1	3500	3500	6000	1.2	6	3.6	6.6
200	40	43	40	1.1	P321_0050 KX301VF0030 MF EZ401U	63	130	15.00	15/1	3500	3500	6000	1.7	6	3.6	8.0
214	12	13	16	3.6	P321_0070 KX301VF0020 MF EZ301U	37	130	14.00	14/1	3500	3000	5500	1.0	5.5	3.7	5.5
214	21	22	27	2.1	P321_0070 KX301VF0020 MF EZ302U	60	130	14.00	14/1	3500	3000	5500	1.1	5.5	3.7	6.1
214	28	29	35	1.6	P321_0070 KX301VF0020 MF EZ303U	60	130	14.00	14/1	3500	3000	5500	1.2	5.5	3.7	6.6
214	37	40	48	1.2	P321_0070 KX301VF0020 MF EZ401U	60	130	14.00	14/1	3500	3000	5500	1.7	5.5	3.7	8.0
250	11	11	13	3.2	P321_0040 KX301VF0030 MF EZ301U	32	100	12.00	12/1	3500	3500	6000	0.95	6.5	3.2	5.5
250	18	19	23	1.9	P321_0040 KX301VF0030 MF EZ302U	50	100	12.00	12/1	3500	3500	6000	1.0	6.5	3.2	6.1
250	24	25	29	1.4	P321_0040 KX301VF0030 MF EZ303U	50	100	12.00	12/1	3500	3500	6000	1.2	6.5	3.2	6.6
250	32	34	40	1.1	P321_0040 KX301VF0030 MF EZ401U	50	100	12.00	12/1	3500	3500	6000	1.7	6.5	3.2	8.0
300	8.9	9.1	12	4.8	P321_0050 KX301VF0020 MF EZ301U	27	130	10.00	10/1	3500	3000	5500	1.0	6	3.6	5.5
300	15	16	20	2.8	P321_0050 KX301VF0020 MF EZ302U	48	130	10.00	10/1	3500	3000	5500	1.1	6	3.6	6.1
300	20	21	27	2.1	P321_0050 KX301VF0020 MF EZ303U	63	130	10.00	10/1	3500	3000	5500	1.2	6	3.6	6.6
300	27	29	36	1.6	P321_0050 KX301VF0020 MF EZ401U	63	130	10.00	10/1	3500	3000	5500	1.8	6	3.6	8.0
375	7.1	7.3	12	4.8	P321_0040 KX301VF0020 MF EZ301U	21	100	8.000	8/1	3500	3000	5500	1.0	6.5	3.2	5.5
375	12	13	20	2.8	P321_0040 KX301VF0020 MF EZ302U	38	100	8.000	8/1	3500	3000	5500	1.1	6.5	3.2	6.1
375	16	17	27	2.1	P321_0040 KX301VF0020 MF EZ303U	50	100	8.000	8/1	3500	3000	5500	1.2	6.5	3.2	6.6
375	21	23	36	1.6	P321_0040 KX301VF0020 MF EZ401U	50	100	8.000	8/1	3500	3000	5500	1.8	6.5	3.2	8.0
429	11	11	26	3.7	P321_0070 KX301VF0010 MF EZ302U	33	130	7.000	7/1	3000	2500	4500	1.3	5.5	3.7	6.1
429	14	15	34	2.8	P321_0070 KX301VF0010 MF EZ303U	47	130	7.000	7/1	3000	2500	4500	1.4	5.5	3.7	6.6

PKX

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P3KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 65 Nm)																
429	19	20	46	2.1	P321_0070 KX301VF0010 MF EZ401U	57	130	7.000	7/1	3000	2500	4500	2.0	5.5	3.7	8.0
429	31	35	77	1.3	P321_0070 KX301VF0010 MF EZ402U	60	130	7.000	7/1	3000	2500	4500	2.7	5.5	3.7	9.1
500	5.3	5.4	12	4.8	P321_0030 KX301VF0020 MF EZ301U	16	77	6.000	6/1	3500	3000	5500	1.0	7.5	2.5	5.5
500	9.1	9.6	20	2.8	P321_0030 KX301VF0020 MF EZ302U	29	77	6.000	6/1	3500	3000	5500	1.1	7.5	2.5	6.1
500	12	13	27	2.1	P321_0030 KX301VF0020 MF EZ303U	38	77	6.000	6/1	3500	3000	5500	1.3	7.5	2.5	6.6
500	16	17	36	1.6	P321_0030 KX301VF0020 MF EZ401U	38	77	6.000	6/1	3500	3000	5500	1.8	7.5	2.5	8.0
600	9.9	10	24	4.0	P321_0050 KX301VF0010 MF EZ303U	33	110	5.000	5/1	3000	2500	4500	1.5	6	3.6	6.6
600	13	14	33	2.9	P321_0050 KX301VF0010 MF EZ401U	41	110	5.000	5/1	3000	2500	4500	2.0	6	3.6	8.0
600	22	25	55	1.8	P321_0050 KX301VF0010 MF EZ402U	63	110	5.000	5/1	3000	2500	4500	2.7	6	3.6	9.1
600	33	41	80	1.2	P321_0050 KX301VF0010 MF EZ404U	63	110	5.000	5/1	3000	2500	4500	4.1	6	3.6	11
750	7.9	8.4	22	4.3	P321_0040 KX301VF0010 MF EZ303U	27	91	4.000	4/1	3000	2500	4500	1.5	6.5	3.2	6.6
750	11	11	30	3.2	P321_0040 KX301VF0010 MF EZ401U	32	91	4.000	4/1	3000	2500	4500	2.1	6.5	3.2	8.0
750	18	20	51	1.9	P321_0040 KX301VF0010 MF EZ402U	50	91	4.000	4/1	3000	2500	4500	2.8	6.5	3.2	9.1
750	26	33	75	1.3	P321_0040 KX301VF0010 MF EZ404U	50	91	4.000	4/1	3000	2500	4500	4.1	6.5	3.2	11
1000	5.9	6.3	22	4.3	P321_0030 KX301VF0010 MF EZ303U	20	68	3.000	3/1	3000	2500	4500	1.6	7.5	2.5	6.6
1000	8.0	8.6	30	3.2	P321_0030 KX301VF0010 MF EZ401U	24	68	3.000	3/1	3000	2500	4500	2.1	7.5	2.5	8.0
1000	13	15	51	1.9	P321_0030 KX301VF0010 MF EZ402U	38	68	3.000	3/1	3000	2500	4500	2.8	7.5	2.5	9.1
1000	20	25	75	1.3	P321_0030 KX301VF0010 MF EZ404U	38	68	3.000	3/1	3000	2500	4500	4.2	7.5	2.5	11
P3KX (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 63 Nm)																
200	26	27	36	1.2	P321_0100 KX301VF0030 MF EZ301U	50	100	30.00	30/1	3500	3500	6000	0.94	5	3.7	5.5
250	20	22	21	2.0	P321_0080 KX301VF0030 MF EZ301U	50	100	24.00	24/1	3500	3500	6000	0.94	5.5	3.7	5.5
250	34	39	36	1.2	P321_0080 KX301VF0030 MF EZ302U	50	100	24.00	24/1	3500	3500	6000	1.0	5.5	3.7	6.1
286	18	19	17	2.5	P321_0070 KX301VF0030 MF EZ301U	56	130	21.00	21/1	3500	3500	6000	0.94	5.5	3.7	5.5
286	30	34	28	1.5	P321_0070 KX301VF0030 MF EZ302U	60	130	21.00	21/1	3500	3500	6000	1.0	5.5	3.7	6.1
286	39	45	37	1.1	P321_0070 KX301VF0030 MF EZ303U	60	130	21.00	21/1	3500	3500	6000	1.1	5.5	3.7	6.6
400	13	14	16	2.6	P321_0050 KX301VF0030 MF EZ301U	40	130	15.00	15/1	3500	3500	6000	0.94	6	3.6	5.5
400	21	24	27	1.6	P321_0050 KX301VF0030 MF EZ302U	63	130	15.00	15/1	3500	3500	6000	1.0	6	3.6	6.1
400	28	32	35	1.2	P321_0050 KX301VF0030 MF EZ303U	63	130	15.00	15/1	3500	3500	6000	1.2	6	3.6	6.6
400	33	40	41	1.0	P321_0050 KX301VF0030 MF EZ401U	63	130	15.00	15/1	3500	3500	6000	1.7	6	3.6	8.0
500	10	11	16	2.6	P321_0040 KX301VF0030 MF EZ301U	32	100	12.00	12/1	3500	3500	6000	0.95	6.5	3.2	5.5
500	17	19	27	1.6	P321_0040 KX301VF0030 MF EZ302U	50	100	12.00	12/1	3500	3500	6000	1.0	6.5	3.2	6.1
500	22	26	35	1.2	P321_0040 KX301VF0030 MF EZ303U	50	100	12.00	12/1	3500	3500	6000	1.2	6.5	3.2	6.6
500	26	32	41	1.0	P321_0040 KX301VF0030 MF EZ401U	50	100	12.00	12/1	3500	3500	6000	1.7	6.5	3.2	8.0
P4KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 120 Nm)																
36	73	75	36	1.2	P422_0280 KX301VF0030 MF EZ301U	120	240	84.00	84/1	3500	3500	6000	0.94	5.5	10	8.5
38	70	71	47	1.2	P422_0400 KX301VF0020 MF EZ301U	120	240	80.00	80/1	3500	3000	5500	1.0	5.5	10	8.5
40	65	67	32	1.3	P422_0250 KX301VF0030 MF EZ301U	120	240	75.00	75/1	3500	3500	6000	0.94	5.5	10	8.5
43	61	62	41	1.4	P422_0350 KX301VF0020 MF EZ301U	120	240	70.00	70/1	3500	3000	5500	1.0	5.5	10	8.5
47	56	57	40	1.4	P422_0320 KX301VF0020 MF EZ301U	100	200	64.00	64/1	3500	3000	5500	1.0	5.5	9.1	8.5
50	52	53	26	1.6	P422_0200 KX301VF0030 MF EZ301U	120	240	60.00	60/1	3500	3500	6000	0.95	5.5	10	8.5
54	49	50	33	1.7	P422_0280 KX301VF0020 MF EZ301U	120	240	56.00	56/1	3500	3000	5500	1.0	5.5	10	8.5
54	83	88	56	1.0	P422_0280 KX301VF0020 MF EZ302U	120	240	56.00	56/1	3500	3000	5500	1.1	5.5	10	9.1
60	44	44	29	2.0	P422_0250 KX301VF0020 MF EZ301U	120	240	50.00	50/1	3500	3000	5500	1.0	5.5	10	8.5
60	74	79	50	1.1	P422_0250 KX301VF0020 MF EZ302U	120	240	50.00	50/1	3500	3000	5500	1.1	5.5	10	9.1
75	35	36	23	2.4	P422_0200 KX301VF0020 MF EZ301U	100	240	40.00	40/1	3500	3000	5500	1.0	5.5	10	8.5
75	60	63	40	1.4	P422_0200 KX301VF0020 MF EZ302U	120	240	40.00	40/1	3500	3000	5500	1.1	5.5	10	9.1
75	77	82	52	1.1	P422_0200 KX301VF0020 MF EZ303U	120	240	40.00	40/1	3500	3000	5500	1.2	5.5	10	9.6
86	30	31	34	2.8	P422_0350 KX301VF0010 MF EZ301U	92	240	35.00	35/1	3000	2500	4500	1.2	5.5	10	8.5
86	52	55	59	1.6	P422_0350 KX301VF0010 MF EZ302U	120	240	35.00	35/1	3000	2500	4500	1.3	5.5	10	9.1
86	68	72	77	1.3	P422_0350 KX301VF0010 MF EZ303U	120	240	35.00	35/1	3000	2500	4500	1.4	5.5	10	9.6
94	28	28	19	3.1	P422_0160 KX301VF0020 MF EZ301U	84	240	32.00	32/1	3500	3000	5500	1.0	5.5	9.7	8.5
94	48	50	32	1.8	P422_0160 KX301VF0020 MF EZ302U	120	240	32.00	32/1	3500	3000	5500	1.1	5.5	9.7	9.1
94	62	66	42	1.4	P422_0160 KX301VF0020 MF EZ303U	120	240	32.00	32/1	3500	3000	5500	1.2	5.5	9.7	9.6
94	84	90	56	1.0	P422_0160 KX301VF0020 MF EZ401U	120	240	32.00	32/1	3500	3000	5500	1.8	5.5	9.7	11
100	27	27	21	2.3	P421_0100 KX401VF0030 MF EZ301U	80	200	30.00	30/1	3000	3000	5500	1.6	5	8.3	8.3
100	46	48	36	1.3	P421_0100 KX401VF0030 MF EZ302U	100	200	30.00	30/1	3000	3000	5500	1.7	5	8.3	8.9
100	59	63	47	1.0	P421_0100 KX401VF0030 MF EZ303U	100	200	30.00	30/1	3000	3000	5500	1.8	5	8.3	9.4
125	21	22	13	3.8	P421_0080 KX401VF0030 MF EZ301U	64	200	24.00	24/1	3000	3000	5500	1.6	5.5	8.3	8.3
125	36	39	22	2.2	P421_0080 KX401VF0030 MF EZ302U	100	200	24.00	24/1	3000	3000	5500	1.7	5.5	8.3	8.9

STOBER

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/arcmin]	m [kg]
P4KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 120 Nm)																
125	47	50	28	1.7	P421_0080 KX401VF0030 MF EZ303U	100	200	24.00	24/1	3000	3000	5500	1.8	5.5	8.3	9.4
125	64	69	38	1.2	P421_0080 KX401VF0030 MF EZ401U	100	200	24.00	24/1	3000	3000	5500	2.4	5.5	8.3	11
143	19	19	10	4.6	P421_0070 KX401VF0030 MF EZ301U	56	240	21.00	21/1	3000	3000	5500	1.6	5.5	8.4	8.3
143	32	34	18	2.7	P421_0070 KX401VF0030 MF EZ302U	100	240	21.00	21/1	3000	3000	5500	1.7	5.5	8.4	8.9
143	42	44	23	2.0	P421_0070 KX401VF0030 MF EZ303U	110	240	21.00	21/1	3000	3000	5500	1.8	5.5	8.4	9.4
143	56	60	31	1.5	P421_0070 KX401VF0030 MF EZ401U	110	240	21.00	21/1	3000	3000	5500	2.4	5.5	8.4	11
150	18	18	19	3.4	P421_0100 KX401VF0020 MF EZ301U	54	200	20.00	20/1	2500	2500	5000	1.8	5	8.3	8.3
150	30	32	33	2.0	P421_0100 KX401VF0020 MF EZ302U	96	200	20.00	20/1	2500	2500	5000	1.9	5	8.3	8.9
150	40	42	42	1.5	P421_0100 KX401VF0020 MF EZ303U	100	200	20.00	20/1	2500	2500	5000	2.0	5	8.3	9.4
150	54	57	57	1.1	P421_0100 KX401VF0020 MF EZ401U	100	200	20.00	20/1	2500	2500	5000	2.6	5	8.3	11
188	24	26	20	3.3	P421_0080 KX401VF0020 MF EZ302U	76	200	16.00	16/1	2500	2500	5000	1.9	5.5	8.3	8.9
188	32	33	25	2.5	P421_0080 KX401VF0020 MF EZ303U	100	200	16.00	16/1	2500	2500	5000	2.0	5.5	8.3	9.4
188	43	46	34	1.9	P421_0080 KX401VF0020 MF EZ401U	100	200	16.00	16/1	2500	2500	5000	2.6	5.5	8.3	11
188	66	72	53	1.2	P421_0080 KX401VF0020 MF EZ501U	100	200	16.00	16/1	2500	2500	5000	4.5	5.5	8.3	12
200	23	24	13	3.7	P421_0050 KX401VF0030 MF EZ302U	72	240	15.00	15/1	3000	3000	5500	1.7	6	8.0	8.9
200	30	31	17	2.9	P421_0050 KX401VF0030 MF EZ303U	100	240	15.00	15/1	3000	3000	5500	1.9	6	8.0	9.4
200	40	43	22	2.1	P421_0050 KX401VF0030 MF EZ401U	120	240	15.00	15/1	3000	3000	5500	2.4	6	8.0	11
200	62	67	34	1.4	P421_0050 KX401VF0030 MF EZ501U	120	240	15.00	15/1	3000	3000	5500	4.4	6	8.0	12
200	67	75	38	1.3	P421_0050 KX401VF0030 MF EZ402U	120	240	15.00	15/1	3000	3000	5500	3.1	6	8.0	12
214	21	22	16	4.0	P421_0070 KX401VF0020 MF EZ302U	67	240	14.00	14/1	2500	2500	5000	1.9	5.5	8.4	8.9
214	28	29	21	3.1	P421_0070 KX401VF0020 MF EZ303U	94	240	14.00	14/1	2500	2500	5000	2.0	5.5	8.4	9.4
214	37	40	28	2.3	P421_0070 KX401VF0020 MF EZ401U	110	240	14.00	14/1	2500	2500	5000	2.6	5.5	8.4	11
214	58	63	43	1.5	P421_0070 KX401VF0020 MF EZ501U	110	240	14.00	14/1	2500	2500	5000	4.5	5.5	8.4	12
214	63	70	47	1.4	P421_0070 KX401VF0020 MF EZ402U	110	240	14.00	14/1	2500	2500	5000	3.3	5.5	8.4	12
250	18	19	13	3.7	P421_0040 KX401VF0030 MF EZ302U	57	210	12.00	12/1	3000	3000	5500	1.8	6.5	6.9	8.9
250	24	25	17	2.9	P421_0040 KX401VF0030 MF EZ303U	80	210	12.00	12/1	3000	3000	5500	1.9	6.5	6.9	9.4
250	32	34	22	2.1	P421_0040 KX401VF0030 MF EZ401U	97	210	12.00	12/1	3000	3000	5500	2.4	6.5	6.9	11
250	49	54	34	1.4	P421_0040 KX401VF0030 MF EZ501U	97	210	12.00	12/1	3000	3000	5500	4.4	6.5	6.9	12
250	54	60	38	1.3	P421_0040 KX401VF0030 MF EZ402U	97	210	12.00	12/1	3000	3000	5500	3.1	6.5	6.9	12
300	20	21	15	4.3	P421_0050 KX401VF0020 MF EZ303U	67	240	10.00	10/1	2500	2500	5000	2.1	6	8.0	9.4
300	27	29	20	3.2	P421_0050 KX401VF0020 MF EZ401U	81	240	10.00	10/1	2500	2500	5000	2.6	6	8.0	11
300	41	45	31	2.1	P421_0050 KX401VF0020 MF EZ501U	120	240	10.00	10/1	2500	2500	5000	4.6	6	8.0	12
300	45	50	34	1.9	P421_0050 KX401VF0020 MF EZ402U	120	240	10.00	10/1	2500	2500	5000	3.3	6	8.0	12
300	66	82	50	1.3	P421_0050 KX401VF0020 MF EZ404U	120	240	10.00	10/1	2500	2500	5000	4.6	6	8.0	14
300	71	76	54	1.2	P421_0050 KX401VF0020 MF EZ502U	120	240	10.00	10/1	2500	2500	5000	6.9	6	8.0	13
300	71	79	54	1.2	P421_0050 KX401VF0020 MF EZ701U	120	240	10.00	10/1	2500	2500	5000	10	6	8.0	15
375	16	17	15	4.3	P421_0040 KX401VF0020 MF EZ303U	54	210	8.000	8/1	2500	2500	5000	2.1	6.5	6.9	9.4
375	21	23	20	3.2	P421_0040 KX401VF0020 MF EZ401U	65	210	8.000	8/1	2500	2500	5000	2.6	6.5	6.9	11
375	33	36	31	2.1	P421_0040 KX401VF0020 MF EZ501U	97	210	8.000	8/1	2500	2500	5000	4.6	6.5	6.9	12
375	36	40	34	1.9	P421_0040 KX401VF0020 MF EZ402U	97	210	8.000	8/1	2500	2500	5000	3.3	6.5	6.9	12
375	53	66	50	1.3	P421_0040 KX401VF0020 MF EZ404U	97	210	8.000	8/1	2500	2500	5000	4.7	6.5	6.9	14
375	57	61	54	1.2	P421_0040 KX401VF0020 MF EZ502U	97	210	8.000	8/1	2500	2500	5000	6.9	6.5	6.9	13
375	57	63	54	1.2	P421_0040 KX401VF0020 MF EZ701U	97	210	8.000	8/1	2500	2500	5000	10	6.5	6.9	15
429	19	20	27	4.0	P421_0070 KX401VF0010 MF EZ401U	57	240	7.000	7/1	2500	2000	4000	3.4	5.5	8.4	11
429	29	31	42	2.6	P421_0070 KX401VF0010 MF EZ501U	110	240	7.000	7/1	2500	2000	4000	5.3	5.5	8.4	12
429	31	35	46	2.4	P421_0070 KX401VF0010 MF EZ402U	110	240	7.000	7/1	2500	2000	4000	4.1	5.5	8.4	12
429	46	58	67	1.6	P421_0070 KX401VF0010 MF EZ404U	110	240	7.000	7/1	2500	2000	4000	5.4	5.5	8.4	14
429	49	54	72	1.5	P421_0070 KX401VF0010 MF EZ502U	110	240	7.000	7/1	2500	2000	4000	7.6	5.5	8.4	13
429	49	56	72	1.5	P421_0070 KX401VF0010 MF EZ701U	110	240	7.000	7/1	2500	2000	4000	11	5.5	8.4	15
429	65	74	94	1.1	P421_0070 KX401VF0010 MF EZ503U	110	240	7.000	7/1	2500	2000	4000	10	5.5	8.4	15
500	12	13	15	4.2	P421_0030 KX401VF0020 MF EZ303U	40	150	6.000	6/1	2500	2500	5000	2.2	7.5	5.2	9.4
500	16	17	21	3.1	P421_0030 KX401VF0020 MF EZ401U	49	150	6.000	6/1	2500	2500	5000	2.7	7.5	5.2	11
500	25	27	32	2.0	P421_0030 KX401VF0020 MF EZ501U	73	150	6.000	6/1	2500	2500	5000	4.7	7.5	5.2	12
500	27	30	35	1.9	P421_0030 KX401VF0020 MF EZ402U	73	150	6.000	6/1	2500	2500	5000	3.4	7.5	5.2	12
500	40	49	51	1.3	P421_0030 KX401VF0020 MF EZ404U	73	150	6.000	6/1	2500	2500	5000	4.8	7.5	5.2	14
500	42	46	54	1.2	P421_0030 KX401VF0020 MF EZ502U	73	150	6.000	6/1	2500	2500	5000	7.0	7.5	5.2	13
500	42	48	54	1.2	P421_0030 KX401VF0020 MF EZ701U	73	150	6.000	6/1	2500	2500	5000	10	7.5	5.2	15
600	21	22	30	3.6	P421_0050 KX401VF0010 MF EZ501U	76	240	5.000	5/1	2500	2000	4000	5.4	6	8.0	12
600	22	25	33	3.3	P421_0050 KX401VF0010 MF EZ402U	76	240	5.000	5/1	2500	2000	4000	4.2	6	8.0	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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/arcmin]	m [kg]
P4KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 120 Nm)																
600	33	41	48	2.3	P421_0050 KX401VF0010 MF EZ404U	120	240	5.000	5/1	2500	2000	4000	5.5	6	8.0	14
600	35	38	51	2.1	P421_0050 KX401VF0010 MF EZ502U	120	240	5.000	5/1	2500	2000	4000	7.7	6	8.0	13
600	35	40	51	2.1	P421_0050 KX401VF0010 MF EZ701U	96	240	5.000	5/1	2500	2000	4000	11	6	8.0	15
600	46	53	67	1.6	P421_0050 KX401VF0010 MF EZ503U	120	240	5.000	5/1	2500	2000	4000	10	6	8.0	15
600	57	69	83	1.3	P421_0050 KX401VF0010 MF EZ702U	120	240	5.000	5/1	2500	2000	4000	16	6	8.0	18
600	64	76	94	1.2	P421_0050 KX401VF0010 MF EZ505U	120	240	5.000	5/1	2500	2000	4000	15	6	8.0	18
750	16	18	26	4.1	P421_0040 KX401VF0010 MF EZ501U	61	210	4.000	4/1	2500	2000	4000	5.6	6.5	6.9	12
750	18	20	29	3.8	P421_0040 KX401VF0010 MF EZ402U	61	210	4.000	4/1	2500	2000	4000	4.3	6.5	6.9	12
750	26	33	42	2.6	P421_0040 KX401VF0010 MF EZ404U	97	210	4.000	4/1	2500	2000	4000	5.6	6.5	6.9	14
750	28	31	45	2.4	P421_0040 KX401VF0010 MF EZ502U	97	210	4.000	4/1	2500	2000	4000	7.9	6.5	6.9	13
750	28	32	45	2.4	P421_0040 KX401VF0010 MF EZ701U	76	210	4.000	4/1	2500	2000	4000	11	6.5	6.9	15
750	37	42	59	1.8	P421_0040 KX401VF0010 MF EZ503U	97	210	4.000	4/1	2500	2000	4000	10	6.5	6.9	15
750	46	55	73	1.5	P421_0040 KX401VF0010 MF EZ702U	97	210	4.000	4/1	2500	2000	4000	16	6.5	6.9	18
750	52	61	82	1.3	P421_0040 KX401VF0010 MF EZ505U	97	210	4.000	4/1	2500	2000	4000	15	6.5	6.9	18
1000	12	13	30	3.5	P421_0030 KX401VF0010 MF EZ501U	46	150	3.000	3/1	2500	2000	4000	5.9	7.5	5.2	12
1000	13	15	33	3.2	P421_0030 KX401VF0010 MF EZ402U	46	150	3.000	3/1	2500	2000	4000	4.7	7.5	5.2	12
1000	20	25	49	2.2	P421_0030 KX401VF0010 MF EZ404U	73	150	3.000	3/1	2500	2000	4000	6.0	7.5	5.2	14
1000	21	23	52	2.1	P421_0030 KX401VF0010 MF EZ502U	73	150	3.000	3/1	2500	2000	4000	8.2	7.5	5.2	13
1000	21	24	52	2.1	P421_0030 KX401VF0010 MF EZ701U	57	150	3.000	3/1	2500	2000	4000	12	7.5	5.2	15
1000	28	32	69	1.6	P421_0030 KX401VF0010 MF EZ503U	73	150	3.000	3/1	2500	2000	4000	11	7.5	5.2	15
1000	34	41	85	1.3	P421_0030 KX401VF0010 MF EZ702U	73	150	3.000	3/1	2500	2000	4000	17	7.5	5.2	18
1000	39	46	96	1.1	P421_0030 KX401VF0010 MF EZ505U	73	150	3.000	3/1	2500	2000	4000	15	7.5	5.2	18
P4KX (n_{1N} = 6000 rpm, $M_{2acc,max}$ = 120 Nm)																
71	70	75	35	1.2	P422_0280 KX301VF0030 MF EZ301U	120	240	84.00	84/1	3500	3500	6000	0.94	5.5	10	8.5
80	62	67	31	1.4	P422_0250 KX301VF0030 MF EZ301U	120	240	75.00	75/1	3500	3500	6000	0.94	5.5	10	8.5
100	50	53	25	1.7	P422_0200 KX301VF0030 MF EZ301U	120	240	60.00	60/1	3500	3500	6000	0.95	5.5	10	8.5
P5KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 300 Nm)																
14	183	187	41	1.1	P522_0700 KX401VF0030 MF EZ301U	270	600	210.0	210/1	3000	3000	5500	1.6	4	26	13
20	131	133	29	1.6	P522_0500 KX401VF0030 MF EZ301U	300	600	150.0	150/1	3000	3000	5500	1.6	4	27	13
21	122	124	37	1.7	P522_0700 KX401VF0020 MF EZ301U	270	600	140.0	140/1	2500	2500	5000	1.8	4	26	13
25	104	107	24	2.0	P522_0400 KX401VF0030 MF EZ301U	300	600	120.0	120/1	3000	3000	5500	1.6	4.5	26	13
25	179	189	40	1.2	P522_0400 KX401VF0030 MF EZ302U	300	600	120.0	120/1	3000	3000	5500	1.7	4.5	26	13
29	91	93	21	2.3	P522_0350 KX401VF0030 MF EZ301U	280	600	105.0	105/1	3000	3000	5500	1.6	4.5	27	13
29	156	165	35	1.3	P522_0350 KX401VF0030 MF EZ302U	300	600	105.0	105/1	3000	3000	5500	1.7	4.5	27	13
29	203	215	46	1.0	P522_0350 KX401VF0030 MF EZ303U	300	600	105.0	105/1	3000	3000	5500	1.8	4.5	27	14
30	87	89	27	2.4	P522_0500 KX401VF0020 MF EZ301U	260	600	100.0	100/1	2500	2500	5000	1.8	4	27	13
30	149	157	46	1.4	P522_0500 KX401VF0020 MF EZ302U	300	600	100.0	100/1	2500	2500	5000	1.9	4	27	13
30	194	205	59	1.1	P522_0500 KX401VF0020 MF EZ303U	300	600	100.0	100/1	2500	2500	5000	2.0	4	27	14
36	73	75	16	2.9	P522_0280 KX401VF0030 MF EZ301U	220	600	84.00	84/1	3000	3000	5500	1.6	4.5	26	13
36	125	132	28	1.7	P522_0280 KX401VF0030 MF EZ302U	300	600	84.00	84/1	3000	3000	5500	1.7	4.5	26	13
36	163	172	37	1.3	P522_0280 KX401VF0030 MF EZ303U	300	600	84.00	84/1	3000	3000	5500	1.8	4.5	26	14
38	70	71	21	3.0	P522_0400 KX401VF0020 MF EZ301U	210	600	80.00	80/1	2500	2500	5000	1.8	4.5	26	13
38	119	126	36	1.8	P522_0400 KX401VF0020 MF EZ302U	300	600	80.00	80/1	2500	2500	5000	1.9	4.5	26	13
38	155	164	47	1.4	P522_0400 KX401VF0020 MF EZ303U	300	600	80.00	80/1	2500	2500	5000	2.0	4.5	26	14
38	210	225	64	1.0	P522_0400 KX401VF0020 MF EZ401U	300	600	80.00	80/1	2500	2500	5000	2.6	4.5	26	15
40	65	67	15	3.2	P522_0250 KX401VF0030 MF EZ301U	200	600	75.00	75/1	3000	3000	5500	1.6	4.5	27	13
40	112	118	25	1.9	P522_0250 KX401VF0030 MF EZ302U	300	600	75.00	75/1	3000	3000	5500	1.7	4.5	27	13
40	145	154	33	1.4	P522_0250 KX401VF0030 MF EZ303U	300	600	75.00	75/1	3000	3000	5500	1.9	4.5	27	14
40	197	211	44	1.1	P522_0250 KX401VF0030 MF EZ401U	300	600	75.00	75/1	3000	3000	5500	2.4	4.5	27	15
43	61	62	19	3.4	P522_0350 KX401VF0020 MF EZ301U	180	600	70.00	70/1	2500	2500	5000	1.8	4.5	27	13
43	104	110	32	2.0	P522_0350 KX401VF0020 MF EZ302U	300	600	70.00	70/1	2500	2500	5000	1.9	4.5	27	13
43	136	143	41	1.5	P522_0350 KX401VF0020 MF EZ303U	300	600	70.00	70/1	2500	2500	5000	2.0	4.5	27	14
43	183	197	56	1.1	P522_0350 KX401VF0020 MF EZ401U	300	600	70.00	70/1	2500	2500	5000	2.6	4.5	27	15
47	56	57	18	3.6	P522_0320 KX401VF0020 MF EZ301U	170	500	64.00	64/1	2500	2500	5000	1.9	4.5	25	13
47	95	101	31	2.1	P522_0320 KX401VF0020 MF EZ302U	250	500	64.00	64/1	2500	2500	5000	2.0	4.5	25	13
47	124	131	40	1.6	P522_0320 KX401VF0020 MF EZ303U	250	500	64.00	64/1	2500	2500	5000	2.1	4.5	25	14
47	168	180	54	1.2	P522_0320 KX401VF0020 MF EZ401U	250	500	64.00	64/1	2500	2500	5000	2.6	4.5	25	15
50	52	53	12	4.0	P522_0200 KX401VF0030 MF EZ301U	160	600	60.00	60/1	3000	3000	5500	1.7	4.5	26	13
50	89	94	20	2.4	P522_0200 KX401VF0030 MF EZ302U	280	600	60.00	60/1	3000	3000	5500	1.8	4.5	26	13

STOBER

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/arcmin]	m [kg]
P5KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 300 Nm)																
50	116	123	26	1.8	P522_0200 KX401VF0030 MF EZ303U	300	600	60.00	60/1	3000	3000	5500	1.9	4.5	26	14
50	157	168	35	1.3	P522_0200 KX401VF0030 MF EZ401U	300	600	60.00	60/1	3000	3000	5500	2.4	4.5	26	15
54	49	50	15	4.3	P522_0280 KX401VF0020 MF EZ301U	150	600	56.00	56/1	2500	2500	5000	1.8	4.5	26	13
54	83	88	25	2.5	P522_0280 KX401VF0020 MF EZ302U	260	600	56.00	56/1	2500	2500	5000	1.9	4.5	26	13
54	108	115	33	1.9	P522_0280 KX401VF0020 MF EZ303U	300	600	56.00	56/1	2500	2500	5000	2.0	4.5	26	14
54	147	157	45	1.4	P522_0280 KX401VF0020 MF EZ401U	300	600	56.00	56/1	2500	2500	5000	2.6	4.5	26	15
60	44	44	13	4.8	P522_0250 KX401VF0020 MF EZ301U	130	600	50.00	50/1	2500	2500	5000	1.9	4.5	27	13
60	74	79	23	2.8	P522_0250 KX401VF0020 MF EZ302U	230	600	50.00	50/1	2500	2500	5000	2.0	4.5	27	13
60	97	102	30	2.2	P522_0250 KX401VF0020 MF EZ303U	300	600	50.00	50/1	2500	2500	5000	2.1	4.5	27	14
60	131	140	40	1.6	P522_0250 KX401VF0020 MF EZ401U	300	600	50.00	50/1	2500	2500	5000	2.6	4.5	27	15
60	201	220	62	1.0	P522_0250 KX401VF0020 MF EZ501U	300	600	50.00	50/1	2500	2500	5000	4.6	4.5	27	16
75	60	63	18	3.5	P522_0200 KX401VF0020 MF EZ302U	190	600	40.00	40/1	2500	2500	5000	2.0	4.5	26	13
75	77	82	24	2.7	P522_0200 KX401VF0020 MF EZ303U	260	600	40.00	40/1	2500	2500	5000	2.1	4.5	26	14
75	105	112	32	2.0	P522_0200 KX401VF0020 MF EZ401U	300	600	40.00	40/1	2500	2500	5000	2.6	4.5	26	15
75	161	176	49	1.3	P522_0200 KX401VF0020 MF EZ501U	300	600	40.00	40/1	2500	2500	5000	4.6	4.5	26	16
75	176	195	54	1.2	P522_0200 KX401VF0020 MF EZ402U	300	600	40.00	40/1	2500	2500	5000	3.3	4.5	26	16
86	52	55	27	4.0	P522_0350 KX401VF0010 MF EZ302U	160	600	35.00	35/1	2500	2000	4000	2.7	4.5	27	13
86	68	72	35	3.1	P522_0350 KX401VF0010 MF EZ303U	230	600	35.00	35/1	2500	2000	4000	2.9	4.5	27	14
86	92	98	47	2.3	P522_0350 KX401VF0010 MF EZ401U	280	600	35.00	35/1	2500	2000	4000	3.4	4.5	27	15
86	141	154	72	1.5	P522_0350 KX401VF0010 MF EZ501U	300	600	35.00	35/1	2500	2000	4000	5.4	4.5	27	16
86	154	170	79	1.4	P522_0350 KX401VF0010 MF EZ402U	300	600	35.00	35/1	2500	2000	4000	4.1	4.5	27	16
94	48	50	15	4.4	P522_0160 KX401VF0020 MF EZ302U	150	600	32.00	32/1	2500	2500	5000	2.0	4.5	25	13
94	62	66	19	3.4	P522_0160 KX401VF0020 MF EZ303U	210	600	32.00	32/1	2500	2500	5000	2.1	4.5	25	14
94	84	90	26	2.5	P522_0160 KX401VF0020 MF EZ401U	250	600	32.00	32/1	2500	2500	5000	2.6	4.5	25	15
94	129	141	39	1.6	P522_0160 KX401VF0020 MF EZ501U	300	600	32.00	32/1	2500	2500	5000	4.6	4.5	25	16
94	141	156	43	1.5	P522_0160 KX401VF0020 MF EZ402U	300	600	32.00	32/1	2500	2500	5000	3.3	4.5	25	16
100	80	86	30	1.7	P521_0100 KX501VF0030 MF EZ401U	240	500	30.00	30/1	3000	3000	5000	5.7	4	23	17
100	123	135	46	1.1	P521_0100 KX501VF0030 MF EZ501U	250	500	30.00	30/1	3000	3000	5000	7.7	4	23	18
100	135	149	51	1.0	P521_0100 KX501VF0030 MF EZ402U	250	500	30.00	30/1	3000	3000	5000	6.4	4	23	18
125	64	69	17	3.1	P521_0080 KX501VF0030 MF EZ401U	190	500	24.00	24/1	3000	3000	5000	5.7	4.5	22	17
125	99	108	26	2.0	P521_0080 KX501VF0030 MF EZ501U	250	500	24.00	24/1	3000	3000	5000	7.7	4.5	22	18
125	108	119	28	1.9	P521_0080 KX501VF0030 MF EZ402U	250	500	24.00	24/1	3000	3000	5000	6.4	4.5	22	18
125	170	183	45	1.2	P521_0080 KX501VF0030 MF EZ502U	250	500	24.00	24/1	3000	3000	5000	10	4.5	22	19
125	170	190	45	1.2	P521_0080 KX501VF0030 MF EZ701U	250	500	24.00	24/1	3000	3000	5000	13	4.5	22	21
143	56	60	14	3.7	P521_0070 KX501VF0030 MF EZ401U	170	600	21.00	21/1	3000	3000	5000	5.7	4.5	23	17
143	86	94	22	2.4	P521_0070 KX501VF0030 MF EZ501U	270	600	21.00	21/1	3000	3000	5000	7.7	4.5	23	18
143	94	104	24	2.2	P521_0070 KX501VF0030 MF EZ402U	270	600	21.00	21/1	3000	3000	5000	6.4	4.5	23	18
143	138	173	35	1.5	P521_0070 KX501VF0030 MF EZ404U	270	600	21.00	21/1	3000	3000	5000	7.8	4.5	23	20
143	148	161	37	1.4	P521_0070 KX501VF0030 MF EZ502U	270	600	21.00	21/1	3000	3000	5000	10	4.5	23	19
143	148	167	37	1.4	P521_0070 KX501VF0030 MF EZ701U	270	600	21.00	21/1	3000	3000	5000	13	4.5	23	21
150	54	57	27	2.6	P521_0100 KX501VF0020 MF EZ401U	160	500	20.00	20/1	2500	2500	4500	6.2	4	23	17
150	82	90	42	1.7	P521_0100 KX501VF0020 MF EZ501U	250	500	20.00	20/1	2500	2500	4500	8.2	4	23	18
150	90	99	46	1.6	P521_0100 KX501VF0020 MF EZ402U	250	500	20.00	20/1	2500	2500	4500	6.9	4	23	18
150	132	164	67	1.1	P521_0100 KX501VF0020 MF EZ404U	250	500	20.00	20/1	2500	2500	4500	8.3	4	23	20
188	43	46	15	4.7	P521_0080 KX501VF0020 MF EZ401U	130	500	16.00	16/1	2500	2500	4500	6.3	4.5	22	17
188	66	72	23	3.0	P521_0080 KX501VF0020 MF EZ501U	240	500	16.00	16/1	2500	2500	4500	8.2	4.5	22	18
188	72	79	26	2.8	P521_0080 KX501VF0020 MF EZ402U	240	500	16.00	16/1	2500	2500	4500	7.0	4.5	22	18
188	105	131	38	1.9	P521_0080 KX501VF0020 MF EZ404U	250	500	16.00	16/1	2500	2500	4500	8.3	4.5	22	20
188	113	122	40	1.8	P521_0080 KX501VF0020 MF EZ502U	250	500	16.00	16/1	2500	2500	4500	11	4.5	22	19
188	113	127	40	1.8	P521_0080 KX501VF0020 MF EZ701U	250	500	16.00	16/1	2500	2500	4500	14	4.5	22	21
188	148	170	53	1.3	P521_0080 KX501VF0020 MF EZ503U	250	500	16.00	16/1	2500	2500	4500	13	4.5	22	21
200	62	67	15	3.4	P521_0050 KX501VF0030 MF EZ501U	230	600	15.00	15/1	3000	3000	5000	7.7	5	20	18
200	67	75	17	3.1	P521_0050 KX501VF0030 MF EZ402U	230	600	15.00	15/1	3000	3000	5000	6.5	5	20	18
200	99	123	25	2.1	P521_0050 KX501VF0030 MF EZ404U	300	600	15.00	15/1	3000	3000	5000	7.8	5	20	20
200	106	115	27	2.0	P521_0050 KX501VF0030 MF EZ502U	300	600	15.00	15/1	3000	3000	5000	10	5	20	19
200	106	119	27	2.0	P521_0050 KX501VF0030 MF EZ701U	290	600	15.00	15/1	3000	3000	5000	13	5	20	21
200	139	159	35	1.5	P521_0050 KX501VF0030 MF EZ503U	300	600	15.00	15/1	3000	3000	5000	12	5	20	21
200	172	206	43	1.2	P521_0050 KX501VF0030 MF EZ702U	300	600	15.00	15/1	3000	3000	5000	19	5	20	24
200	193	229	49	1.1	P521_0050 KX501VF0030 MF EZ505U	300	600	15.00	15/1	3000	3000	5000	17	5	20	24

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/ arcmin]	m [kg]
P5KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 300 Nm)																
214	58	63	20	3.7	P521_0070 KX501VF0020 MF EZ501U	210	600	14.00	14/1	2500	2500	4500	8.2	4.5	23	18
214	63	70	21	3.3	P521_0070 KX501VF0020 MF EZ402U	210	600	14.00	14/1	2500	2500	4500	7.0	4.5	23	18
214	92	115	31	2.3	P521_0070 KX501VF0020 MF EZ404U	270	600	14.00	14/1	2500	2500	4500	8.3	4.5	23	20
214	99	107	34	2.1	P521_0070 KX501VF0020 MF EZ502U	270	600	14.00	14/1	2500	2500	4500	11	4.5	23	19
214	99	111	34	2.1	P521_0070 KX501VF0020 MF EZ701U	270	600	14.00	14/1	2500	2500	4500	14	4.5	23	21
214	130	148	44	1.6	P521_0070 KX501VF0020 MF EZ503U	270	600	14.00	14/1	2500	2500	4500	13	4.5	23	21
214	161	193	55	1.3	P521_0070 KX501VF0020 MF EZ702U	270	600	14.00	14/1	2500	2500	4500	19	4.5	23	24
250	49	54	15	3.4	P521_0040 KX501VF0030 MF EZ501U	180	520	12.00	12/1	3000	3000	5000	7.8	5.5	17	18
250	54	60	17	3.1	P521_0040 KX501VF0030 MF EZ402U	180	520	12.00	12/1	3000	3000	5000	6.5	5.5	17	18
250	79	99	25	2.1	P521_0040 KX501VF0030 MF EZ404U	240	520	12.00	12/1	3000	3000	5000	7.9	5.5	17	20
250	85	92	26	2.0	P521_0040 KX501VF0030 MF EZ502U	240	520	12.00	12/1	3000	3000	5000	10	5.5	17	19
250	85	95	26	2.0	P521_0040 KX501VF0030 MF EZ701U	230	520	12.00	12/1	3000	3000	5000	13	5.5	17	21
250	111	127	35	1.5	P521_0040 KX501VF0030 MF EZ503U	240	520	12.00	12/1	3000	3000	5000	12	5.5	17	21
250	138	165	43	1.2	P521_0040 KX501VF0030 MF EZ702U	240	520	12.00	12/1	3000	3000	5000	19	5.5	17	24
250	155	183	48	1.1	P521_0040 KX501VF0030 MF EZ505U	240	520	12.00	12/1	3000	3000	5000	17	5.5	17	24
300	45	50	15	4.7	P521_0050 KX501VF0020 MF EZ402U	150	600	10.00	10/1	2500	2500	4500	7.1	5	20	18
300	66	82	22	3.2	P521_0050 KX501VF0020 MF EZ404U	280	600	10.00	10/1	2500	2500	4500	8.4	5	20	20
300	71	76	24	3.0	P521_0050 KX501VF0020 MF EZ502U	300	600	10.00	10/1	2500	2500	4500	11	5	20	19
300	71	79	24	3.0	P521_0050 KX501VF0020 MF EZ701U	190	600	10.00	10/1	2500	2500	4500	14	5	20	21
300	93	106	31	2.3	P521_0050 KX501VF0020 MF EZ503U	300	600	10.00	10/1	2500	2500	4500	13	5	20	21
300	115	138	39	1.8	P521_0050 KX501VF0020 MF EZ702U	300	600	10.00	10/1	2500	2500	4500	19	5	20	24
300	129	153	44	1.6	P521_0050 KX501VF0020 MF EZ505U	300	600	10.00	10/1	2500	2500	4500	18	5	20	24
300	158	199	54	1.3	P521_0050 KX501VF0020 MF EZ703U	300	600	10.00	10/1	2500	2500	4500	27	5	20	26
375	36	40	15	4.7	P521_0040 KX501VF0020 MF EZ402U	120	520	8.000	8/1	2500	2500	4500	7.2	5.5	17	18
375	53	66	22	3.2	P521_0040 KX501VF0020 MF EZ404U	220	520	8.000	8/1	2500	2500	4500	8.5	5.5	17	20
375	57	61	24	3.0	P521_0040 KX501VF0020 MF EZ502U	240	520	8.000	8/1	2500	2500	4500	11	5.5	17	19
375	57	63	24	3.0	P521_0040 KX501VF0020 MF EZ701U	150	520	8.000	8/1	2500	2500	4500	14	5.5	17	21
375	74	85	31	2.3	P521_0040 KX501VF0020 MF EZ503U	240	520	8.000	8/1	2500	2500	4500	13	5.5	17	21
375	92	110	39	1.8	P521_0040 KX501VF0020 MF EZ702U	240	520	8.000	8/1	2500	2500	4500	19	5.5	17	24
375	103	122	43	1.6	P521_0040 KX501VF0020 MF EZ505U	240	520	8.000	8/1	2500	2500	4500	18	5.5	17	24
375	126	159	53	1.3	P521_0040 KX501VF0020 MF EZ703U	240	520	8.000	8/1	2500	2500	4500	27	5.5	17	26
429	46	58	30	4.0	P521_0070 KX501VF0010 MF EZ404U	190	600	7.000	7/1	2500	2000	3500	11	4.5	23	20
429	49	54	32	3.7	P521_0070 KX501VF0010 MF EZ502U	210	600	7.000	7/1	2500	2000	3500	13	4.5	23	19
429	49	56	32	3.7	P521_0070 KX501VF0010 MF EZ701U	130	600	7.000	7/1	2500	2000	3500	16	4.5	23	21
429	65	74	42	2.8	P521_0070 KX501VF0010 MF EZ503U	270	600	7.000	7/1	2500	2000	3500	15	4.5	23	21
429	80	96	52	2.3	P521_0070 KX501VF0010 MF EZ702U	270	600	7.000	7/1	2500	2000	3500	21	4.5	23	24
429	90	107	59	2.0	P521_0070 KX501VF0010 MF EZ505U	270	600	7.000	7/1	2500	2000	3500	20	4.5	23	24
429	110	139	72	1.7	P521_0070 KX501VF0010 MF EZ703U	270	600	7.000	7/1	2500	2000	3500	29	4.5	23	26
429	142	202	93	1.3	P521_0070 KX501VF0010 MF EZ705U	270	600	7.000	7/1	2500	2000	3500	42	4.5	23	31
500	25	27	15	4.9	P521_0030 KX501VF0020 MF EZ501U	92	390	6.000	6/1	2500	2500	4500	8.9	6.5	14	18
500	27	30	16	4.5	P521_0030 KX501VF0020 MF EZ402U	92	390	6.000	6/1	2500	2500	4500	7.6	6.5	14	18
500	40	49	24	3.0	P521_0030 KX501VF0020 MF EZ404U	170	390	6.000	6/1	2500	2500	4500	8.9	6.5	14	20
500	42	46	25	2.8	P521_0030 KX501VF0020 MF EZ502U	180	390	6.000	6/1	2500	2500	4500	11	6.5	14	19
500	42	48	25	2.8	P521_0030 KX501VF0020 MF EZ701U	110	390	6.000	6/1	2500	2500	4500	14	6.5	14	21
500	56	64	33	2.2	P521_0030 KX501VF0020 MF EZ503U	180	390	6.000	6/1	2500	2500	4500	14	6.5	14	21
500	69	83	41	1.7	P521_0030 KX501VF0020 MF EZ702U	180	390	6.000	6/1	2500	2500	4500	20	6.5	14	24
500	77	92	46	1.6	P521_0030 KX501VF0020 MF EZ505U	180	390	6.000	6/1	2500	2500	4500	18	6.5	14	24
500	95	119	56	1.3	P521_0030 KX501VF0020 MF EZ703U	180	390	6.000	6/1	2500	2500	4500	28	6.5	14	26
600	46	53	30	4.0	P521_0050 KX501VF0010 MF EZ503U	210	600	5.000	5/1	2500	2000	3500	16	5	20	21
600	57	69	38	3.2	P521_0050 KX501VF0010 MF EZ702U	200	600	5.000	5/1	2500	2000	3500	22	5	20	24
600	64	76	42	2.8	P521_0050 KX501VF0010 MF EZ505U	300	600	5.000	5/1	2500	2000	3500	20	5	20	24
600	79	99	52	2.3	P521_0050 KX501VF0010 MF EZ703U	300	600	5.000	5/1	2500	2000	3500	30	5	20	26
600	102	144	67	1.8	P521_0050 KX501VF0010 MF EZ705U	300	600	5.000	5/1	2500	2000	3500	42	5	20	31
750	37	42	26	4.6	P521_0040 KX501VF0010 MF EZ503U	160	520	4.000	4/1	2500	2000	3500	16	5.5	17	21
750	46	55	32	3.7	P521_0040 KX501VF0010 MF EZ702U	160	520	4.000	4/1	2500	2000	3500	22	5.5	17	24
750	52	61	37	3.3	P521_0040 KX501VF0010 MF EZ505U	240	520	4.000	4/1	2500	2000	3500	21	5.5	17	24
750	63	79	45	2.7	P521_0040 KX501VF0010 MF EZ703U	240	520	4.000	4/1	2500	2000	3500	30	5.5	17	26
750	81	115	58	2.1	P521_0040 KX501VF0010 MF EZ705U	240	520	4.000	4/1	2500	2000	3500	43	5.5	17	31
1000	21	23	24	4.9	P521_0030 KX501VF0010 MF EZ502U	89	390	3.000	3/1	2500	2000	3500	15	6.5	14	19

STOBER

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/arcmin]	m [kg]
P5KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 300 Nm)																
1000	21	24	24	4.9	P521_0030 KX501VF0010 MF EZ701U	57	390	3.000	3/1	2500	2000	3500	19	6.5	14	21
1000	28	32	32	3.8	P521_0030 KX501VF0010 MF EZ503U	120	390	3.000	3/1	2500	2000	3500	18	6.5	14	21
1000	34	41	39	3.0	P521_0030 KX501VF0010 MF EZ702U	120	390	3.000	3/1	2500	2000	3500	24	6.5	14	24
1000	39	46	44	2.7	P521_0030 KX501VF0010 MF EZ505U	180	390	3.000	3/1	2500	2000	3500	22	6.5	14	24
1000	47	60	54	2.2	P521_0030 KX501VF0010 MF EZ703U	180	390	3.000	3/1	2500	2000	3500	32	6.5	14	26
1000	61	87	70	1.7	P521_0030 KX501VF0010 MF EZ705U	180	390	3.000	3/1	2500	2000	3500	44	6.5	14	31
P5KX (n_{1N} = 4500 rpm, $M_{2acc,max}$ = 300 Nm)																
300	136	219	39	1.4	P521_0050 KX501VF0030 MF EZ505U	300	600	15.00	15/1	3000	3000	5000	17	5	20	24
321	127	205	45	1.6	P521_0070 KX501VF0020 MF EZ505U	270	600	14.00	14/1	2500	2500	4500	17	4.5	23	24
375	109	175	39	1.4	P521_0040 KX501VF0030 MF EZ505U	240	520	12.00	12/1	3000	3000	5000	17	5.5	17	24
450	91	146	35	2.0	P521_0050 KX501VF0020 MF EZ505U	300	600	10.00	10/1	2500	2500	4500	18	5	20	24
450	116	191	45	1.6	P521_0050 KX501VF0020 MF EZ703U	300	600	10.00	10/1	2500	2500	4500	27	5	20	26
563	73	117	35	2.0	P521_0040 KX501VF0020 MF EZ505U	240	520	8.000	8/1	2500	2500	4500	18	5.5	17	24
563	92	153	45	1.6	P521_0040 KX501VF0020 MF EZ703U	240	520	8.000	8/1	2500	2500	4500	27	5.5	17	26
750	54	88	35	2.0	P521_0030 KX501VF0020 MF EZ505U	180	390	6.000	6/1	2500	2500	4500	18	6.5	14	24
750	69	115	45	1.6	P521_0030 KX501VF0020 MF EZ703U	180	390	6.000	6/1	2500	2500	4500	28	6.5	14	26
P7KX (n_{1N} = 2000 rpm, $M_{2acc,max}$ = 650 Nm)																
286	292	442	239	1.5	P721_0070 KX701VF0010 MF EZ805U	650	1250	7.000	7/1	1800	1600	3000	159	4.5	49	69
400	209	316	171	2.1	P721_0050 KX701VF0010 MF EZ805U	610	1130	5.000	5/1	1800	1600	3000	160	5	46	69
500	167	253	155	2.3	P721_0040 KX701VF0010 MF EZ805U	490	910	4.000	4/1	1800	1600	3000	161	5.5	43	69
667	125	189	161	2.2	P721_0030 KX701VF0010 MF EZ805U	360	680	3.000	3/1	1800	1600	3000	166	6.5	37	69
P7KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 700 Nm)																
20	393	421	47	1.1	P722_0500 KX501VF0030 MF EZ401U	700	1400	150.0	150/1	3000	3000	5000	5.7	4	52	25
21	367	393	59	1.2	P722_0700 KX501VF0020 MF EZ401U	650	1250	140.0	140/1	2500	2500	4500	6.2	4	52	25
25	314	337	38	1.4	P722_0400 KX501VF0030 MF EZ401U	700	1380	120.0	120/1	3000	3000	5000	5.7	4.5	51	25
29	275	295	33	1.6	P722_0350 KX501VF0030 MF EZ401U	700	1400	105.0	105/1	3000	3000	5000	5.7	4.5	52	25
29	422	462	51	1.0	P722_0350 KX501VF0030 MF EZ501U	700	1400	105.0	105/1	3000	3000	5000	7.7	4.5	52	26
30	262	281	42	1.7	P722_0500 KX501VF0020 MF EZ401U	700	1400	100.0	100/1	2500	2500	4500	6.2	4	52	25
30	402	440	65	1.1	P722_0500 KX501VF0020 MF EZ501U	700	1400	100.0	100/1	2500	2500	4500	8.2	4	52	26
30	440	487	71	1.0	P722_0500 KX501VF0020 MF EZ402U	700	1400	100.0	100/1	2500	2500	4500	6.9	4	52	26
36	220	236	26	2.0	P722_0280 KX501VF0030 MF EZ401U	670	1380	84.00	84/1	3000	3000	5000	5.7	4.5	51	25
36	338	369	40	1.3	P722_0280 KX501VF0030 MF EZ501U	700	1380	84.00	84/1	3000	3000	5000	7.7	4.5	51	26
36	369	409	44	1.2	P722_0280 KX501VF0030 MF EZ402U	700	1380	84.00	84/1	3000	3000	5000	6.4	4.5	51	26
38	210	225	34	2.1	P722_0400 KX501VF0020 MF EZ401U	640	1380	80.00	80/1	2500	2500	4500	6.2	4.5	51	25
38	322	352	52	1.4	P722_0400 KX501VF0020 MF EZ501U	700	1380	80.00	80/1	2500	2500	4500	8.2	4.5	51	26
38	352	389	57	1.3	P722_0400 KX501VF0020 MF EZ402U	700	1380	80.00	80/1	2500	2500	4500	6.9	4.5	51	26
40	197	211	24	2.2	P722_0250 KX501VF0030 MF EZ401U	600	1400	75.00	75/1	3000	3000	5000	5.8	4.5	52	25
40	302	330	36	1.5	P722_0250 KX501VF0030 MF EZ501U	700	1400	75.00	75/1	3000	3000	5000	7.7	4.5	52	26
40	330	365	39	1.3	P722_0250 KX501VF0030 MF EZ402U	700	1400	75.00	75/1	3000	3000	5000	6.5	4.5	52	26
43	183	197	30	2.4	P722_0350 KX501VF0020 MF EZ401U	560	1400	70.00	70/1	2500	2500	4500	6.3	4.5	52	25
43	282	308	46	1.6	P722_0350 KX501VF0020 MF EZ501U	700	1400	70.00	70/1	2500	2500	4500	8.3	4.5	52	26
43	308	341	50	1.4	P722_0350 KX501VF0020 MF EZ402U	700	1400	70.00	70/1	2500	2500	4500	7.0	4.5	52	26
47	168	180	30	2.4	P722_0320 KX501VF0020 MF EZ401U	500	1000	64.00	64/1	2500	2500	4500	6.4	4.5	51	25
47	258	281	46	1.6	P722_0320 KX501VF0020 MF EZ501U	500	1000	64.00	64/1	2500	2500	4500	8.4	4.5	51	26
47	281	311	50	1.4	P722_0320 KX501VF0020 MF EZ402U	500	1000	64.00	64/1	2500	2500	4500	7.1	4.5	51	26
50	157	168	19	2.8	P722_0200 KX501VF0030 MF EZ401U	480	1400	60.00	60/1	3000	3000	5000	5.8	4.5	51	25
50	241	264	29	1.8	P722_0200 KX501VF0030 MF EZ501U	700	1400	60.00	60/1	3000	3000	5000	7.8	4.5	51	26
50	264	292	32	1.7	P722_0200 KX501VF0030 MF EZ402U	700	1400	60.00	60/1	3000	3000	5000	6.5	4.5	51	26
50	387	483	46	1.1	P722_0200 KX501VF0030 MF EZ404U	700	1400	60.00	60/1	3000	3000	5000	7.9	4.5	51	29
50	415	449	50	1.1	P722_0200 KX501VF0030 MF EZ502U	700	1400	60.00	60/1	3000	3000	5000	10	4.5	51	28
50	415	466	50	1.1	P722_0200 KX501VF0030 MF EZ701U	700	1400	60.00	60/1	3000	3000	5000	13	4.5	51	30
54	147	157	24	3.0	P722_0280 KX501VF0020 MF EZ401U	450	1380	56.00	56/1	2500	2500	4500	6.3	4.5	51	25
54	225	246	37	2.0	P722_0280 KX501VF0020 MF EZ501U	700	1380	56.00	56/1	2500	2500	4500	8.3	4.5	51	26
54	246	272	40	1.8	P722_0280 KX501VF0020 MF EZ402U	700	1380	56.00	56/1	2500	2500	4500	7.0	4.5	51	26
54	362	451	59	1.2	P722_0280 KX501VF0020 MF EZ404U	700	1380	56.00	56/1	2500	2500	4500	8.3	4.5	51	29
54	388	419	63	1.1	P722_0280 KX501VF0020 MF EZ502U	700	1380	56.00	56/1	2500	2500	4500	11	4.5	51	28
54	388	435	63	1.1	P722_0280 KX501VF0020 MF EZ701U	700	1380	56.00	56/1	2500	2500	4500	14	4.5	51	30
60	131	140	21	3.4	P722_0250 KX501VF0020 MF EZ401U	400	1400	50.00	50/1	2500	2500	4500	6.4	4.5	52	25
60	201	220	33	2.2	P722_0250 KX501VF0020 MF EZ501U	700	1400	50.00	50/1	2500	2500	4500	8.3	4.5	52	26

PKX

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/arcmin]	m [kg]
P7KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 700 Nm)																
60	220	243	36	2.0	P722_0250 KX501VF0020 MF EZ402U	700	1400	50.00	50/1	2500	2500	4500	7.1	4.5	52	26
60	323	402	52	1.4	P722_0250 KX501VF0020 MF EZ404U	700	1400	50.00	50/1	2500	2500	4500	8.4	4.5	52	29
60	346	374	56	1.3	P722_0250 KX501VF0020 MF EZ502U	700	1400	50.00	50/1	2500	2500	4500	11	4.5	52	28
60	346	388	56	1.3	P722_0250 KX501VF0020 MF EZ701U	700	1400	50.00	50/1	2500	2500	4500	14	4.5	52	30
75	105	112	17	4.2	P722_0200 KX501VF0020 MF EZ401U	320	1400	40.00	40/1	2500	2500	4500	6.5	4.5	51	25
75	161	176	26	2.7	P722_0200 KX501VF0020 MF EZ501U	600	1400	40.00	40/1	2500	2500	4500	8.4	4.5	51	26
75	176	195	29	2.5	P722_0200 KX501VF0020 MF EZ402U	600	1400	40.00	40/1	2500	2500	4500	7.2	4.5	51	26
75	258	322	42	1.7	P722_0200 KX501VF0020 MF EZ404U	700	1400	40.00	40/1	2500	2500	4500	8.5	4.5	51	29
75	277	299	45	1.6	P722_0200 KX501VF0020 MF EZ502U	700	1400	40.00	40/1	2500	2500	4500	11	4.5	51	28
75	277	311	45	1.6	P722_0200 KX501VF0020 MF EZ701U	700	1400	40.00	40/1	2500	2500	4500	14	4.5	51	30
75	363	415	59	1.2	P722_0200 KX501VF0020 MF EZ503U	700	1400	40.00	40/1	2500	2500	4500	13	4.5	51	29
86	92	98	25	4.8	P722_0350 KX501VF0010 MF EZ401U	280	1400	35.00	35/1	2500	2000	3500	8.7	4.5	52	25
86	141	154	38	3.1	P722_0350 KX501VF0010 MF EZ501U	520	1400	35.00	35/1	2500	2000	3500	11	4.5	52	26
86	154	170	42	2.9	P722_0350 KX501VF0010 MF EZ402U	520	1400	35.00	35/1	2500	2000	3500	9.4	4.5	52	26
86	226	282	62	1.9	P722_0350 KX501VF0010 MF EZ404U	700	1400	35.00	35/1	2500	2000	3500	11	4.5	52	29
86	242	262	66	1.8	P722_0350 KX501VF0010 MF EZ502U	700	1400	35.00	35/1	2500	2000	3500	13	4.5	52	28
86	242	272	66	1.8	P722_0350 KX501VF0010 MF EZ701U	660	1400	35.00	35/1	2500	2000	3500	16	4.5	52	30
86	318	364	87	1.4	P722_0350 KX501VF0010 MF EZ503U	700	1400	35.00	35/1	2500	2000	3500	15	4.5	52	29
86	393	472	107	1.1	P722_0350 KX501VF0010 MF EZ702U	700	1400	35.00	35/1	2500	2000	3500	22	4.5	52	32
94	129	141	21	3.4	P722_0160 KX501VF0020 MF EZ501U	480	1380	32.00	32/1	2500	2500	4500	8.5	4.5	49	26
94	141	156	23	3.1	P722_0160 KX501VF0020 MF EZ402U	480	1380	32.00	32/1	2500	2500	4500	7.2	4.5	49	26
94	207	258	33	2.1	P722_0160 KX501VF0020 MF EZ404U	700	1380	32.00	32/1	2500	2500	4500	8.5	4.5	49	29
94	222	240	36	2.0	P722_0160 KX501VF0020 MF EZ502U	700	1380	32.00	32/1	2500	2500	4500	11	4.5	49	28
94	222	249	36	2.0	P722_0160 KX501VF0020 MF EZ701U	600	1380	32.00	32/1	2500	2500	4500	14	4.5	49	30
94	290	332	47	1.5	P722_0160 KX501VF0020 MF EZ503U	700	1380	32.00	32/1	2500	2500	4500	13	4.5	49	29
94	359	431	58	1.2	P722_0160 KX501VF0020 MF EZ702U	700	1380	32.00	32/1	2500	2500	4500	19	4.5	49	32
94	404	479	66	1.1	P722_0160 KX501VF0020 MF EZ505U	700	1380	32.00	32/1	2500	2500	4500	18	4.5	49	32
100	123	135	65	2.4	P721_0100 KX701VF0030 MF EZ501U	460	1000	30.00	30/1	2100	2100	4000	15	4	47	28
100	212	229	112	1.4	P721_0100 KX701VF0030 MF EZ502U	500	1000	30.00	30/1	2100	2100	4000	18	4	47	30
100	212	238	112	1.4	P721_0100 KX701VF0030 MF EZ701U	500	1000	30.00	30/1	2100	2100	4000	21	4	47	32
100	278	318	146	1.1	P721_0100 KX701VF0030 MF EZ503U	500	1000	30.00	30/1	2100	2100	4000	20	4	47	31
125	99	108	39	4.1	P721_0080 KX701VF0030 MF EZ501U	370	1000	24.00	24/1	2100	2100	4000	15	4.5	49	28
125	170	183	67	2.4	P721_0080 KX701VF0030 MF EZ502U	500	1000	24.00	24/1	2100	2100	4000	18	4.5	49	30
125	170	190	67	2.4	P721_0080 KX701VF0030 MF EZ701U	460	1000	24.00	24/1	2100	2100	4000	21	4.5	49	32
125	222	255	88	1.8	P721_0080 KX701VF0030 MF EZ503U	500	1000	24.00	24/1	2100	2100	4000	20	4.5	49	31
125	275	330	109	1.5	P721_0080 KX701VF0030 MF EZ702U	500	1000	24.00	24/1	2100	2100	4000	26	4.5	49	34
125	310	367	122	1.3	P721_0080 KX701VF0030 MF EZ505U	500	1000	24.00	24/1	2100	2100	4000	25	4.5	49	34
143	148	161	53	3.0	P721_0070 KX701VF0030 MF EZ502U	620	1250	21.00	21/1	2100	2100	4000	18	4.5	49	30
143	148	167	53	3.0	P721_0070 KX701VF0030 MF EZ701U	400	1250	21.00	21/1	2100	2100	4000	21	4.5	49	32
143	195	223	70	2.3	P721_0070 KX701VF0030 MF EZ503U	650	1250	21.00	21/1	2100	2100	4000	20	4.5	49	31
143	241	289	86	1.8	P721_0070 KX701VF0030 MF EZ702U	650	1250	21.00	21/1	2100	2100	4000	26	4.5	49	34
143	271	321	97	1.6	P721_0070 KX701VF0030 MF EZ505U	650	1250	21.00	21/1	2100	2100	4000	25	4.5	49	34
143	331	417	119	1.3	P721_0070 KX701VF0030 MF EZ703U	650	1250	21.00	21/1	2100	2100	4000	34	4.5	49	36
150	82	90	59	3.7	P721_0100 KX701VF0020 MF EZ501U	310	1000	20.00	20/1	1800	1800	3500	18	4	47	28
150	141	153	101	2.1	P721_0100 KX701VF0020 MF EZ502U	500	1000	20.00	20/1	1800	1800	3500	20	4	47	30
150	141	159	101	2.1	P721_0100 KX701VF0020 MF EZ701U	380	1000	20.00	20/1	1800	1800	3500	23	4	47	32
150	185	212	132	1.6	P721_0100 KX701VF0020 MF EZ503U	500	1000	20.00	20/1	1800	1800	3500	22	4	47	31
150	229	275	164	1.3	P721_0100 KX701VF0020 MF EZ702U	500	1000	20.00	20/1	1800	1800	3500	29	4	47	34
150	258	306	184	1.2	P721_0100 KX701VF0020 MF EZ505U	500	1000	20.00	20/1	1800	1800	3500	27	4	47	34
188	113	122	61	3.5	P721_0080 KX701VF0020 MF EZ502U	470	1000	16.00	16/1	1800	1800	3500	20	4.5	49	30
188	113	127	61	3.5	P721_0080 KX701VF0020 MF EZ701U	310	1000	16.00	16/1	1800	1800	3500	23	4.5	49	32
188	148	170	79	2.7	P721_0080 KX701VF0020 MF EZ503U	500	1000	16.00	16/1	1800	1800	3500	22	4.5	49	31
188	183	220	98	2.2	P721_0080 KX701VF0020 MF EZ702U	500	1000	16.00	16/1	1800	1800	3500	29	4.5	49	34
188	206	245	110	1.9	P721_0080 KX701VF0020 MF EZ505U	500	1000	16.00	16/1	1800	1800	3500	27	4.5	49	34
188	252	318	135	1.6	P721_0080 KX701VF0020 MF EZ703U	500	1000	16.00	16/1	1800	1800	3500	37	4.5	49	36
200	106	115	40	4.0	P721_0050 KX701VF0030 MF EZ502U	440	1290	15.00	15/1	2100	2100	4000	18	5	46	30
200	106	119	40	4.0	P721_0050 KX701VF0030 MF EZ701U	290	1290	15.00	15/1	2100	2100	4000	21	5	46	32
200	139	159	52	3.0	P721_0050 KX701VF0030 MF EZ503U	610	1290	15.00	15/1	2100	2100	4000	20	5	46	31
200	172	206	64	2.5	P721_0050 KX701VF0030 MF EZ702U	590	1290	15.00	15/1	2100	2100	4000	26	5	46	34

STOBER

PKX

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/arcmin]	m [kg]
P7KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 700 Nm)																
200	193	229	72	2.2	P721_0050 KX701VF0030 MF EZ505U	610	1290	15.00	15/1	2100	2100	4000	25	5	46	34
200	236	298	88	1.8	P721_0050 KX701VF0030 MF EZ703U	610	1290	15.00	15/1	2100	2100	4000	34	5	46	36
200	305	433	114	1.4	P721_0050 KX701VF0030 MF EZ705U	610	1290	15.00	15/1	2100	2100	4000	47	5	46	42
214	99	107	48	4.4	P721_0070 KX701VF0020 MF EZ502U	410	1250	14.00	14/1	1800	1800	3500	20	4.5	49	30
214	99	111	48	4.4	P721_0070 KX701VF0020 MF EZ701U	270	1250	14.00	14/1	1800	1800	3500	23	4.5	49	32
214	130	148	63	3.4	P721_0070 KX701VF0020 MF EZ503U	580	1250	14.00	14/1	1800	1800	3500	23	4.5	49	31
214	161	193	78	2.7	P721_0070 KX701VF0020 MF EZ702U	550	1250	14.00	14/1	1800	1800	3500	29	4.5	49	34
214	181	214	88	2.4	P721_0070 KX701VF0020 MF EZ505U	650	1250	14.00	14/1	1800	1800	3500	27	4.5	49	34
214	221	278	107	2.0	P721_0070 KX701VF0020 MF EZ703U	650	1250	14.00	14/1	1800	1800	3500	37	4.5	49	36
214	285	404	139	1.5	P721_0070 KX701VF0020 MF EZ705U	650	1250	14.00	14/1	1800	1800	3500	49	4.5	49	42
214	298	496	145	1.5	P721_0070 KX701VF0020 MF EZ802U	650	1250	14.00	14/1	1800	1800	3500	73	4.5	49	50
250	85	92	40	4.0	P721_0040 KX701VF0030 MF EZ502U	360	1030	12.00	12/1	2100	2100	4000	18	5.5	43	30
250	85	95	40	4.0	P721_0040 KX701VF0030 MF EZ701U	230	1030	12.00	12/1	2100	2100	4000	21	5.5	43	32
250	111	127	52	3.0	P721_0040 KX701VF0030 MF EZ503U	490	1030	12.00	12/1	2100	2100	4000	20	5.5	43	31
250	138	165	64	2.5	P721_0040 KX701VF0030 MF EZ702U	470	1030	12.00	12/1	2100	2100	4000	27	5.5	43	34
250	155	183	72	2.2	P721_0040 KX701VF0030 MF EZ505U	490	1030	12.00	12/1	2100	2100	4000	25	5.5	43	34
250	189	238	88	1.8	P721_0040 KX701VF0030 MF EZ703U	490	1030	12.00	12/1	2100	2100	4000	34	5.5	43	36
250	244	346	114	1.4	P721_0040 KX701VF0030 MF EZ705U	490	1030	12.00	12/1	2100	2100	4000	47	5.5	43	42
300	93	106	47	4.6	P721_0050 KX701VF0020 MF EZ503U	410	1290	10.00	10/1	1800	1800	3500	23	5	46	31
300	115	138	58	3.7	P721_0050 KX701VF0020 MF EZ702U	390	1290	10.00	10/1	1800	1800	3500	29	5	46	34
300	129	153	65	3.3	P721_0050 KX701VF0020 MF EZ505U	610	1290	10.00	10/1	1800	1800	3500	27	5	46	34
300	158	199	80	2.7	P721_0050 KX701VF0020 MF EZ703U	610	1290	10.00	10/1	1800	1800	3500	37	5	46	36
300	204	289	103	2.1	P721_0050 KX701VF0020 MF EZ705U	610	1290	10.00	10/1	1800	1800	3500	49	5	46	42
300	213	354	108	2.0	P721_0050 KX701VF0020 MF EZ802U	610	1290	10.00	10/1	1800	1800	3500	73	5	46	50
300	254	461	128	1.7	P721_0050 KX701VF0020 MF EZ803U	610	1290	10.00	10/1	1800	1800	3500	99	5	46	56
375	74	85	47	4.6	P721_0040 KX701VF0020 MF EZ503U	330	1030	8.000	8/1	1800	1800	3500	23	5.5	43	31
375	92	110	58	3.7	P721_0040 KX701VF0020 MF EZ702U	310	1030	8.000	8/1	1800	1800	3500	29	5.5	43	34
375	103	122	65	3.3	P721_0040 KX701VF0020 MF EZ505U	490	1030	8.000	8/1	1800	1800	3500	28	5.5	43	34
375	126	159	80	2.7	P721_0040 KX701VF0020 MF EZ703U	490	1030	8.000	8/1	1800	1800	3500	37	5.5	43	36
375	163	231	103	2.1	P721_0040 KX701VF0020 MF EZ705U	490	1030	8.000	8/1	1800	1800	3500	50	5.5	43	42
375	170	284	108	2.0	P721_0040 KX701VF0020 MF EZ802U	490	1030	8.000	8/1	1800	1800	3500	74	5.5	43	50
375	203	368	128	1.7	P721_0040 KX701VF0020 MF EZ803U	490	1030	8.000	8/1	1800	1800	3500	99	5.5	43	56
429	80	96	75	4.8	P721_0070 KX701VF0010 MF EZ702U	270	1250	7.000	7/1	1800	1600	3000	40	4.5	49	34
429	90	107	85	4.3	P721_0070 KX701VF0010 MF EZ505U	450	1250	7.000	7/1	1800	1600	3000	38	4.5	49	34
429	110	139	103	3.5	P721_0070 KX701VF0010 MF EZ703U	430	1250	7.000	7/1	1800	1600	3000	48	4.5	49	36
429	142	202	133	2.7	P721_0070 KX701VF0010 MF EZ705U	650	1250	7.000	7/1	1800	1600	3000	60	4.5	49	42
429	149	248	140	2.6	P721_0070 KX701VF0010 MF EZ802U	650	1250	7.000	7/1	1800	1600	3000	84	4.5	49	50
429	178	322	167	2.2	P721_0070 KX701VF0010 MF EZ803U	650	1250	7.000	7/1	1800	1600	3000	109	4.5	49	56
500	56	64	47	4.6	P721_0030 KX701VF0020 MF EZ503U	250	770	6.000	6/1	1800	1800	3500	24	6.5	37	31
500	69	83	58	3.7	P721_0030 KX701VF0020 MF EZ702U	240	770	6.000	6/1	1800	1800	3500	31	6.5	37	34
500	77	92	65	3.3	P721_0030 KX701VF0020 MF EZ505U	360	770	6.000	6/1	1800	1800	3500	29	6.5	37	34
500	95	119	80	2.7	P721_0030 KX701VF0020 MF EZ703U	360	770	6.000	6/1	1800	1800	3500	38	6.5	37	36
500	122	173	103	2.1	P721_0030 KX701VF0020 MF EZ705U	360	770	6.000	6/1	1800	1800	3500	51	6.5	37	42
500	128	213	108	2.0	P721_0030 KX701VF0020 MF EZ802U	360	770	6.000	6/1	1800	1800	3500	75	6.5	37	50
500	152	276	128	1.7	P721_0030 KX701VF0020 MF EZ803U	360	770	6.000	6/1	1800	1800	3500	100	6.5	37	56
600	79	99	74	4.9	P721_0050 KX701VF0010 MF EZ703U	310	1130	5.000	5/1	1800	1600	3000	49	5	46	36
600	102	144	95	3.8	P721_0050 KX701VF0010 MF EZ705U	500	1130	5.000	5/1	1800	1600	3000	61	5	46	42
600	107	177	100	3.6	P721_0050 KX701VF0010 MF EZ802U	480	1130	5.000	5/1	1800	1600	3000	85	5	46	50
600	127	230	119	3.0	P721_0050 KX701VF0010 MF EZ803U	610	1130	5.000	5/1	1800	1600	3000	110	5	46	56
750	81	115	86	4.2	P721_0040 KX701VF0010 MF EZ705U	400	910	4.000	4/1	1800	1600	3000	62	5.5	43	42
750	85	142	91	4.0	P721_0040 KX701VF0010 MF EZ802U	380	910	4.000	4/1	1800	1600	3000	86	5.5	43	50
750	102	184	108	3.3	P721_0040 KX701VF0010 MF EZ803U	490	910	4.000	4/1	1800	1600	3000	112	5.5	43	56
1000	61	87	90	4.0	P721_0030 KX701VF0010 MF EZ705U	300	680	3.000	3/1	1800	1600	3000	67	6.5	37	42
1000	64	106	94	3.8	P721_0030 KX701VF0010 MF EZ802U	290	680	3.000	3/1	1800	1600	3000	91	6.5	37	50
1000	76	138	112	3.2	P721_0030 KX701VF0010 MF EZ803U	360	680	3.000	3/1	1800	1600	3000	117	6.5	37	56
P7KX (n_{1N} = 4500 rpm, $M_{2acc,max}$ = 700 Nm)																
141	284	458	46	1.5	P722_0160 KX501VF0020 MF EZ505U	700	1380	32.00	32/1	2500	2500	4500	18	4.5	49	32

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/arcmin]	m [kg]
P8KX (n_{1N} = 2000 rpm, $M_{2acc,max}$ = 1400 Nm)																
133	626	947	110	1.5	P821_0050 KX801VF0030 MF EZ805U	1330	2580	15.00	15/1	1300	1300	3000	177	5	128	93
143	585	884	136	1.7	P821_0070 KX801VF0020 MF EZ805U	1400	2800	14.00	14/1	1100	1100	2500	183	4.5	142	93
167	501	758	110	1.5	P821_0040 KX801VF0030 MF EZ805U	1070	2060	12.00	12/1	1300	1300	3000	178	5.5	111	93
200	418	632	100	2.3	P821_0050 KX801VF0020 MF EZ805U	1330	2580	10.00	10/1	1100	1100	2500	184	5	128	93
250	334	505	100	2.3	P821_0040 KX801VF0020 MF EZ805U	1070	2060	8.000	8/1	1100	1100	2500	186	5.5	111	93
286	292	442	114	3.4	P821_0070 KX801VF0010 MF EZ805U	1370	2800	7.000	7/1	1000	750	2000	215	4.5	142	93
333	251	379	100	2.3	P821_0030 KX801VF0020 MF EZ805U	800	1550	6.000	6/1	1100	1100	2500	192	6.5	84	93
400	209	316	84	4.6	P821_0050 KX801VF0010 MF EZ805U	980	2160	5.000	5/1	1000	750	2000	220	5	128	93
500	167	253	84	4.6	P821_0040 KX801VF0010 MF EZ805U	780	1730	4.000	4/1	1000	750	2000	226	5.5	111	93
667	125	189	84	4.6	P821_0030 KX801VF0010 MF EZ805U	590	1300	3.000	3/1	1000	750	2000	250	6.5	84	93
P8KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 1600 Nm)																
14	845	924	133	1.2	P822_0700 KX701VF0030 MF EZ501U	1400	2800	210.0	210/1	2100	2100	4000	15	4	164	48
20	604	660	95	1.7	P822_0500 KX701VF0030 MF EZ501U	1600	3200	150.0	150/1	2100	2100	4000	15	4	167	48
21	563	616	121	1.8	P822_0700 KX701VF0020 MF EZ501U	1400	2800	140.0	140/1	1800	1800	3500	18	4	164	48
21	969	1048	207	1.0	P822_0700 KX701VF0020 MF EZ502U	1400	2800	140.0	140/1	1800	1800	3500	20	4	164	50
25	483	528	95	1.7	P822_0400 KX701VF0030 MF EZ501U	1600	3180	120.0	120/1	2100	2100	4000	15	4.5	161	48
29	422	462	67	2.4	P822_0350 KX701VF0030 MF EZ501U	1570	3200	105.0	105/1	2100	2100	4000	15	4.5	168	48
29	727	786	115	1.4	P822_0350 KX701VF0030 MF EZ502U	1600	3200	105.0	105/1	2100	2100	4000	18	4.5	168	50
29	727	816	115	1.4	P822_0350 KX701VF0030 MF EZ701U	1600	3200	105.0	105/1	2100	2100	4000	21	4.5	168	52
29	953	1091	151	1.0	P822_0350 KX701VF0030 MF EZ503U	1600	3200	105.0	105/1	2100	2100	4000	20	4.5	168	51
30	402	440	86	2.5	P822_0500 KX701VF0020 MF EZ501U	1500	3200	100.0	100/1	1800	1800	3500	18	4	167	48
30	692	749	148	1.4	P822_0500 KX701VF0020 MF EZ502U	1600	3200	100.0	100/1	1800	1800	3500	20	4	167	50
30	692	777	148	1.4	P822_0500 KX701VF0020 MF EZ701U	1600	3200	100.0	100/1	1800	1800	3500	23	4	167	52
30	908	1039	194	1.1	P822_0500 KX701VF0020 MF EZ503U	1600	3200	100.0	100/1	1800	1800	3500	22	4	167	51
36	338	369	67	2.4	P822_0280 KX701VF0030 MF EZ501U	1260	3180	84.00	84/1	2100	2100	4000	15	4.5	163	48
36	582	629	115	1.4	P822_0280 KX701VF0030 MF EZ502U	1600	3180	84.00	84/1	2100	2100	4000	18	4.5	163	50
36	582	652	115	1.4	P822_0280 KX701VF0030 MF EZ701U	1570	3180	84.00	84/1	2100	2100	4000	21	4.5	163	52
36	762	872	151	1.0	P822_0280 KX701VF0030 MF EZ503U	1600	3180	84.00	84/1	2100	2100	4000	20	4.5	163	51
38	322	352	86	2.5	P822_0400 KX701VF0020 MF EZ501U	1200	3180	80.00	80/1	1800	1800	3500	18	4.5	161	48
38	554	599	148	1.4	P822_0400 KX701VF0020 MF EZ502U	1600	3180	80.00	80/1	1800	1800	3500	20	4.5	161	50
38	554	621	148	1.4	P822_0400 KX701VF0020 MF EZ701U	1500	3180	80.00	80/1	1800	1800	3500	23	4.5	161	52
38	726	831	194	1.1	P822_0400 KX701VF0020 MF EZ503U	1600	3180	80.00	80/1	1800	1800	3500	22	4.5	161	51
40	302	330	48	3.3	P822_0250 KX701VF0030 MF EZ501U	1120	3200	75.00	75/1	2100	2100	4000	16	4.5	166	48
40	519	561	82	1.9	P822_0250 KX701VF0030 MF EZ502U	1600	3200	75.00	75/1	2100	2100	4000	18	4.5	166	50
40	519	583	82	1.9	P822_0250 KX701VF0030 MF EZ701U	1400	3200	75.00	75/1	2100	2100	4000	21	4.5	166	52
40	681	779	108	1.5	P822_0250 KX701VF0030 MF EZ503U	1600	3200	75.00	75/1	2100	2100	4000	20	4.5	166	51
40	842	1011	133	1.2	P822_0250 KX701VF0030 MF EZ702U	1600	3200	75.00	75/1	2100	2100	4000	26	4.5	166	54
40	947	1123	150	1.1	P822_0250 KX701VF0030 MF EZ505U	1600	3200	75.00	75/1	2100	2100	4000	25	4.5	166	54
43	282	308	60	3.6	P822_0350 KX701VF0020 MF EZ501U	1050	3200	70.00	70/1	1800	1800	3500	18	4.5	168	48
43	485	524	104	2.1	P822_0350 KX701VF0020 MF EZ502U	1600	3200	70.00	70/1	1800	1800	3500	20	4.5	168	50
43	485	544	104	2.1	P822_0350 KX701VF0020 MF EZ701U	1310	3200	70.00	70/1	1800	1800	3500	24	4.5	168	52
43	635	727	136	1.6	P822_0350 KX701VF0020 MF EZ503U	1600	3200	70.00	70/1	1800	1800	3500	23	4.5	168	51
43	786	943	168	1.3	P822_0350 KX701VF0020 MF EZ702U	1600	3200	70.00	70/1	1800	1800	3500	29	4.5	168	54
43	884	1048	189	1.1	P822_0350 KX701VF0020 MF EZ505U	1600	3200	70.00	70/1	1800	1800	3500	27	4.5	168	54
47	258	281	69	3.1	P822_0320 KX701VF0020 MF EZ501U	960	2400	64.00	64/1	1800	1800	3500	18	4.5	157	48
47	443	479	119	1.8	P822_0320 KX701VF0020 MF EZ502U	1200	2400	64.00	64/1	1800	1800	3500	21	4.5	157	50
47	443	497	119	1.8	P822_0320 KX701VF0020 MF EZ701U	1200	2400	64.00	64/1	1800	1800	3500	24	4.5	157	52
47	581	665	155	1.4	P822_0320 KX701VF0020 MF EZ503U	1200	2400	64.00	64/1	1800	1800	3500	23	4.5	157	51
47	719	862	192	1.1	P822_0320 KX701VF0020 MF EZ702U	1200	2400	64.00	64/1	1800	1800	3500	29	4.5	157	54
50	241	264	38	4.1	P822_0200 KX701VF0030 MF EZ501U	900	3200	60.00	60/1	2100	2100	4000	16	4.5	164	48
50	415	449	66	2.4	P822_0200 KX701VF0030 MF EZ502U	1600	3200	60.00	60/1	2100	2100	4000	18	4.5	164	50
50	415	466	66	2.4	P822_0200 KX701VF0030 MF EZ701U	1120	3200	60.00	60/1	2100	2100	4000	21	4.5	164	52
50	545	623	86	1.8	P822_0200 KX701VF0030 MF EZ503U	1600	3200	60.00	60/1	2100	2100	4000	20	4.5	164	51
50	674	808	106	1.5	P822_0200 KX701VF0030 MF EZ702U	1600	3200	60.00	60/1	2100	2100	4000	27	4.5	164	54
50	758	898	120	1.3	P822_0200 KX701VF0030 MF EZ505U	1600	3200	60.00	60/1	2100	2100	4000	25	4.5	164	54
50	926	1168	146	1.1	P822_0200 KX701VF0030 MF EZ703U	1600	3200	60.00	60/1	2100	2100	4000	34	4.5	164	56
54	225	246	60	3.6	P822_0280 KX701VF0020 MF EZ501U	840	3180	56.00	56/1	1800	1800	3500	18	4.5	163	48
54	388	419	104	2.1	P822_0280 KX701VF0020 MF EZ502U	1600	3180	56.00	56/1	1800	1800	3500	20	4.5	163	50
54	388	435	104	2.1	P822_0280 KX701VF0020 MF EZ701U	1050	3180	56.00	56/1	1800	1800	3500	24	4.5	163	52

STOBER

PKX

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/arcmin]	m [kg]
P8KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 1600 Nm)																
54	508	582	136	1.6	P822_0280 KX701VF0020 MF EZ503U	1600	3180	56.00	56/1	1800	1800	3500	23	4.5	163	51
54	629	755	168	1.3	P822_0280 KX701VF0020 MF EZ702U	1600	3180	56.00	56/1	1800	1800	3500	29	4.5	163	54
54	707	838	189	1.1	P822_0280 KX701VF0020 MF EZ505U	1600	3180	56.00	56/1	1800	1800	3500	27	4.5	163	54
60	201	220	43	5.0	P822_0250 KX701VF0020 MF EZ501U	750	3200	50.00	50/1	1800	1800	3500	18	4.5	166	48
60	346	374	74	2.9	P822_0250 KX701VF0020 MF EZ502U	1450	3200	50.00	50/1	1800	1800	3500	20	4.5	166	50
60	346	388	74	2.9	P822_0250 KX701VF0020 MF EZ701U	940	3200	50.00	50/1	1800	1800	3500	24	4.5	166	52
60	454	519	97	2.2	P822_0250 KX701VF0020 MF EZ503U	1600	3200	50.00	50/1	1800	1800	3500	23	4.5	166	51
60	561	674	120	1.8	P822_0250 KX701VF0020 MF EZ702U	1600	3200	50.00	50/1	1800	1800	3500	29	4.5	166	54
60	632	749	135	1.6	P822_0250 KX701VF0020 MF EZ505U	1600	3200	50.00	50/1	1800	1800	3500	27	4.5	166	54
60	772	973	165	1.3	P822_0250 KX701VF0020 MF EZ703U	1600	3200	50.00	50/1	1800	1800	3500	37	4.5	166	56
75	277	299	59	3.6	P822_0200 KX701VF0020 MF EZ502U	1160	3200	40.00	40/1	1800	1800	3500	21	4.5	164	50
75	277	311	59	3.6	P822_0200 KX701VF0020 MF EZ701U	750	3200	40.00	40/1	1800	1800	3500	24	4.5	164	52
75	363	415	78	2.8	P822_0200 KX701VF0020 MF EZ503U	1600	3200	40.00	40/1	1800	1800	3500	23	4.5	164	51
75	449	539	96	2.2	P822_0200 KX701VF0020 MF EZ702U	1530	3200	40.00	40/1	1800	1800	3500	29	4.5	164	54
75	505	599	108	2.0	P822_0200 KX701VF0020 MF EZ505U	1600	3200	40.00	40/1	1800	1800	3500	28	4.5	164	54
75	618	779	132	1.6	P822_0200 KX701VF0020 MF EZ703U	1600	3200	40.00	40/1	1800	1800	3500	37	4.5	164	56
75	797	1130	171	1.3	P822_0200 KX701VF0020 MF EZ705U	1600	3200	40.00	40/1	1800	1800	3500	50	4.5	164	62
86	242	262	87	4.1	P822_0350 KX701VF0010 MF EZ502U	1020	3200	35.00	35/1	1800	1600	3000	31	4.5	168	50
86	242	272	87	4.1	P822_0350 KX701VF0010 MF EZ701U	660	3200	35.00	35/1	1800	1600	3000	35	4.5	168	52
86	318	364	114	3.1	P822_0350 KX701VF0010 MF EZ503U	1410	3200	35.00	35/1	1800	1600	3000	34	4.5	168	51
86	393	472	142	2.5	P822_0350 KX701VF0010 MF EZ702U	1340	3200	35.00	35/1	1800	1600	3000	40	4.5	168	54
86	442	524	159	2.3	P822_0350 KX701VF0010 MF EZ505U	1600	3200	35.00	35/1	1800	1600	3000	38	4.5	168	54
86	540	681	195	1.9	P822_0350 KX701VF0010 MF EZ703U	1600	3200	35.00	35/1	1800	1600	3000	48	4.5	168	56
86	698	989	251	1.4	P822_0350 KX701VF0010 MF EZ705U	1600	3200	35.00	35/1	1800	1600	3000	60	4.5	168	62
86	730	1215	263	1.4	P822_0350 KX701VF0010 MF EZ802U	1600	3200	35.00	35/1	1800	1600	3000	84	4.5	168	70
94	222	240	59	3.6	P822_0160 KX701VF0020 MF EZ502U	930	3180	32.00	32/1	1800	1800	3500	21	4.5	158	50
94	222	249	59	3.6	P822_0160 KX701VF0020 MF EZ701U	600	3180	32.00	32/1	1800	1800	3500	24	4.5	158	52
94	290	332	78	2.8	P822_0160 KX701VF0020 MF EZ503U	1290	3180	32.00	32/1	1800	1800	3500	23	4.5	158	51
94	359	431	96	2.2	P822_0160 KX701VF0020 MF EZ702U	1230	3180	32.00	32/1	1800	1800	3500	29	4.5	158	54
94	404	479	108	2.0	P822_0160 KX701VF0020 MF EZ505U	1600	3180	32.00	32/1	1800	1800	3500	28	4.5	158	54
94	494	623	132	1.6	P822_0160 KX701VF0020 MF EZ703U	1600	3180	32.00	32/1	1800	1800	3500	37	4.5	158	56
94	638	904	171	1.3	P822_0160 KX701VF0020 MF EZ705U	1600	3180	32.00	32/1	1800	1800	3500	50	4.5	158	62
94	668	1111	179	1.2	P822_0160 KX701VF0020 MF EZ802U	1600	3180	32.00	32/1	1800	1800	3500	74	4.5	158	70
100	212	238	52	3.3	P821_0100 KX801VF0030 MF EZ701U	570	2400	30.00	30/1	1300	1300	3000	52	4	139	56
100	344	413	84	2.0	P821_0100 KX801VF0030 MF EZ702U	1180	2400	30.00	30/1	1300	1300	3000	57	4	139	58
100	473	596	116	1.5	P821_0100 KX801VF0030 MF EZ703U	1200	2400	30.00	30/1	1300	1300	3000	65	4	139	60
100	611	866	149	1.1	P821_0100 KX801VF0030 MF EZ705U	1200	2400	30.00	30/1	1300	1300	3000	78	4	139	66
125	170	190	36	4.7	P821_0080 KX801VF0030 MF EZ701U	460	2400	24.00	24/1	1300	1300	3000	52	4.5	142	56
125	275	330	59	2.9	P821_0080 KX801VF0030 MF EZ702U	940	2400	24.00	24/1	1300	1300	3000	57	4.5	142	58
125	378	477	81	2.1	P821_0080 KX801VF0030 MF EZ703U	1200	2400	24.00	24/1	1300	1300	3000	65	4.5	142	60
125	488	693	104	1.6	P821_0080 KX801VF0030 MF EZ705U	1200	2400	24.00	24/1	1300	1300	3000	78	4.5	142	66
125	511	851	109	1.6	P821_0080 KX801VF0030 MF EZ802U	1200	2400	24.00	24/1	1300	1300	3000	102	4.5	142	74
143	241	289	41	4.2	P821_0070 KX801VF0030 MF EZ702U	820	2800	21.00	21/1	1300	1300	3000	58	4.5	142	58
143	331	417	57	3.0	P821_0070 KX801VF0030 MF EZ703U	1300	2800	21.00	21/1	1300	1300	3000	65	4.5	142	60
143	427	606	73	2.3	P821_0070 KX801VF0030 MF EZ705U	1400	2800	21.00	21/1	1300	1300	3000	78	4.5	142	66
143	447	744	77	2.2	P821_0070 KX801VF0030 MF EZ802U	1400	2800	21.00	21/1	1300	1300	3000	102	4.5	142	74
143	534	967	91	1.9	P821_0070 KX801VF0030 MF EZ803U	1400	2800	21.00	21/1	1300	1300	3000	127	4.5	142	80
200	172	206	35	4.9	P821_0050 KX801VF0030 MF EZ702U	590	2580	15.00	15/1	1300	1300	3000	58	5	128	58
200	236	298	48	3.6	P821_0050 KX801VF0030 MF EZ703U	930	2580	15.00	15/1	1300	1300	3000	66	5	128	60
200	305	433	62	2.8	P821_0050 KX801VF0030 MF EZ705U	1330	2580	15.00	15/1	1300	1300	3000	78	5	128	66
200	320	532	65	2.7	P821_0050 KX801VF0030 MF EZ802U	1330	2580	15.00	15/1	1300	1300	3000	102	5	128	74
200	381	691	77	2.2	P821_0050 KX801VF0030 MF EZ803U	1330	2580	15.00	15/1	1300	1300	3000	128	5	128	80
250	138	165	35	4.9	P821_0040 KX801VF0030 MF EZ702U	470	2060	12.00	12/1	1300	1300	3000	59	5.5	111	58
250	189	238	48	3.6	P821_0040 KX801VF0030 MF EZ703U	750	2060	12.00	12/1	1300	1300	3000	67	5.5	111	60
250	244	346	62	2.8	P821_0040 KX801VF0030 MF EZ705U	1070	2060	12.00	12/1	1300	1300	3000	79	5.5	111	66
250	256	425	65	2.7	P821_0040 KX801VF0030 MF EZ802U	1070	2060	12.00	12/1	1300	1300	3000	103	5.5	111	74
250	305	553	77	2.2	P821_0040 KX801VF0030 MF EZ803U	1070	2060	12.00	12/1	1300	1300	3000	129	5.5	111	80

STOBER

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 EL1,2,5,6 [rpm]	n_{1max} DB EL3,4 [rpm]	n_{1max} ZB [rpm]	J_1 [10^{-4} kgm²]	$\Delta\varphi_2$ [arcmin]	C_2 [Nm/arcmin]	m [kg]
P9KX (n_{1N} = 2000 rpm, $M_{2acc,max}$ = 3000 Nm)																
57	1431	2165	279	1.4	P922_0350 KX801VF0010 MF EZ805U	3000	6000	35.00	35/1	1000	750	2000	215	4.5	327	128
63	1309	1979	152	1.5	P922_0160 KX801VF0020 MF EZ805U	3000	5530	32.00	32/1	1100	1100	2500	186	4.5	313	128
P9KX (n_{1N} = 3000 rpm, $M_{2acc,max}$ = 3000 Nm)																
14	1454	1631	124	1.4	P922_0700 KX801VF0030 MF EZ701U	2700	5400	210.0	210/1	1300	1300	3000	52	4	315	90
20	1039	1165	89	1.9	P922_0500 KX801VF0030 MF EZ701U	2810	6000	150.0	150/1	1300	1300	3000	52	4	326	90
20	1684	2021	144	1.2	P922_0500 KX801VF0030 MF EZ702U	3000	6000	150.0	150/1	1300	1300	3000	57	4	326	93
25	831	932	71	2.4	P922_0400 KX801VF0030 MF EZ701U	2250	5530	120.0	120/1	1300	1300	3000	52	4.5	324	90
25	1347	1617	115	1.5	P922_0400 KX801VF0030 MF EZ702U	3000	5530	120.0	120/1	1300	1300	3000	57	4.5	324	93
29	727	816	62	2.8	P922_0350 KX801VF0030 MF EZ701U	1970	6000	105.0	105/1	1300	1300	3000	52	4.5	327	90
29	1179	1415	101	1.7	P922_0350 KX801VF0030 MF EZ702U	3000	6000	105.0	105/1	1300	1300	3000	58	4.5	327	93
29	1621	2044	139	1.2	P922_0350 KX801VF0030 MF EZ703U	3000	6000	105.0	105/1	1300	1300	3000	65	4.5	327	95
36	582	652	50	3.4	P922_0280 KX801VF0030 MF EZ701U	1570	5530	84.00	84/1	1300	1300	3000	52	4.5	326	90
36	943	1132	81	2.1	P922_0280 KX801VF0030 MF EZ702U	3000	5530	84.00	84/1	1300	1300	3000	58	4.5	326	93
36	1297	1635	111	1.5	P922_0280 KX801VF0030 MF EZ703U	3000	5530	84.00	84/1	1300	1300	3000	65	4.5	326	95
40	519	583	44	3.9	P922_0250 KX801VF0030 MF EZ701U	1400	6000	75.00	75/1	1300	1300	3000	53	4.5	324	90
40	842	1011	72	2.4	P922_0250 KX801VF0030 MF EZ702U	2880	6000	75.00	75/1	1300	1300	3000	58	4.5	324	93
40	1158	1460	99	1.7	P922_0250 KX801VF0030 MF EZ703U	3000	6000	75.00	75/1	1300	1300	3000	66	4.5	324	95
40	1495	2119	128	1.3	P922_0250 KX801VF0030 MF EZ705U	3000	6000	75.00	75/1	1300	1300	3000	78	4.5	324	100
50	415	466	36	4.8	P922_0200 KX801VF0030 MF EZ701U	1120	6000	60.00	60/1	1300	1300	3000	54	4.5	319	90
50	674	808	58	3.0	P922_0200 KX801VF0030 MF EZ702U	2300	6000	60.00	60/1	1300	1300	3000	59	4.5	319	93
50	926	1168	79	2.2	P922_0200 KX801VF0030 MF EZ703U	3000	6000	60.00	60/1	1300	1300	3000	67	4.5	319	95
50	1196	1696	102	1.7	P922_0200 KX801VF0030 MF EZ705U	3000	6000	60.00	60/1	1300	1300	3000	79	4.5	319	100
50	1252	2083	107	1.6	P922_0200 KX801VF0030 MF EZ802U	3000	6000	60.00	60/1	1300	1300	3000	103	4.5	319	109

14.3 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.

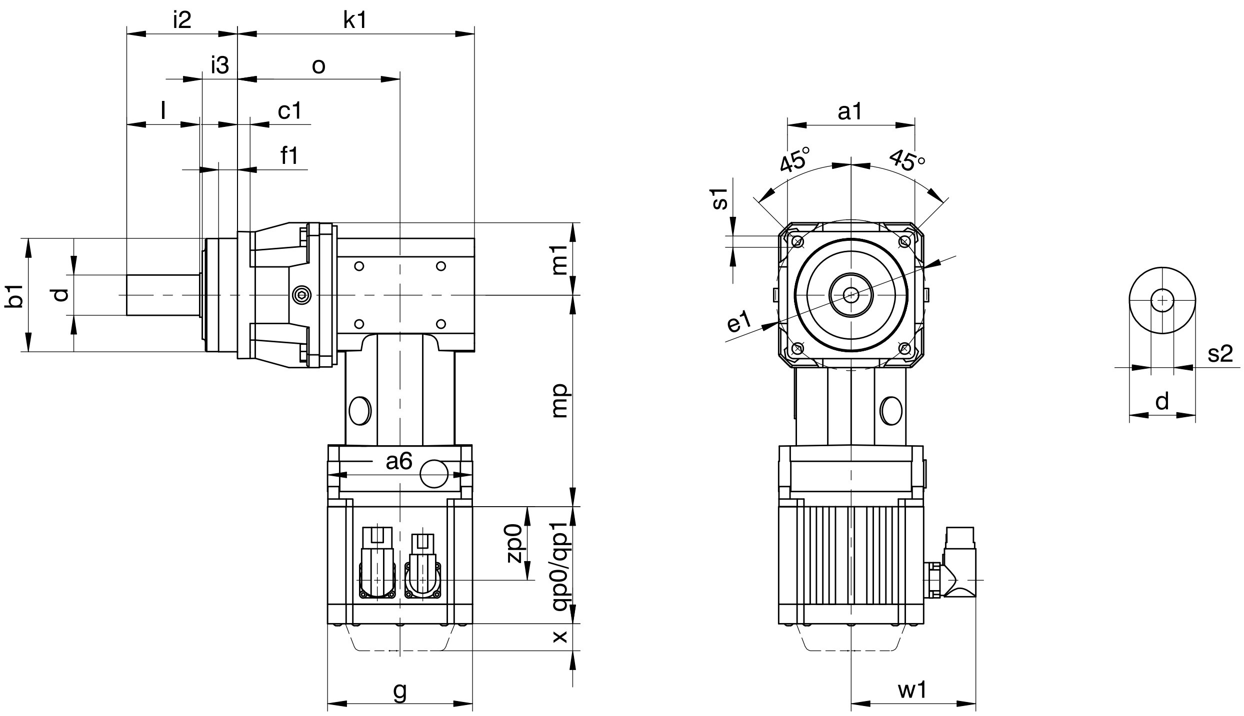
Tolerances

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

14.3.1 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	∅b1	c1	∅d	∅e1	f1	i2	i3	k1	l	m1	o	∅s1	s2
P221_KX301_	55	50_{h6}	6	12_{k6}	63	7.0	36	12	124.0	22	31.0	84.0	5.5	M4
P321_KX301_	72	60_{h6}	7	16_{k6}	75	7.5	48	18	136.0	28	36.0	96.0	5.5	M5
P322_KX301_	72	60_{h6}	7	16_{k6}	75	7.5	48	18	176.0	28	36.0	136.0	5.5	M5
P421_KX401_	76	70_{h6}	9	22_{k6}	85	7.5	56	18	163.0	36	49.0	113.0	6.6	M8
P422_KX301_	76	70_{h6}	9	22_{k6}	85	7.5	56	18	193.5	36	49.0	153.5	6.6	M8
P521_KX501_	101	90_{h6}	10	32_{k6}	120	15.0	88	28	188.0	58	57.0	129.0	9.0	M12
P522_KX401_	101	90_{h6}	10	32_{k6}	120	15.0	88	28	220.5	58	57.0	170.5	9.0	M12
P721_KX701_	145	130_{h6}	15	40_{k6}	165	3.5	112	27	231.0	82	72.5	157.0	11.0	M16
P722_KX501_	145	130_{h6}	15	40_{k6}	165	3.5	112	27	265.0	82	72.5	206.0	11.0	M16
P821_KX801_	190	160_{h6}	15	55_{k6}	215	10.0	112	27	305.0	82	95.0	213.0	13.5	M20
P822_KX701_	190	160_{h6}	15	55_{k6}	215	10.0	112	27	339.5	82	95.0	265.5	13.5	M20
P922_KX801_	212	180_{h6}	17	75_{k6}	250	10.0	143	34	432.0	105	112.5	340.0	17.5	M20

STOBER

PKX

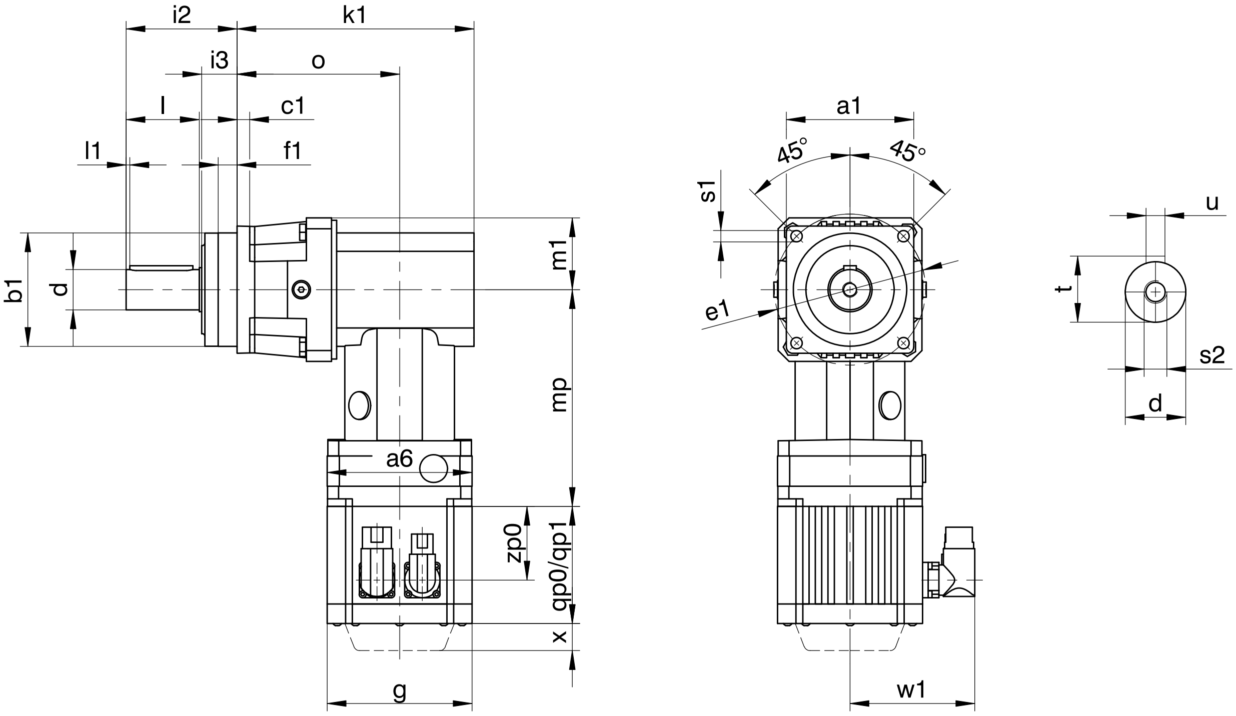
Dimensions of motors

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	
	□a6	mp	□a6	mp	□a6	mp	□a6	mp	□a6	mp
P221_KX301_	75	139.5	100	134.0	–	–	–	–	–	–
P321_KX301_	75	139.5	100	134.0	–	–	–	–	–	–
P322_KX301_	75	139.5	–	–	–	–	–	–	–	–
P421_KX401_	100	151.0	100	145.5	115	150.0	140	153.0	–	–
P422_KX301_	75	139.5	100	134.0	–	–	–	–	–	–
P521_KX501_	–	–	115	176.5	140	172.0	115	183.0	–	–
P522_KX401_	100	151.0	100	145.5	115	150.0	–	–	–	–
P721_KX701_	–	–	–	–	145	214.5	190	217.5	145	242.5
P722_KX501_	–	–	115	176.5	140	172.0	115	183.0	–	–
P821_KX801_	–	–	–	–	–	–	190	263.0	190	269.0
P822_KX701_	–	–	–	–	145	214.5	190	217.5	145	242.5
P922_KX801_	–	–	–	–	–	–	190	263.0	190	269.0

14.3.2 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	∅b1	c1	∅d	∅e1	f1	i2	i3	k1	l	l1	m1	o	∅s1	s2	t	u
P221_KX301_	55	50_{h6}	6	12_{k6}	63	7.0	36	12	124.0	22	2	31.0	84.0	5.5	M4	13.5	A4x4x18
P321_KX301_	72	60_{h6}	7	16_{k6}	75	7.5	48	18	136.0	28	2	36.0	96.0	5.5	M5	18.0	A5x5x22
P322_KX301_	72	60_{h6}	7	16_{k6}	75	7.5	48	18	176.0	28	2	36.0	136.0	5.5	M5	18.0	A5x5x22
P421_KX401_	76	70_{h6}	9	22_{k6}	85	7.5	56	18	163.0	36	3	49.0	113.0	6.6	M8	24.5	A6x6x28
P422_KX301_	76	70_{h6}	9	22_{k6}	85	7.5	56	18	193.5	36	3	49.0	153.5	6.6	M8	24.5	A6x6x28
P521_KX501_	101	90_{h6}	10	32_{k6}	120	15.0	88	28	188.0	58	3	57.0	129.0	9.0	M12	35.0	A10x8x50
P522_KX401_	101	90_{h6}	10	32_{k6}	120	15.0	88	28	220.5	58	3	57.0	170.5	9.0	M12	35.0	A10x8x50
P721_KX701_	145	130_{h6}	15	40_{k6}	165	3.5	112	27	231.0	82	4	72.5	157.0	11.0	M16	43.0	A12x8x70
P722_KX501_	145	130_{h6}	15	40_{k6}	165	3.5	112	27	265.0	82	4	72.5	206.0	11.0	M16	43.0	A12x8x70
P821_KX801_	190	160_{h6}	15	55_{k6}	215	10.0	112	27	305.0	82	6	95.0	213.0	13.5	M20	59.0	A16x10x70
P822_KX701_	190	160_{h6}	15	55_{k6}	215	10.0	112	27	339.5	82	6	95.0	265.5	13.5	M20	59.0	A16x10x70
P922_KX801_	212	180_{h6}	17	75_{k6}	250	10.0	143	34	432.0	105	7	112.5	340.0	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	
	□a6	mp	□a6	mp	□a6	mp	□a6	mp	□a6	mp
P221_KX301_	75	139.5	100	134.0	–	–	–	–	–	–
P321_KX301_	75	139.5	100	134.0	–	–	–	–	–	–
P322_KX301_	75	139.5	–	–	–	–	–	–	–	–
P421_KX401_	100	151.0	100	145.5	115	150.0	140	153.0	–	–
P422_KX301_	75	139.5	100	134.0	–	–	–	–	–	–
P521_KX501_	–	–	115	176.5	140	172.0	115	183.0	–	–
P522_KX401_	100	151.0	100	145.5	115	150.0	–	–	–	–
P721_KX701_	–	–	–	–	145	214.5	190	217.5	145	242.5
P722_KX501_	–	–	115	176.5	140	172.0	115	183.0	–	–
P821_KX801_	–	–	–	–	–	–	190	263.0	190	269.0
P822_KX701_	–	–	–	–	145	214.5	190	217.5	145	242.5
P922_KX801_	–	–	–	–	–	–	190	263.0	190	269.0

14.4 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	7	2	1	S	G	R	0050	KX701VF	0030	MF	EZ703U

Explanation

Code	Designation	Design
P	Type	Planetary gear unit
7	Size	7 (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
0050	Transmission ratio of output (i x 10)	i = 5 (example)
KX701 VF	Input	KX7 right-angle geared motor (example)
0030	Transmission ratio of input (i x 10)	i = 3 (example)
MF	Attachment to EZ	MF motor adapter
EZ703U	Motor	EZ synchronous servo motor

In order to complete the type designation, also specify:

- A detailed type designation of the motor, see Chapter [▷ 22]
- The installation position, see Chapter [▷ 14.5.2]
- Radial shaft seal rings at the output made of FKM or NBR, see Chapter [▷ 14.6.3]
- The position of the plug connectors, see Chapter [▷ 14.5.4]
- For reverse operation of the output shaft at ± 20° to ± 90° and horizontal installation, note Chapter [▷ 14.6.4]

14.5 Product description

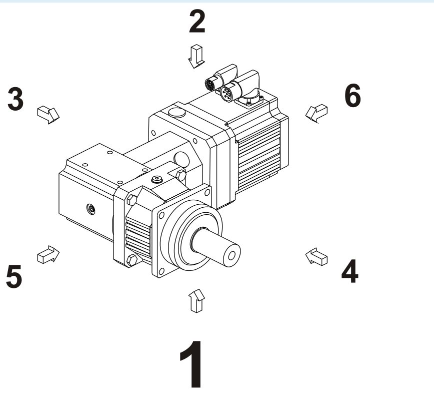
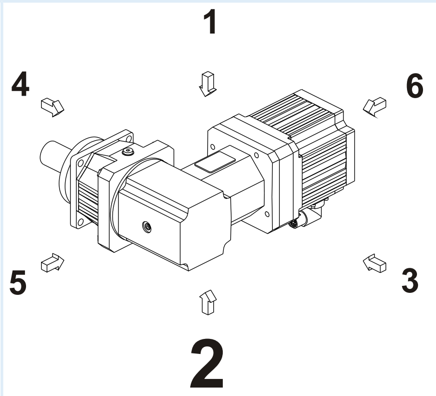
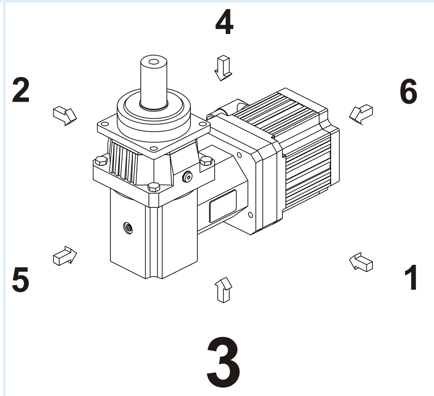
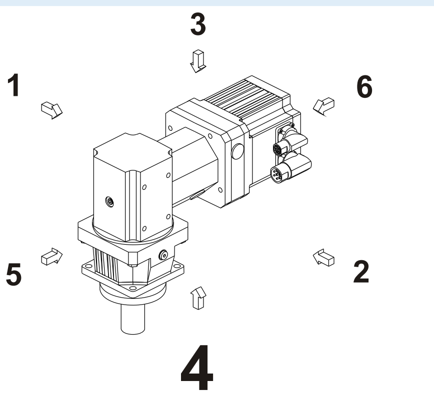
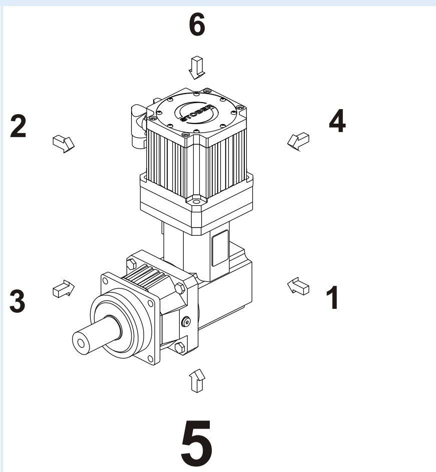
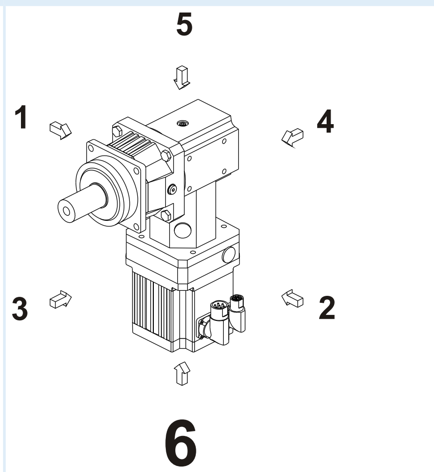
14.5.1 Installation conditions

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).

14.5.2 Installation positions

The following table shows the standard installation positions.

The numbers identify the gear unit sides. The installation position is defined by the gear side facing downwards.

EL1	EL2	EL3
		
EL4	**EL5**	**EL6**
		

Since the lubricant filling volume of the gear unit depends on the installation position, the installation position must be specified when ordering.

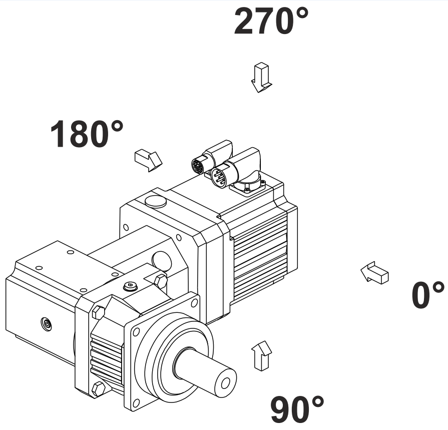
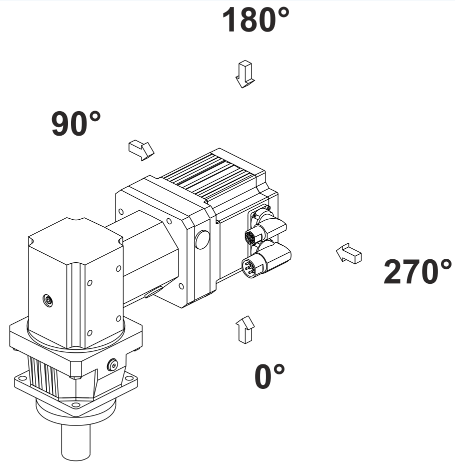
14.5.3 Lubricants

STOBER fills the gear units with the amount and type of lubricant specified on the nameplate. The filling volume and the structure of the gear units depend on the installation position.

Only install the gear units in the intended installation position! Reposition the gear units only after consulting STOBER. Otherwise, STOBER assumes no liability for the gear units.

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

14.5.4 Position of the plug connectors

Installation position EL1 Plug connector in 270° position (standard)	Installation position EL4 Plug connector in 270° position (standard)
	

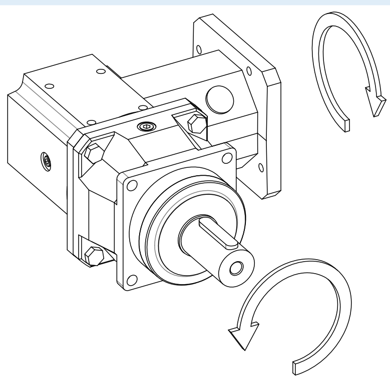
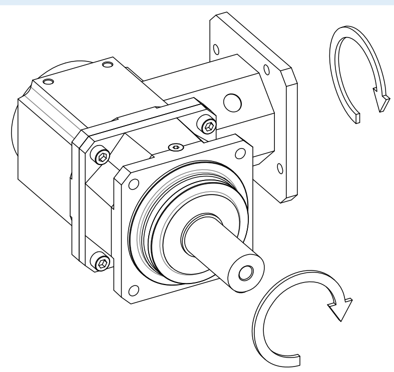
Indicate variations for your geared motor in the purchase order.

Note that the plug connector position rotates along with the geared motor if the geared motor is in another installation position.

14.5.5 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

14.5.6 Direction of rotation

P2_KX_ – P5_KX_	P7_KX_ – P9_KX_
	

The pictures show installation position EL1.

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

STOBER

14.6 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 $K_{mot,th}$
a_{thEL}	–	Parameters for calculating $K_{mot,th}$ (dependent on the installation position)
ED	%	Duty cycle relative to 20 minutes
fB_{op}	–	Operating mode operating factor
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

PKX

Formula symbol	Unit	Explanation
$M_{2k,acc,1*}$	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
n_{1m*}	rpm	Actual average input speed
n_{1max*}	rpm	Actual maximum input speed
$n_{1maxDBEL1,2,5,6}$	rpm	Maximum permitted input speed of the gear unit in continuous operation Installation positions EL1, EL2, EL5, EL6
$n_{1maxDBEL3,4}$	rpm	Maximum permitted input speed of the gear unit in continuous operation Installation positions EL3, EL4
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

14.6.1 Calculation of the operating point

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

For installation positions EL1, EL2, EL5, EL6:

$$n_{1m*} \leq \frac{n_{1maxDBEL1,2,5,6}}{fB_T}$$

For installation positions EL3, EL4:

$$n_{1m*} \leq \frac{n_{1maxDBEL3,4}}{fB_T}$$

$$n_{1max*} \leq \frac{n_{1max\,ZB}}{fB_T}$$

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

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

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

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

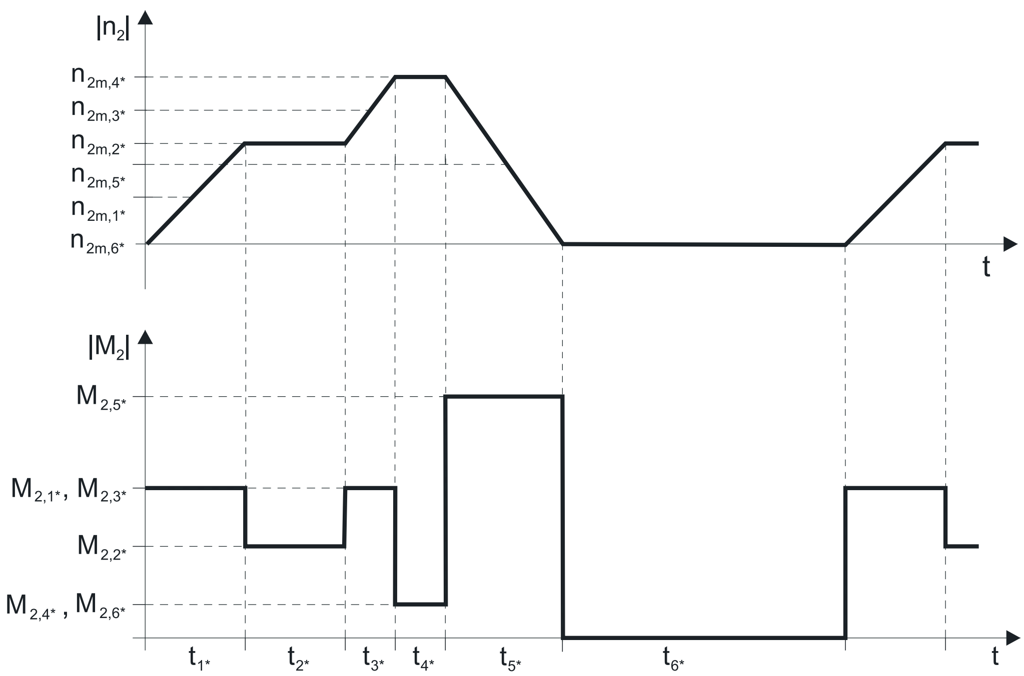
The values for $n_{1maxDBEL1,2,5,6}$, $n_{1maxDBEL3,4}$, n_{1maxZB}, M_{2acc}, M_{2NOT}, M_{2N} and S can be found in the selection tables.

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

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

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

If t_{1*} + ... + $t_{5*} \geq 20$ 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

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

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.)

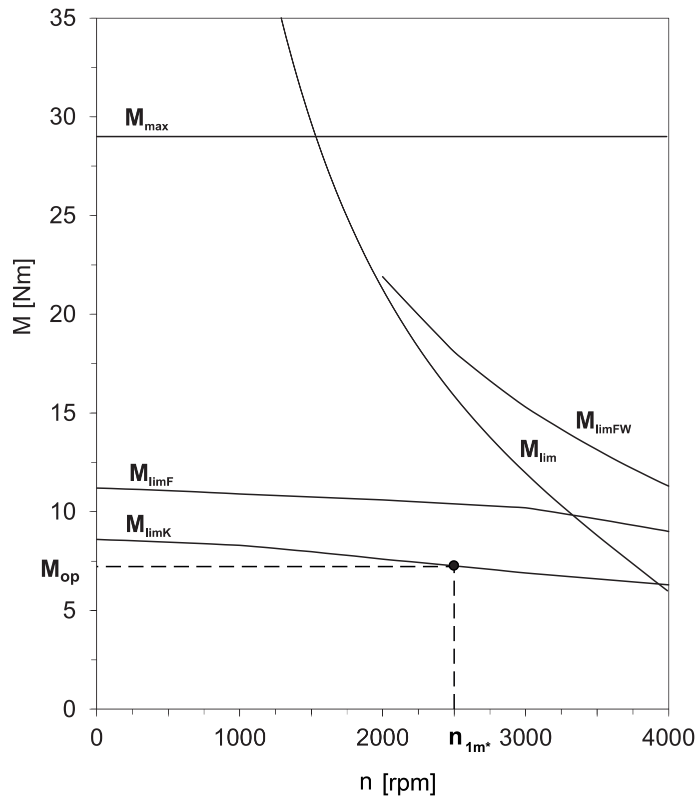
$$M_{2th} = M_{op} \cdot i \cdot K_{mot,th}$$

$$K_{mot,th} = 0{,}9 - \frac{a_{th}}{1000} \cdot athEL \cdot fB_T \cdot \left(\frac{n_{1m^*}}{1000}\right)^3$$

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

The values for a_{thEL} and fB_T can be found in the corresponding tables 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

Parameter a_{thEL}

Installation position	a_{thEL}
EL1, 2, 5, 6	1.0
EL3, 4	1.1

Operating mode	fB_{op}
Uniform continuous operation	1.00
Cyclic operation	1.25
Reversing load cyclic operation	1.40

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.

14.6.2 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*} ≤ 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

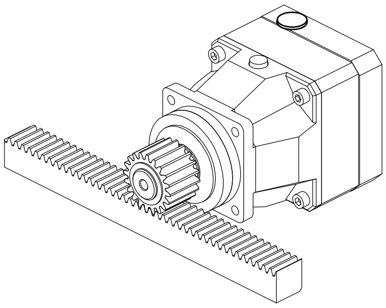


Fig. 1: Recommendation for bearing assignment R

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

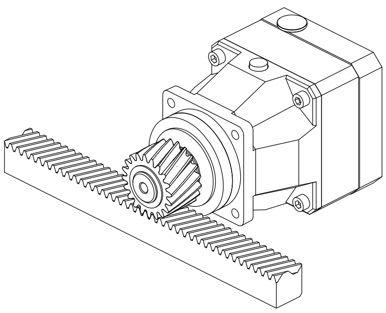


Fig. 2: Recommendation for bearing assignment D

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

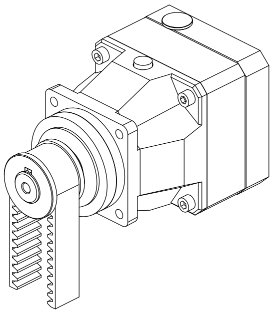


Fig. 3: Recommendation for bearing assignment Z

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

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

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

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

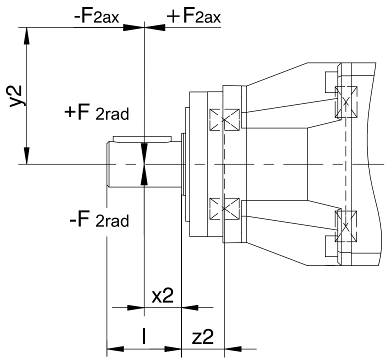


Fig. 4: Force application points

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:

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

14.6.3 Recommendation for radial shaft seal rings

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

Properties:

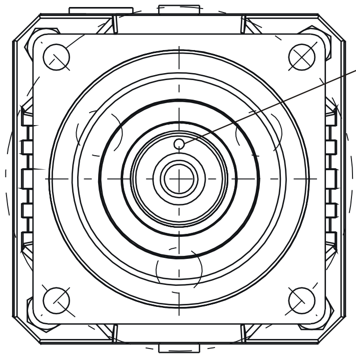
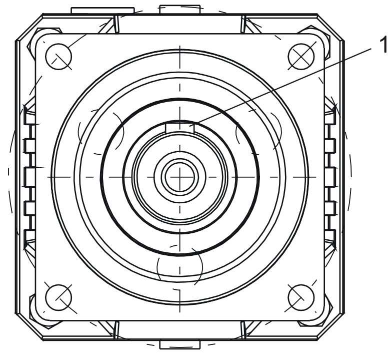
- Excellent temperature resistance
- High chemical stability
- Very good resistance to aging
- Excellent resistance to mineral oils and greases
- For use in the food, beverage and pharmaceutical industries

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.

14.6.4 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.

14.7 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