

# maxon screw drive

Standard Specification No. 102	69
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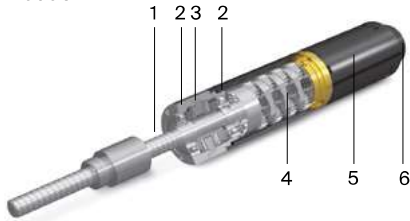
Compact, easy to configure linear actuators as part of a complete system with integrated thrust bearing for high axial loads. Versions available with metric lead screw, trapezoidal lead screw or ball screw.

# Screw Drive Basics

screw drive

## Design

- 1 Screw, directly implemented in the gearhead
- 2 Radial bearing
- 3 Axial bearing
- 4 Planetary gearhead 0–4 stages
- 5 Motor
- 6 Encoder



The particular type of screw required must first be established before a screw drive can be designed. Every type of screw has different characteristics and a number of specific limits. These limits are taken into account in the technical data.

### Ball screw:

- highly efficient
- not self-locking
- high load capacity

### Metric lead screw:

- self-locking
- low costs

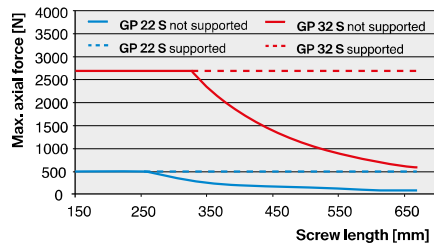
### Trapezoidal lead screw:

- same as metric lead screw
- higher load capacity than metric lead screw

## Feed force

For the calculation of the feed force acceleration and friction forces as well as gravity have to be taken into consideration. Exceeding the maximum permissible load must be avoided, as this damages the screw. The maximum permissible feed force is displayed for standard screws. For longer screws, the permissible feed

Limitation for ball screws



force can be limited by the critical compressive force of the screw. In this case, supporting the end of the screw may be necessary.

## Torque

The required torque of the screw  $M_a$  [mNm] is calculated with the feed force  $F_L$  [N] (load), the thread lead  $p$  [mm] and the efficiency of the screw  $\eta_1$ .

$$M_a = \frac{F_L \cdot p}{2 \cdot \pi \cdot \eta_1}$$

In combination with the gearhead, the required motor torque  $M_{mot}$  [mNm] is:

$$M_{mot} = \frac{F_L \cdot p}{2 \cdot \pi \cdot i \cdot \eta}$$

Where  $i$  is the gearhead reduction ratio and  $\eta$  the efficiency of the complete screw drive.

## Technical Data

The “Technical Data” block contains generally applicable data on screw, nut and gearhead. These are independent of the gearhead reduction ratio.

### Length

The data sheets show the screw drives with the standard lengths. Other lengths are available as an option in 5 mm steps up to a given maximum length. Please give detailed requirements for special lengths.

### Max. efficiency/mass inertia

The values stated refer to the screw alone (without gearhead). The values with gearhead are given in the “Gearhead data” main data field.

### Nut

Standard screw drives are supplied with a thread nut. Flange or cylinder nuts are also available as an option. See details with corresponding reference number on page 422.

### Bearing

The output stage and the screw are supported by preloaded axial bearings. This means that the high axial forces can be absorbed directly by the gearhead without additional support.

## Speed and feed velocity

Feed velocity  $v_L$  [mm/s] is linked to output speed  $n$  [rpm] by the lead  $p$  [mm].

$$v_L = \frac{p \cdot n}{60}$$

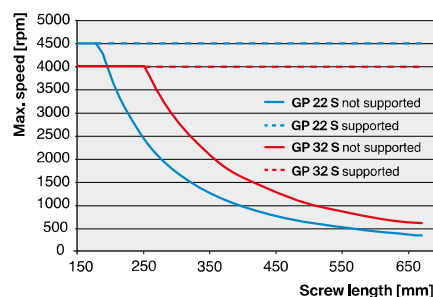
In combination with the gearhead, the motor speed  $n_{mot}$  [rpm] is:

$$n_{mot} = \frac{v_L \cdot 60 \cdot i}{p}$$

Where  $i$  is the gearhead reduction ratio and  $p$  the screw lead.

The screw speed is limited by the resonance frequency of the screw and for ball screws additionally by the ball return system.

In addition, the maximum permissible speed of the gearhead has to be considered.



## Explanation

### 7 Max. efficiency

The given efficiency is a maximum value that applies when loaded with maximum feed force. Efficiency falls sharply with very small loads. The stated value refers to the complete screw drive (gearhead and screw).

### 20 Max. feed velocity

Specifies the maximum permissible feed velocity.

### 21 Max. feed force (continuous)

Is the maximum permissible feed force which may be continuously applied. Exceeding this value results in a reduced service life.

### 22 Max. feed force (intermittent)

Is the maximum permissible feed force which may be intermittently applied. “Intermittently” is defined as follows:

- during max. 1 second
- during max. 10% of operation

Exceeding these values results in a reduced service life.

### 23 Mechanical positioning accuracy

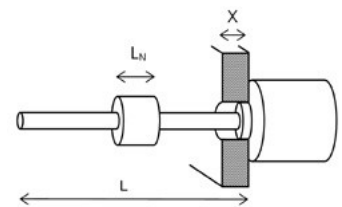
In this value, following factors are taken into consideration:

- backlash of the gearhead
- accuracy of the screw
- axial play of the nut

## Maximum stroke

The maximum possible stroke depends on the length of the screw  $L$  [mm]. The length of the nut  $L_N$  [mm] and the thickness of its mounting plate  $X$  [mm] must be taken into consideration.

$$\text{Stroke} = L - (L_N + X + \text{stroke reserve} + \text{opt. SPIN02})$$



## Mounting and safety instructions

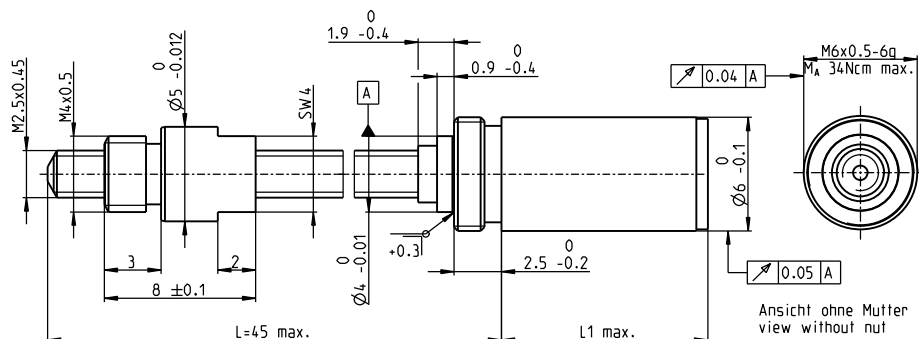
Using a ball screw with a flange nut, the mounting through a hole is only possible with the optional rectangular mounting flange.

The ball screw nut may never be removed. As the balls are preloaded remounting would be impossible.

The screw may never block during operation, as this could damage the screw nut or gearhead. Service life crucially depends on the precision with which the gear is fixed to the screw nut. Eccentricities and angle errors sometimes result in massive radial loading which must never exceed the given maximum value.

Additional information can be found in the maxon online shop at the item under down-loads.

# Screw Drive GP 6 S $\varnothing 6$ mm, Metric Lead Screw



## Technical Data

Screw	M2.5 x 0.45, stainless steel
Standard length	45 mm
Special length (5 mm steps)	max. 80 mm
Nut (standard)	thread nut
Material	bronze
Axial play	< 0.088 mm
Planetary gearhead	straight teeth
Bearing	ball bearing
Radial play, 5 mm from flange	< 0.12 mm
Axial play	preloaded
Max. continuous input speed	12000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	10 N
Number of stages	1 2 3 4 5
Max. radial load, 5 mm from flange	5 N 5 N 5 N 5 N 5 N

## M 2.5:1

- Stock program
- Standard program
- Special program (on request)

## Part Numbers

Screw Drive Data	428758	428757	428756	420663	428755
1 Reduction	3.9 : 1	15 : 1	57 : 1	221 : 1	854 : 1
2 Absolute reduction	$\frac{27}{7}$	$\frac{729}{49}$	$\frac{19683}{343}$	$\frac{531441}{2401}$	$\frac{1438907}{16807}$
20 Max. feed velocity <sup>1</sup>	mm/s 15	10	2.6	0.7	0.2
21 Max. feed force (continuous) <sup>1</sup>	N 2	3	4	6	10
22 Max. feed force (intermittent) <sup>1</sup>	N 6	8	12	15	15
4 Number of stages	1	2	3	4	5
7 Max. efficiency gearhead incl. screw	% 28	24	21	19	16
8 Weight <sup>1</sup>	g 2.9	3.3	3.7	4.1	4.5
9 Average backlash no load	° 1.8	2.0	2.2	2.5	2.8
23 Mechanical positioning accuracy <sup>1</sup>	mm 0.106	0.107	0.107	0.107	0.108
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup> 0.001	0.001	0.001	0.001	0.001
11 Gearhead length L1	mm 6.9	9.4	12.0	14.5	17.1

<sup>1</sup> based on screw length 45 mm



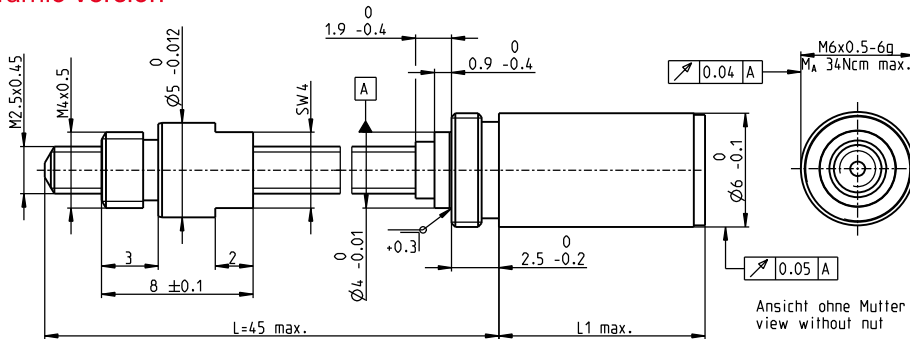
## maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor / brake) + assembly parts				
RE 6, 0,3 W, A	107			22.6	25.1	27.7	30.2	32.8
RE 6, 0,3 W, B	107			26.6	29.1	31.7	34.2	36.8

# Screw Drive GP 6 S Ø6 mm, Metric Lead Screw

Ceramic Version

screw drive



M 5:2

## Technical Data

Screw	M2,5 x 0,45, ceramic
Standard length	45 mm
Special length (5 mm steps)	max. 80 mm
Nut (standard)	thread nut
Material	stainless steel
Axial play	< 0,079 mm
Planetary gearhead	straight teeth
Bearing	ball bearing
Radial play, 5 mm from flange	< 0,12 mm
Axial play	preloaded
Max. continuous input speed	12 000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	10 N
Number of stages	1 2 3 4 5
Max. radial load, 5 mm from flange	5 N 5 N 5 N 5 N 5 N

- Stock program
- Standard program
- Special program (on request)

## Part Numbers

Screw Drive Data	Part Numbers				
	437380	437379	437378	437377	437375
1 Reduction	3.9 : 1	15 : 1	57 : 1	221 : 1	854 : 1
2 Absolute reduction	$\frac{27}{7}$	$\frac{729}{49}$	$\frac{19683}{343}$	$\frac{531441}{2401}$	$\frac{1438907}{16807}$
20 Max. feed velocity <sup>1</sup>	mm/s 25	10	2.6	0.7	0.2
21 Max. feed force (continuous) <sup>1</sup>	N 2	3	5	7	11
22 Max. feed force (intermittent) <sup>1</sup>	N 6	10	15	15	15
4 Number of stages	1	2	3	4	5
7 Max. efficiency gearhead incl. screw	% 39	34	30	27	23
8 Weight <sup>1</sup>	g 2.9	3.3	3.7	4.1	4.5
9 Average backlash no load	° 1.8	2.0	2.2	2.5	2.8
23 Mechanical positioning accuracy <sup>1</sup>	mm 0.081	0.082	0.082	0.082	0.083
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup> 0.001	0.001	0.001	0.001	0.001
11 Gearhead length L1	mm 6.9	9.4	12.0	14.5	17.1

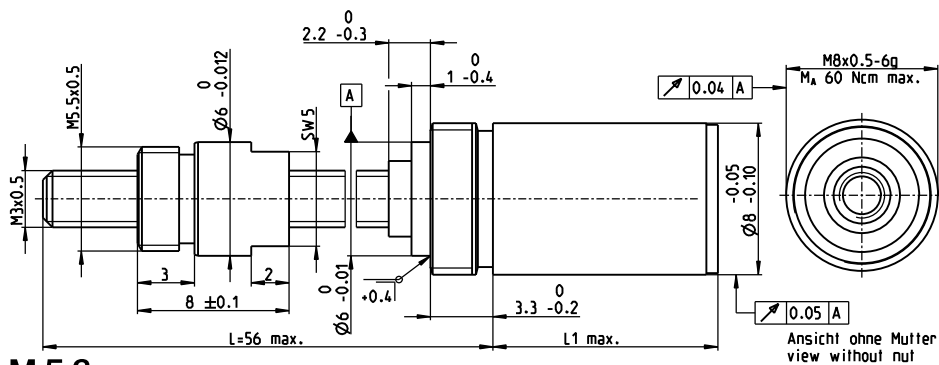
<sup>1</sup> based on screw length 45 mm



## maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor / brake) + assembly parts				
RE 6, 0,3 W, A	107			22.6	25.1	27.7	30.2	32.8
RE 6, 0,3 W, B	107			26.6	29.1	31.7	34.2	36.8

# Screw Drive GP 8 S Ø8 mm, Metric Lead Screw



## Technical Data

Screw	M3 x 0,5, stainless steel
Standard length	56 mm
Special length (5 mm steps)	max. 100 mm
Nut (standard)	thread nut
Material	bronze
Axial play	< 0.1 mm
Planetary gearhead	straight teeth
Bearing	ball bearing
Radial play, 5 mm from flange	< 0.08 mm
Axial play	preloaded
Max. continuous input speed	12000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	25 N
Number of stages	1 2 3 4 5
Max. radial load, 5 mm from flange	5 N 5 N 5 N 5 N 5 N

## M 5:2

- Stock program
- Standard program
- Special program (on request)

## Part Numbers

473643	473644	473645	473646	473647
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## Screw Drive Data

		473643	473644	473645	473646	473647
1 Reduction		4:1	16:1	64:1	256:1	1024:1
2 Absolute reduction		4/1	16/1	64/1	256/1	1024/1
20 Max. feed velocity <sup>1</sup>	mm/s	15	6.3	1.6	0.4	0.1
21 Max. feed force (continuous) <sup>1</sup>	N	3	6	9	14	22
22 Max. feed force (intermittent) <sup>1</sup>	N	8	18	27	27	27
4 Number of stages		1	2	3	4	5
7 Max. efficiency gearhead incl. screw	%	27	24	22	19	17
8 Weight <sup>1</sup>	g	6.3	6.9	7.5	8.1	8.7
9 Average backlash no load	°	1.8	2.0	2.2	2.5	2.8
23 Mechanical positioning accuracy <sup>1</sup>	mm	0.112	0.112	0.112	0.112	0.113
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup>	0,005	0.004	0.004	0,004	0,004
11 Gearhead length L1	mm	7.0	9.6	12.2	14.8	17.4

<sup>1</sup> based on screw length 56 mm



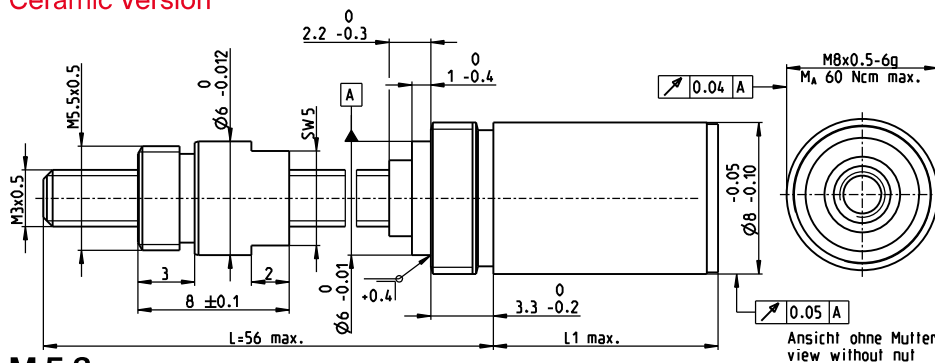
## maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor / brake) + assembly parts				
RE 8, 0,5 W, A	108			23.7	26.3	28.9	31.5	34.1
RE 8, 0,5 W, B	108			26.7	29.3	31.9	34.5	37.1
RE 8, 0,5 W, A	108	MR	458	30.3	32.9	35.5	38.1	40.7
RE 8, 0,5 W, A	108	Enc 8 OPT	465	31.9	34.5	37.1	39.7	42.3

# Screw Drive GP 8 S Ø8 mm, Metric Lead Screw

Ceramic Version

screw drive



## Technical Data

Screw	M3 x 0.5, ceramic
Standard length	56 mm
Special length (5 mm steps)	max. 100 mm
Nut (standard)	thread nut
Material	stainless steel
Axial play	< 0.09 mm
Planetary gearhead	straight teeth
Bearing	ball bearing
Radial play, 5 mm from flange	< 0.08 mm
Axial play	preloaded
Max. continuous input speed	12000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	25 N
Number of stages	1 2 3 4 5
Max. radial load, 5 mm from flange	5 N 5 N 5 N 5 N 5 N

M 5:2

- Stock program
- Standard program
- Special program (on request)

## Part Numbers

	473636	473637	473639	473640	473641
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Screw Drive Data (provisional)		473636	473637	473639	473640	473641
1 Reduction		4:1	16:1	64:1	256:1	1024:1
2 Absolute reduction		$\frac{4}{1}$	$\frac{16}{1}$	$\frac{64}{1}$	$\frac{256}{1}$	$\frac{1024}{1}$
20 Max. feed velocity <sup>1</sup>	mm/s	25	6.3	1.6	0.4	0.1
21 Max. feed force (continuous) <sup>1</sup>	N	3	7	11	17	27
22 Max. feed force (intermittent) <sup>1</sup>	N	14	22	32	32	32
4 Number of stages		1	2	3	4	5
7 Max. efficiency gearhead incl. screw	%	38	34	31	28	25
8 Weight <sup>1</sup>	g	6.3	6.9	7.5	8.1	8.7
9 Average backlash no load	°	1.8	2.0	2.2	2.5	2.8
23 Mechanical positioning accuracy <sup>1</sup>	mm	0.087	0.087	0.087	0.087	0.088
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup>	0.005	0.004	0.004	0.004	0.004
11 Gearhead length L1	mm	7.0	9.6	12.2	14.8	17.4

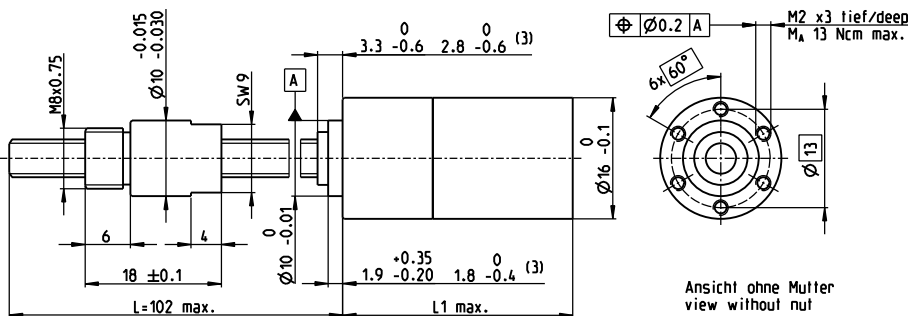
<sup>1</sup> based on screw length 56 mm



## maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor / brake) + assembly parts				
RE 8, 0,5 W, A	108			23.7	26.3	28.9	31.5	34.1
RE 8, 0,5 W, B	108			26.7	29.3	31.9	34.5	37.1
RE 8, 0,5 W, A	108	MR	458	30.3	32.9	35.5	38.1	40.7
RE 8, 0,5 W, A	108	Enc 8 OPT	465	31.9	34.5	37.1	39.7	42.3

# Screw Drive GP 16 S Ø16 mm, Ball Screw



## Technical Data

Screw	Ø5 x 2, stainless steel
Standard length	102 mm
Special length (5 mm steps)	max. 200 mm
Nut (standard)	thread nut
Material	X46Cr13, hardened
Axial play	< 0.01 mm
Planetary gearhead	straight teeth
Bearing	ball bearing/axial bearing
Radial play, 6 mm from flange	< 0.08 mm
Axial play	preloaded
Max. continuous input speed <sup>2</sup>	12000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	500 N
Number of stages	0 1 2 3 4
Max. radial load, 6 mm from flange	20 N 40 N 60 N 80 N 80 N

screw drive

M 1:1

- Stock program
- Standard program
- Special program (on request)

## Part Numbers

Screw Drive Data (provisional)	424221	424222	424223	424219	424224
1 Reduction	1:1	4.4:1	19:1	84:1	370:1
2 Absolute reduction	1/1	57/13	3249/169	185193/2197	10556001/28561
20 Max. feed velocity <sup>1</sup>	mm/s	150	90.9	21.1	4.8
21 Max. feed force (continuous) <sup>1</sup>	N	54	64	104	171
22 Max. feed force (intermittent) <sup>1</sup>	N	149	176	287	403
<b>Part Numbers</b>		424731	424733	424745	424749
1 Reduction		5.4:1	24:1	104:1	455:1
2 Absolute reduction		27/5	1539/65	87723/645	500021/10985
20 Max. feed velocity <sup>1</sup>	mm/s	74.1	16.7	3.8	0.9
21 Max. feed force (continuous) <sup>1</sup>	N	69	113	184	300
22 Max. feed force (intermittent) <sup>1</sup>	N	189	311	403	403
<b>Part Numbers</b>			424744	424747	424750
1 Reduction			29:1	128:1	561:1
2 Absolute reduction			729/25	41553/325	238852/4225
20 Max. feed velocity <sup>1</sup>	mm/s		13.8	3.1	0.7
21 Max. feed force (continuous) <sup>1</sup>	N		120	197	322
22 Max. feed force (intermittent) <sup>1</sup>	N		331	403	403
<b>Part Numbers</b>				424748	424751
1 Reduction				157:1	690:1
2 Absolute reduction				19683/125	1121931/1625
20 Max. feed velocity <sup>1</sup>	mm/s			2.5	0.6
21 Max. feed force (continuous) <sup>1</sup>	N			211	345
22 Max. feed force (intermittent) <sup>1</sup>	N			403	403
<b>Part Numbers</b>					424752
1 Reduction					850:1
2 Absolute reduction					531441/625
20 Max. feed velocity <sup>1</sup>	mm/s				0.5
21 Max. feed force (continuous) <sup>1</sup>	N				370
22 Max. feed force (intermittent) <sup>1</sup>	N				403
4 Number of stages		0	1	2	3
7 Max. efficiency gearhead incl. screw	%	93	87	79	71
8 Weight <sup>1</sup>	g	52	58	61	65
9 Average backlash no load	°	1.0	1.4	1.6	2.0
23 Mechanical positioning accuracy <sup>1</sup>	mm	0.039	0.041	0.042	0.044
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup>	0.23	0.11	0.05	0.05
11 Gearhead length L1	mm	19.2	22.3	27.4	31.0

<sup>1</sup> based on screw length 102 mm (standard length)    <sup>2</sup> for reduction 1:1 = 4500 rpm    <sup>3</sup> for reduction 1:1

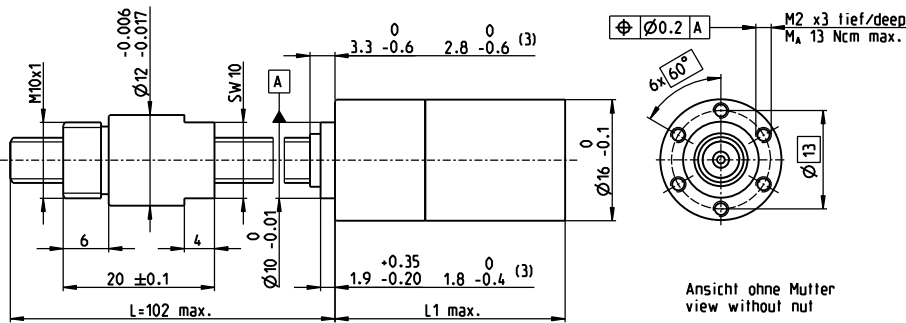


## maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor / brake) + assembly parts				
RE 16, 2 W	129			41.6	44.7	49.8	53.4	57.0
RE 16, 2 W	129	MR	460/461	47.3	50.4	55.5	59.1	62.7
RE 16, 3.2 W	130/131			59.7	62.8	67.9	71.5	75.1
RE 16, 3.2 W	131	MR	460/461	64.7	67.8	72.9	76.5	80.1
RE 16, 4.5 W	132/133			62.7	65.8	70.9	74.5	78.1
RE 16, 4.5 W	133	MR	460/461	67.7	70.8	75.9	79.5	83.1
A-max 16	149-152			-	47.8	52.9	56.5	60.1
A-max 16	150/152	MR	460/461	-	52.8	57.9	61.5	65.1
EC-max 16, 5 W	235			-	46.4	51.5	55.1	58.7
EC-max 16, 5 W	235	MR	462	-	53.7	58.8	62.4	66.0
EC-max 16, 8 W	237			-	58.4	63.5	67.1	70.7
EC-max 16, 8 W	237	MR	462	-	65.7	70.8	74.4	78.0

# Screw Drive GP 16 S $\varnothing 16$ mm, Metric Lead Screw

screw drive



Technical Data	
Screw	M6 x1, stainless steel
Standard length	102 mm
Special length (5 mm steps)	max. 200 mm
Nut (standard)	thread nut
Material	bronze
Axial play	< 0.134 mm
Planetary gearhead	straight teeth
Bearing	ball bearing/axial bearing
Radial play, 6 mm from flange	< 0.08 mm
Axial play	preloaded
Max. continuous input speed <sup>2</sup>	12000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	500 N
Number of stages	0 1 2 3 4
Max. radial load, 6 mm from flange	20 N 40 N 60 N 80 N 80 N

M 1:1

- Stock program
- Standard program
- Special program (on request)

### Part Numbers

Screw Drive Data (provisional)	424231	424232	424233	424234	424235
1 Reduction	1:1	4.4:1	19:1	84:1	370:1
2 Absolute reduction	1/1	57/13	3249/169	185193/2197	10556001/28561
20 Max. feed velocity <sup>1</sup>	mm/s 50.0	45.5	10.5	2.4	0.5
21 Max. feed force (continuous) <sup>1</sup>	N 35	37	60	98	160
22 Max. feed force (intermittent) <sup>1</sup>	N 134	138	224	315	315
<b>Part Numbers</b>		424797	424798	424800	424806
1 Reduction		5.4:1	24:1	104:1	455:1
2 Absolute reduction		27/5	1539/65	87723/845	500021/10985
20 Max. feed velocity <sup>1</sup>	mm/s	37.0	8.3	1.9	0.4
21 Max. feed force (continuous) <sup>1</sup>	N	39	64	105	172
22 Max. feed force (intermittent) <sup>1</sup>	N	148	243	315	315
<b>Part Numbers</b>			424799	424803	424807
1 Reduction			29:1	128:1	561:1
2 Absolute reduction			729/25	41553/325	2368521/4225
20 Max. feed velocity <sup>1</sup>	mm/s		6.9	1.6	0.4
21 Max. feed force (continuous) <sup>1</sup>	N		69	112	184
22 Max. feed force (intermittent) <sup>1</sup>	N		258	315	315
<b>Part Numbers</b>				424804	424808
1 Reduction				157:1	690:1
2 Absolute reduction				19683/125	1121931/1625
20 Max. feed velocity <sup>1</sup>	mm/s			1.3	0.3
21 Max. feed force (continuous) <sup>1</sup>	N			120	197
22 Max. feed force (intermittent) <sup>1</sup>	N			315	315
<b>Part Numbers</b>					424809
1 Reduction					850:1
2 Absolute reduction					531441/625
20 Max. feed velocity <sup>1</sup>	mm/s				0.2
21 Max. feed force (continuous) <sup>1</sup>	N				211
22 Max. feed force (intermittent) <sup>1</sup>	N				315
4 Number of stages	0	1	2	3	4
7 Max. efficiency gearhead incl. screw	% 28	27	24	22	19
8 Weight <sup>1</sup>	g 55	61	64	68	72
9 Average backlash no load	° 1.0	1.4	1.6	2.0	2.4
23 Mechanical positioning accuracy <sup>1</sup>	mm 0.166	0.167	0.167	0.169	0.170
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup> 0.23	0.11	0.05	0.05	0.05
11 Gearhead length L1	mm 19.2	22.3	27.4	31.0	34.6

<sup>1</sup> based on screw length 102 mm (standard length)    <sup>2</sup> for reduction 1:1 = 3000 rpm    <sup>3</sup> for reduction 1:1



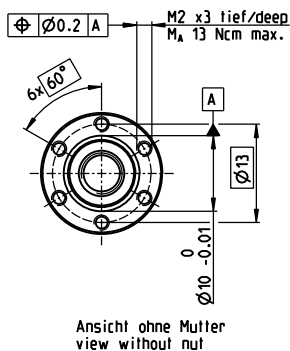
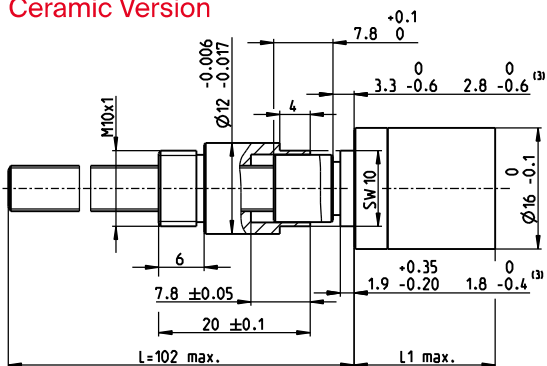
### maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts				
RE 16, 2 W	129			41,6	44,7	49,8	53,4	57,0
RE 16, 2 W	129	MR	460/461	47,3	50,4	55,5	59,1	62,7
RE 16, 3,2 W	130/131			59,7	62,8	67,9	71,5	75,1
RE 16, 3,2 W	131	MR	460/461	64,7	67,8	72,9	76,5	80,1
RE 16, 4,5 W	132/133			62,7	65,8	70,9	74,5	78,1
RE 16, 4,5 W	133	MR	460/461	67,7	70,8	75,9	79,5	83,1
A-max 16	149-152			-	47,8	52,9	56,5	60,1
A-max 16	150/152	MR	460/461	-	52,8	57,9	61,5	65,1
EC-max 16, 5 W	235			-	46,4	51,5	55,1	58,7
EC-max 16, 5 W	235	MR	462	-	53,7	58,8	62,4	66,0
EC-max 16, 8 W	237			-	58,4	63,5	67,1	70,7
EC-max 16, 8 W	237	MR	462	-	65,7	70,8	74,4	78,0



# Screw Drive GP 16 S $\varnothing 16$ mm, Metric Lead Screw

Ceramic Version



## Technical Data

Screw	M6 x 1, ceramic
Standard length	102 mm
Special length (5 mm steps)	max. 200 mm
Nut (standard)	thread nut
Material	X8CrNiS18-9
Axial play	< 0.134 mm
Planetary gearhead	straight teeth
Bearing	ball bearing
Radial play, 6 mm from flange	< 0.08 mm
Axial play	preloaded
Max. continuous input speed <sup>2</sup>	12000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	500 N
Number of stages	0 1 2 3 4
Max. radial load, 6 mm from flange	20 N 40 N 60 N 80 N 80 N

M 1:1

screw drive

- Stock program
- Standard program
- Special program (on request)

## Part Numbers

Screw Drive Data (provisional)	424241	424242	424243	424244	424245
1 Reduction	1:1	4.4:1	19:1	84:1	370:1
2 Absolute reduction	1/1	57/13	3249/169	185193/2197	10556001/28561
20 Max. feed velocity <sup>1</sup>	mm/s 50.0	45.5	10.5	2.4	0.5
21 Max. feed force (continuous) <sup>1</sup>	N 44	46	74	122	200
22 Max. feed force (intermittent) <sup>1</sup>	N 134	138	224	315	315
<b>Part Numbers</b>		424811	424812	424814	424819
1 Reduction		5.4:1	24:1	104:1	455:1
2 Absolute reduction		27/5	1539/65	87723/645	500021/10985
20 Max. feed velocity <sup>1</sup>	mm/s	37.0	8.3	1.9	0.4
21 Max. feed force (continuous) <sup>1</sup>	N	49	80	131	215
22 Max. feed force (intermittent) <sup>1</sup>	N	148	243	315	315
<b>Part Numbers</b>			424813	424815	424820
1 Reduction			29:1	128:1	561:1
2 Absolute reduction			729/25	41553/325	238852/4225
20 Max. feed velocity <sup>1</sup>	mm/s		6.9	1.6	0.4
21 Max. feed force (continuous) <sup>1</sup>	N		86	141	230
22 Max. feed force (intermittent) <sup>1</sup>	N		258	315	315
<b>Part Numbers</b>				424818	424821
1 Reduction				157:1	690:1
2 Absolute reduction				19683/125	1121931/1625
20 Max. feed velocity <sup>1</sup>	mm/s			1.3	0.3
21 Max. feed force (continuous) <sup>1</sup>	N			150	246
22 Max. feed force (intermittent) <sup>1</sup>	N			315	315
<b>Part Numbers</b>					424822
1 Reduction					850:1
2 Absolute reduction					531441/625
20 Max. feed velocity <sup>1</sup>	mm/s				0.2
21 Max. feed force (continuous) <sup>1</sup>	N				264
22 Max. feed force (intermittent) <sup>1</sup>	N				315
4 Number of stages	0	1	2	3	4
7 Max. efficiency gearhead incl. screw	% 41	38	34	31	28
8 Weight <sup>1</sup>	g 55	61	64	68	72
9 Average backlash no load	° 1.0	1.4	1.6	2.0	2.4
23 Mechanical positioning accuracy <sup>1</sup>	mm 0.166	0.167	0.167	0.169	0.170
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup> 0.23	0.11	0.05	0.05	0.05
11 Gearhead length L1	mm 19.2	22.3	27.4	31.0	34.6

<sup>1</sup> based on screw length 102 mm (standard length)

<sup>2</sup> for reduction 1:1 = 3000 rpm

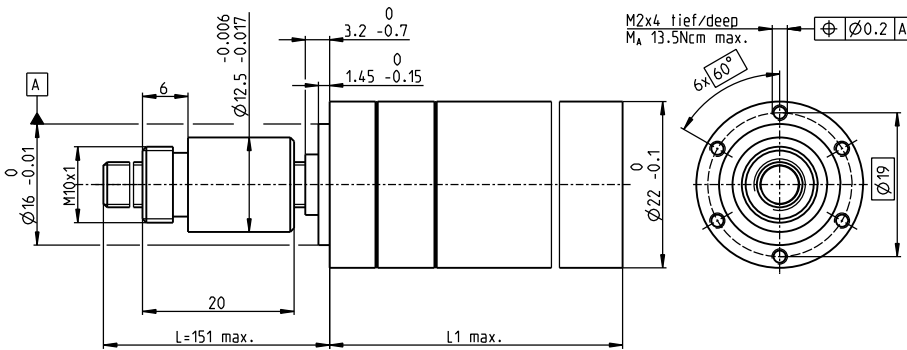
<sup>3</sup> for reduction 1:1



## maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts				
RE 16, 2 W	129			41.6	44.7	49.8	53.4	57.0
RE 16, 2 W	129	MR	460/461	47.3	50.4	55.5	59.1	62.7
RE 16, 3.2 W	130/131			59.7	62.8	67.9	71.5	75.1
RE 16, 3.2 W	131	MR	460/461	64.7	67.8	72.9	76.5	80.1
RE 16, 4.5 W	132/133			62.7	65.8	70.9	74.5	78.1
RE 16, 4.5 W	133	MR	460/461	67.7	70.8	75.9	79.5	83.1
A-max 16	149-152			-	47.8	52.9	56.5	60.1
A-max 16	150/152	MR	460/461	-	52.8	57.9	61.5	65.1
EC-max 16, 5 W	235			-	46.4	51.5	55.1	58.7
EC-max 16, 5 W	235	MR	462	-	53.7	58.8	62.4	66.0
EC-max 16, 8 W	237			-	58.4	63.5	67.1	70.7
EC-max 16, 8 W	237	MR	462	-	65.7	70.8	74.4	78.0

# Screw Drive GP 22 S Ø22 mm, Ball Screw



Technical Data	
Screw	Ø6 x 2, stainless steel
Standard length	151 mm
Special length (5 mm steps)	max. 300 mm
Nut (standard)	thread nut
Material	100CR6, hardened
Axial play	< 0.01 mm
Planetary gearhead	straight teeth
Bearing	ball bearing/thrust roller bearing
Radial play, 5 mm from flange	< 0.05 mm
Axial play	preloaded
Max. continuous input speed <sup>2</sup>	8000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	500 N
Number of stages	0 1 2 3 4
Max. radial load, 15 mm from flange	80 N 80 N 130 N 180 N 180 N

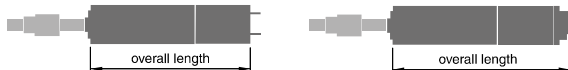
M 1:1

- Stock program
- Standard program
- Special program (on request)

### Part Numbers

Screw Drive Data	363863	363864	363867	363871	363872	363877	363882	363887	363892
1 Reduction	1:1	3.8:1	14:1	29:1	53:1	89:1	198:1	333:1	479:1
2 Absolute reduction	1/1	15/4	225/16	729/25	3375/64	4617/52	50625/296	69255/208	124659/260
20 Max. feed velocity <sup>1</sup>	mm/s	150	70	19	9.2	5.0	3.0	1.3	0.6
21 Max. feed force (continuous) <sup>1</sup>	N	77	100	154	196	240	285	372	443
22 Max. feed force (intermittent) <sup>1</sup>	N	183	236	365	465	500	500	500	500
<b>Part Numbers</b>		<b>363865</b>	<b>364041</b>		<b>363873</b>	<b>363878</b>	<b>363883</b>	<b>363888</b>	<b>363893</b>
1 Reduction		4.4:1	16:1		62:1	104:1	231:1	370:1	561:1
2 Absolute reduction		57/13	885/52		12825/208	87723/645	192375/832	10556001/28561	2368521/4225
20 Max. feed velocity <sup>1</sup>	mm/s	61	17		4.3	2.6	1.2	0.7	0.5
21 Max. feed force (continuous) <sup>1</sup>	N	105	161		253	300	392	458	500
22 Max. feed force (intermittent) <sup>1</sup>	N	248	381		500	500	500	500	500
<b>Part Numbers</b>		<b>363866</b>	<b>363868</b>		<b>363874</b>	<b>363879</b>	<b>363884</b>	<b>363889</b>	<b>363894</b>
1 Reduction		5.4:1	19:1		72:1	109:1	270:1	389:1	590:1
2 Absolute reduction		27/5	3249/169		48735/676	2187/20	731025/2704	263169/676	59049/100
20 Max. feed velocity <sup>1</sup>	mm/s	49	14		3.7	2.4	1.0	0.7	0.5
21 Max. feed force (continuous) <sup>1</sup>	N	112	170		266	305	413	466	500
22 Max. feed force (intermittent) <sup>1</sup>	N	266	404		500	500	500	500	500
<b>Part Numbers</b>			<b>363869</b>		<b>363875</b>	<b>363880</b>	<b>363885</b>	<b>363890</b>	<b>363895</b>
1 Reduction			20:1		76:1	128:1	285:1	410:1	690:1
2 Absolute reduction			81/4		1215/16	41553/325	18225/64	6581/16	1121931/1625
20 Max. feed velocity <sup>1</sup>	mm/s		13		3.5	2.1	0.9	0.7	0.4
21 Max. feed force (continuous) <sup>1</sup>	N		173		270	322	420	474	500
22 Max. feed force (intermittent) <sup>1</sup>	N		411		500	500	500	500	500
<b>Part Numbers</b>			<b>363870</b>		<b>363876</b>	<b>363881</b>	<b>363886</b>	<b>363891</b>	<b>363896</b>
1 Reduction			24:1		84:1	157:1	316:1	455:1	850:1
2 Absolute reduction			1539/65		185193/2197	19683/125	2777895/8788	5000211/10985	531441/625
20 Max. feed velocity <sup>1</sup>	mm/s		11		3.2	1.7	0.8	0.6	0.3
21 Max. feed force (continuous) <sup>1</sup>	N		184		280	345	435	491	500
22 Max. feed force (intermittent) <sup>1</sup>	N		437		500	500	500	500	500
4 Number of stages		0	1	2	2	3	3	4	4
7 Max. efficiency gearhead incl. screw	%	96	81	67	67	57	57	47	47
8 Weight <sup>1</sup>	g	103	103	115	115	128	128	141	141
9 Average backlash no load	°	1.0	1.0	1.2	1.2	1.6	1.6	2.0	2.0
23 Mechanical positioning accuracy <sup>1</sup>	mm	0,039	0,039	0,040	0,040	0,042	0,042	0,044	0,044
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup>	10	1.0	0.4	0.4	0.3	0.3	0.3	0.3
11 Gearhead length L1	mm	38,0	38,0	44,8	44,8	51,6	51,6	58,4	58,4

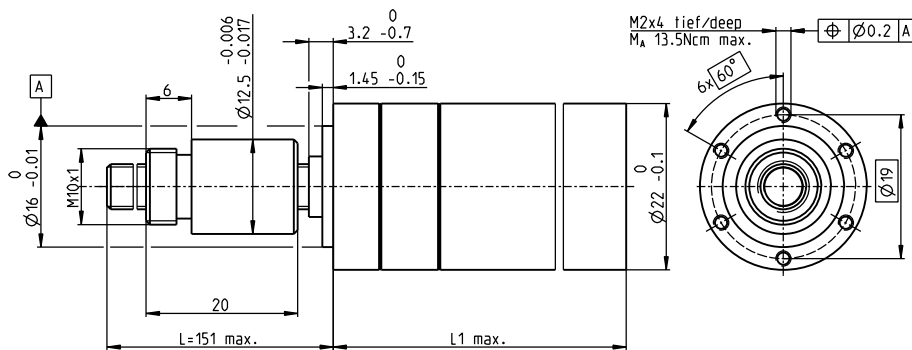
<sup>1</sup> based on screw length 151 mm (standard length)    <sup>2</sup> for reduction 1:1 = 4500 rpm



### maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor / brake) + assembly parts							
A-max 19	153-156			-	64.2	71.0	71.0	77.8	77.8	84.6	84.6
A-max 19, 1.5 W	154	MR	460/461	-	69.3	76.1	76.1	82.9	82.9	89.7	89.7
A-max 19, 1.5 W	154	Enc 22	468	-	78.6	85.4	85.4	92.2	92.2	99.0	99.0
A-max 19, 2.5 W	155/156			-	66.8	73.6	73.6	80.4	80.4	87.2	87.2
A-max 19, 2.5 W	156	MR	460/461	-	71.1	77.9	77.9	84.7	84.7	91.5	91.5
A-max 19, 2.5 W	156	Enc 22	468	-	81.2	88.0	88.0	94.8	94.8	101.6	101.6
A-max 22	157-160			-	67.2	74.0	74.0	80.8	80.8	87.6	87.6
A-max 22	158/160	MR	460/461	-	72.2	79.0	79.0	85.8	85.8	92.6	92.6
A-max 22	158/160	Enc 22	468	-	81.6	88.4	88.4	95.2	95.2	102.0	102.0
EC-max 16, 8 W	237			-	71.4	78.2	78.2	85.0	85.0	91.8	91.8
EC-max 16, 8 W	237	MR	447	-	78.7	85.5	85.5	92.3	92.3	99.1	99.1
EC-max 22, 12 W	238			-	70.1	76.9	76.9	83.7	83.7	90.5	90.5
EC-max 22, 12 W	238	MR	447	-	79.8	86.6	86.6	93.4	93.4	100.2	100.2
EC-max 22, 12 W	238	AB 20	516	-	105.7	112.5	112.5	119.3	119.3	126.1	126.1

# Screw Drive GP 22 S Ø22 mm, Metric Lead Screw



Technical Data	
Screw	M6 x 1, stainless steel
Standard length	151 mm
Special length (5 mm steps)	max. 300 mm
Nut (standard)	thread nut
Material	bronze
Axial play	< 0,008 mm
Planetary gearhead	straight teeth
Bearing	ball bearing/thrust roller bearing
Radial play, 5 mm from flange	< 0,05 mm
Axial play	preloaded
Max. continuous input speed <sup>2</sup>	8000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	550 N
Number of stages	0 1 2 3 4
Max. radial load, 15 mm from flange	80 N 80 N 130 N 180 N 180 N

M 1:1

- Stock program
- Standard program
- Special program (on request)

## Part Numbers

Screw Drive Data	363826	363827	363830	363834	363835	363840	363845	363850	363855
1 Reduction	1:1	3.8:1	14:1	29:1	53:1	89:1	198:1	333:1	479:1
2 Absolute reduction	1/1	15/4	225/16	729/25	3375/64	4617/52	50625/256	69255/208	124659/260
20 Max. feed velocity <sup>1</sup>	mm/s	101	35	9.5	4.6	2.5	1.5	0.7	0.3
21 Max. feed force (continuous) <sup>1</sup>	N	42	60	92	118	144	171	223	266
22 Max. feed force (intermittent) <sup>1</sup>	N	118	167	259	330	350	350	350	350
<b>Part Numbers</b>									
1 Reduction		363828	364040		363836	363841	363846	363851	363856
2 Absolute reduction		4.4:1	16:1		62:1	104:1	231:1	370:1	561:1
20 Max. feed velocity <sup>1</sup>	mm/s		30	8.3		2.2	1.3	0.6	0.2
21 Max. feed force (continuous) <sup>1</sup>	N		63	97		152	180	235	316
22 Max. feed force (intermittent) <sup>1</sup>	N		176	270		350	350	350	350
<b>Part Numbers</b>									
1 Reduction		363829	363831		363837	363842	363847	363852	363857
2 Absolute reduction		5.4:1	19:1		72:1	109:1	270:1	389:1	590:1
20 Max. feed velocity <sup>1</sup>	mm/s		25	7.0		1.9	1.2	0.5	0.3
21 Max. feed force (continuous) <sup>1</sup>	N		67	102		159	183	248	321
22 Max. feed force (intermittent) <sup>1</sup>	N		188	286		350	350	350	350
<b>Part Numbers</b>									
1 Reduction			363832		363838	363843	363848	363853	363858
2 Absolute reduction			20:1		76:1	128:1	285:1	410:1	690:1
20 Max. feed velocity <sup>1</sup>	mm/s		6.7		1.8	1.0	0.5	0.3	0.2
21 Max. feed force (continuous) <sup>1</sup>	N		104		162	193	252	285	339
22 Max. feed force (intermittent) <sup>1</sup>	N		291		350	350	350	350	350
<b>Part Numbers</b>									
1 Reduction			363833		363839	363844	363849	363854	363859
2 Absolute reduction			24:1		84:1	157:1	316:1	455:1	850:1
20 Max. feed velocity <sup>1</sup>	mm/s		5.6		1.6	0.8	0.4	0.3	0.2
21 Max. feed force (continuous) <sup>1</sup>	N		111		168	207	261	295	350
22 Max. feed force (intermittent) <sup>1</sup>	N		310		350	350	350	350	350
4 Number of stages		0	1	2	2	3	3	4	4
7 Max. efficiency gearhead incl. screw	%	42	35	29	29	25	25	20	20
8 Weight <sup>1</sup>	g	103	103	116	116	128	128	141	141
9 Average backlash no load	°	1.0	1.0	1.2	1.2	1.6	1.6	2.0	2.0
23 Mechanical positioning accuracy <sup>1</sup>	mm	0,034	0,034	0,034	0,034	0,034	0,034	0,037	0,037
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup>	10	1.0	0.4	0.4	0.3	0.3	0.3	0.3
11 Gearhead length L1	mm	38.0	38.0	44.8	44.8	51.6	51.6	58.4	58.4

<sup>1</sup> based on screw length 151 mm (standard length)    <sup>2</sup> for reduction 1:1 = 6088 rpm



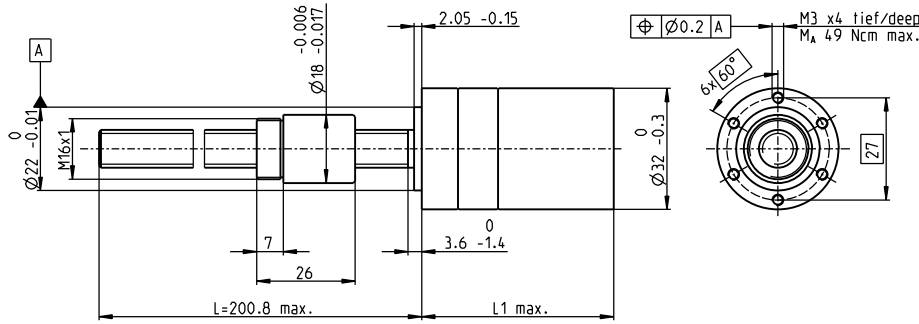
## maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts								
A-max 19	153-156			-	64.2	71.0	71.0	77.8	77.8	84.6	84.6	84.6
A-max 19, 1.5 W	154	MR	460/461	-	69.3	76.1	76.1	82.9	82.9	89.7	89.7	89.7
A-max 19, 1.5 W	154	Enc 22	468	-	78.6	85.4	85.4	92.2	92.2	99.0	99.0	99.0
A-max 19, 2.5 W	155/156			-	66.8	73.6	73.6	80.4	80.4	87.2	87.2	87.2
A-max 19, 2.5 W	156	MR	460/461	-	71.1	77.9	77.9	84.7	84.7	91.5	91.5	91.5
A-max 19, 2.5 W	156	Enc 22	468	-	81.2	88.0	88.0	94.8	94.8	101.6	101.6	101.6
A-max 22	157-160			-	67.2	74.0	74.0	80.8	80.8	87.6	87.6	87.6
A-max 22	158/160	MR	460/461	-	72.2	79.0	79.0	85.8	85.8	92.6	92.6	92.6
A-max 22	158/160	Enc 22	468	-	81.6	88.4	88.4	95.2	95.2	102.0	102.0	102.0
EC-max 16, 8 W	237			-	71.4	78.2	78.2	85.0	85.0	91.8	91.8	91.8
EC-max 16, 8 W	237	MR	447	-	78.7	85.5	85.5	92.3	92.3	99.1	99.1	99.1
EC-max 22, 12 W	238			-	70.1	76.9	76.9	83.7	83.7	90.5	90.5	90.5
EC-max 22, 12 W	238	MR	447	-	79.8	86.6	86.6	93.4	93.4	100.2	100.2	100.2
EC-max 22, 12 W	238	AB 20	516	-	105.7	112.5	112.5	119.3	119.3	126.1	126.1	126.1

screw drive

# Screw Drive GP 32 S $\varnothing 32$ mm, Ball Screw

screw drive



Technical Data	
Screw	$\varnothing 10 \times 2$ , stainless steel
Standard length	200.8 mm
Special length (5 mm steps)	max. 600 mm
Nut (standard)	thread nut
Material	100CR6, hardened
Axial play	< 0.01 mm
Planetary gearhead	straight teeth
Bearing	ball bearing/thrust roller bearing
Radial play, 5 mm from flange	< 0.05 mm
Axial play	preloaded
Max. continuous input speed <sup>2</sup>	8000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	2700 N
Number of stages	0 1 2 3 4
Max. radial load, 15 mm from flange	200 N 200 N 350 N 400 N 400 N

M 1:2

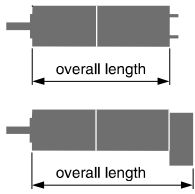
		Part Numbers									
		363970	363971	363974	363979	363980	363985	363990	363995	364000	
<b>Screw Drive Data</b>											
1 Reduction		1:1	3.7:1	14:1	33:1	51:1	111:1	246:1	492:1	762:1	
2 Absolute reduction		1/1	26/7	676/49	529/16	17576/343	13824/125	421824/1715	86112/175	19044/25	
20 Max. feed velocity <sup>1</sup>	mm/s	133	72	19	8.1	5.2	2.4	1.1	0.5	0.3	
21 Max. feed force (continuous) <sup>1</sup>	N	386	474	739	983	1137	1473	1921	2420	2700	
22 Max. feed force (intermittent) <sup>1</sup>	N	1023	1255	1956	2604	2700	2700	2700	2700	2700	
<b>Part Numbers</b>											
1 Reduction			363972	363975		363981	363986	363991	363996	364001	
2 Absolute reduction			4.8:1	18:1		66:1	123:1	295:1	531:1	913:1	
20 Max. feed velocity <sup>1</sup>	mm/s		56	15		4.0	2.2	0.9	0.5	0.3	
21 Max. feed force (continuous) <sup>1</sup>	N		517	803		1239	1524	2041	2482	2700	
22 Max. feed force (intermittent) <sup>1</sup>	N		1369	2127		2700	2700	2700	2700	2700	
<b>Part Numbers</b>											
1 Reduction			363973	363976		363982	363987	363992	363997	364002	
2 Absolute reduction			5.8:1	21:1		79:1	132:1	318:1	589:1	1093:1	
20 Max. feed velocity <sup>1</sup>	mm/s		46	13		3.4	2.0	0.8	0.5	0.2	
21 Max. feed force (continuous) <sup>1</sup>	N		551	846		1315	1561	2092	2569	2700	
22 Max. feed force (intermittent) <sup>1</sup>	N		1458	2239		2700	2700	2700	2700	2700	
<b>Part Numbers</b>											
1 Reduction			363977		363983	363988	363993	363998			
2 Absolute reduction			23:1		86:1	159:1	411:1	636:1			
20 Max. feed velocity <sup>1</sup>	mm/s		12		3.1	1.7	0.6	0.4			
21 Max. feed force (continuous) <sup>1</sup>	N		872		1353	1661	2279	2636			
22 Max. feed force (intermittent) <sup>1</sup>	N		2308		2700	2700	2700	2700			
<b>Part Numbers</b>											
1 Reduction			363978		363984	363989	363994	363999			
2 Absolute reduction			28:1		103:1	190:1	456:1	706:1			
20 Max. feed velocity <sup>1</sup>	mm/s		9.5		2.6	1.4	0.6	0.4			
21 Max. feed force (continuous) <sup>1</sup>	N		931		1437	1762	2359	2700			
22 Max. feed force (intermittent) <sup>1</sup>	N		2465		2700	2700	2700	2700			
4 Number of stages		0	1	2	2	3	3	4	4	4	
7 Max. efficiency gearhead incl. screw	%	94	75	71	71	66	66	56	56	56	
8 Weight <sup>1</sup>	g	304	304	331	331	359	359	387	387	387	
9 Average backlash no load	°	0.7	0.7	0.8	0.8	1.0	1.0	1.0	1.0	1.0	
23 Mechanical positioning accuracy <sup>1</sup>	mm	0.037	0.037	0.037	0.037	0.039	0.039	0.039	0.039	0.039	
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup>	42.3	4.2	0.9	0.9	0.7	0.7	0.7	0.7	0.7	
11 Gearhead length L1	mm	51.0	51.0	57.7	57.7	64.4	64.4	71.1	71.1	71.1	

<sup>1</sup> based on screw length 200.8 mm (standard length)    <sup>2</sup> for reduction 1:1 = 4000 rpm



maxon Modular System												
+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts								
RE 25	134/136			105.6	105.6	112.3	112.3	119.0	119.0	125.7	125.7	125.7
RE 25	134/136	MR	463	116.6	116.6	123.3	123.3	130.0	130.0	136.7	136.7	136.7
RE 25	134/136	Enc 22	468	119.7	119.7	126.4	126.4	133.1	133.1	139.8	139.8	139.8
RE 25	134/136	HED_5540	471/473	126.4	126.4	133.1	133.1	139.8	139.8	146.5	146.5	146.5
RE 25	134/136	DCT 22	480	127.9	127.9	134.6	134.6	141.3	141.3	148.0	148.0	148.0
RE 25, 20 W	135			94.1	94.1	100.8	100.8	107.5	107.5	114.2	114.2	114.2
RE 25, 20 W	135	MR	463	105.1	105.1	111.8	111.8	118.5	118.5	125.2	125.2	125.2
RE 25, 20 W	135	HED_5540	471/473	114.9	114.9	121.6	121.6	128.3	128.3	135.0	135.0	135.0
RE 25, 20 W	135	DCT 22	480	116.4	116.4	123.1	123.1	129.8	129.8	136.5	136.5	136.5
RE 25, 20 W	135	AB 28	519	128.2	128.2	134.9	134.9	141.6	141.6	148.3	148.3	148.3
RE 25, 20 W	135	HED_5540/AB 28	471/519	145.4	145.4	152.1	152.1	158.8	158.8	165.5	165.5	165.5
RE 25, 20 W	136	AB 28	519	139.7	139.7	146.4	146.4	153.1	153.1	159.8	159.8	159.8
RE 25, 20 W	136	HED_5540/AB 28	471/519	156.9	156.9	163.6	163.6	170.3	170.3	177.0	177.0	177.0
RE 30, 60 W	138			119.1	119.1	125.8	125.8	132.5	132.5	139.2	139.2	139.2
RE 30, 60 W	138	MR	464	130.5	130.5	137.2	137.2	143.9	143.9	150.6	150.6	150.6
RE 30, 60 W	138	HED_5540	471/473	139.9	139.9	146.6	146.6	153.3	153.3	160.0	160.0	160.0

# Screw Drive GP 32 S Ø32 mm, Ball Screw



## Part Numbers

363970	363971	363974	363979	363980	363985	363990	363995	364000
	363972	363975		363981	363986	363991	363996	364001
	363973	363976		363982	363987	363992	363997	364002
		363977		363983	363988	363993	363998	
		363978		363984	363989	363994	363999	

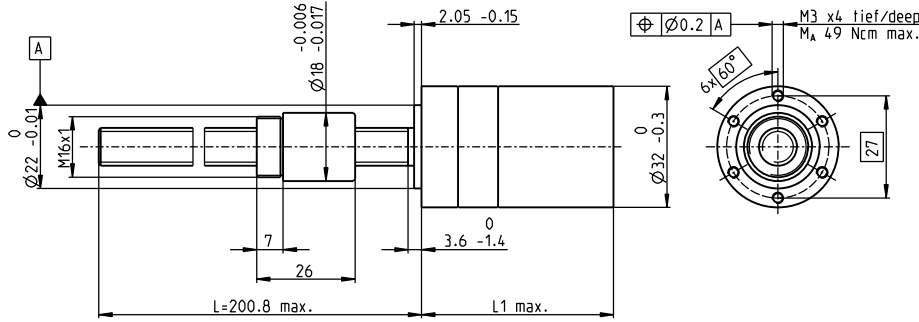
screw drive

maxon Modular System											
+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts							
RE 35, 90 W	139			122.1	122.1	128.8	128.8	135.5	135.5	142.2	142.2
RE 35, 90 W	139	MR	464	133.5	133.5	140.2	140.2	146.9	146.9	153.6	153.6
RE 35, 90 W	139	HED_5540	471/473	142.8	142.8	149.5	149.5	156.2	156.2	162.9	162.9
RE 35, 90 W	139	DCT 22	480	140.2	140.2	146.9	146.9	153.6	153.6	160.3	160.3
RE 35, 90 W	139	AB 28	519	158.2	158.2	164.9	164.9	171.6	171.6	178.3	178.3
RE 35, 90 W	139	HEDS 5540/AB 28	471/519	175.4	175.4	182.1	182.1	188.8	188.8	195.5	195.5
A-max 26	164			-	95.8	102.5	102.5	109.2	109.2	115.9	115.9
A-max 26	164	MR	463	-	104.6	111.3	111.3	118.0	118.0	124.7	124.7
A-max 26	164	Enc 22	468	-	110.2	116.9	116.9	123.6	123.6	130.3	130.3
A-max 26	164	HED_5540	472/474	-	114.2	120.9	120.9	127.6	127.6	134.3	134.3
A-max 32	165			-	114.0	120.7	120.7	127.4	127.4	134.1	134.1
A-max 32	166			-	112.6	119.3	119.3	126.0	126.0	132.7	132.7
A-max 32	166	MR	464	-	123.8	130.5	130.5	137.2	137.2	143.9	143.9
A-max 32	166	HED_5540	471/473	-	133.4	140.1	140.1	146.8	146.8	153.5	153.5
EC 32, 80 W	228			111.1	111.1	117.8	117.8	124.5	124.5	131.2	131.2
EC 32, 80 W	228	HED_5540	471/473	129.5	129.5	136.2	136.2	142.9	142.9	149.6	149.6
EC 32, 80 W	228	Res 26	481	131.2	131.2	137.9	137.9	144.6	144.6	151.3	151.3
EC-max 22, 25 W	239			-	99.6	106.3	106.3	113.0	113.0	119.7	119.7
EC-max 22, 25 W	239	MR	464	-	109.3	116.0	116.0	122.7	122.7	129.4	129.4
EC-max 22, 25 W	239	AB 20	516	-	135.4	142.1	142.1	148.8	148.8	155.5	155.5
EC-max 30, 40 W	240			-	93.1	99.8	99.8	106.5	106.5	113.2	113.2
EC-max 30, 40 W	240	MR	464	-	105.3	112.0	112.0	118.7	118.7	125.4	125.4
EC-max 30, 40 W	240	HEDL 5540	474	-	113.7	120.4	120.4	127.1	127.1	133.8	133.8
EC-max 30, 40 W	240	AB 20	516	-	128.9	135.6	135.6	142.3	142.3	148.3	148.3
EC-max 30, 40 W	240	HEDL 5540/AB 20	474/516	-	149.5	156.2	156.2	162.9	162.9	169.6	169.6
EC-4pole 22, 90 W	247			99.7	99.7	106.4	106.4	113.1	113.1	119.8	119.8
EC-4pole 22, 90 W	247	16 EASY/XT/Abs.	449-453	111.9	111.9	118.6	118.6	125.3	125.3	132.0	132.0
EC-4pole 22, 90 W	247	16 EASY Abs. XT	455	112.4	112.4	119.1	119.1	125.8	125.8	132.5	132.5
EC-4pole 22, 90 W	247	16 RIO	466	110.4	110.4	117.1	117.1	123.8	123.8	130.5	130.5
EC-4pole 22, 90 W	247	AEDL/HEDL	469/475	121.2	121.2	127.9	127.9	134.6	134.6	141.3	141.3
EC-4pole 22,120 W	248			117.1	117.1	123.8	123.8	130.5	130.5	137.2	137.2
EC-4pole 22,120 W	248	16 EASY/XT/Abs.	449-453	129.3	129.3	136.0	136.0	142.7	142.7	149.4	149.4
EC-4pole 22,120 W	248	16 EASY Abs. XT	455	129.8	129.8	136.5	136.5	143.2	143.2	149.9	149.9
EC-4pole 22,120 W	248	16 RIO	466	127.8	127.8	134.5	134.5	141.2	141.2	147.9	147.9
EC-4pole 22,120 W	248	AEDL/HEDL	469/475	138.6	138.6	145.3	145.3	152.0	152.0	158.7	158.7
EC-i 30, 30 W	258			93.3	93.3	100.0	100.0	106.7	106.7	113.4	113.4
EC-i 30, 30 W	258	16 EASY/Abs.	449/453	105.0	105.0	111.7	111.7	118.4	118.4	125.1	125.1
EC-i 30, 30 W	258	16 RIO	466	103.5	103.5	110.2	110.2	116.9	116.9	123.6	123.6
EC-i 30, 30 W	258	AEDL/HEDL	469/474	114.0	114.0	120.7	120.7	127.4	127.4	134.1	134.1
EC-i 30, 45 W	259			93.3	93.3	100.0	100.0	106.7	106.7	113.4	113.4
EC-i 30, 45 W	259	16 EASY/Abs.	449/453	105.0	105.0	111.7	111.7	118.4	118.4	125.1	125.1
EC-i 30, 45 W	259	16 RIO	466	103.5	103.5	110.2	110.2	116.9	116.9	123.6	123.6
EC-i 30, 45 W	259	AEDL/HEDL	469/474	114.0	114.0	120.7	120.7	127.4	127.4	134.1	134.1
EC-i 30, 50 W	260			115.3	115.3	122.0	122.0	128.7	128.7	135.4	135.4
EC-i 30, 50 W	260	16 EASY/Abs.	449/453	127.0	127.0	133.7	133.7	140.4	140.4	147.1	147.1
EC-i 30, 50 W	260	16 RIO	466	125.5	125.5	132.2	132.2	138.9	138.9	145.6	145.6
EC-i 30, 50 W	260	AEDL/HEDL	469/474	136.0	136.0	142.7	142.7	149.4	149.4	156.1	156.1
EC-i 30, 75 W	261			115.3	115.3	122.0	122.0	128.7	128.7	135.4	135.4
EC-i 30, 75 W	261	16 EASY/Abs.	449/453	127.0	127.0	133.7	133.7	140.4	140.4	147.1	147.1
EC-i 30, 75 W	261	16 RIO	466	125.5	125.5	132.2	132.2	138.9	138.9	145.6	145.6
EC-i 30, 75 W	261	AEDL/HEDL	469/474	136.0	136.0	142.7	142.7	149.4	149.4	156.1	156.1
EC-i 40, 50 W	262			82.7	82.7	89.4	89.4	96.1	96.1	102.8	102.8
EC-i 40, 50 W	262	16 EASY/Abs.	449/453	94.4	94.4	101.1	101.1	107.8	107.8	114.5	114.5
EC-i 40, 50 W	262	16 RIO	466	97.2	97.2	103.9	103.9	110.6	110.6	117.3	117.3
EC-i 40, 50 W	262	AEDL/HEDL	469/474	105.7	105.7	112.4	112.4	119.1	119.1	125.8	125.8
EC-i 40, 70 W	264			92.7	92.7	99.4	99.4	106.1	106.1	112.8	112.8
EC-i 40, 70 W	264	16 EASY/Abs.	449/453	104.4	104.4	111.1	111.1	117.8	117.8	124.5	124.5
EC-i 40, 70 W	264	16 RIO	466	107.2	107.2	113.9	113.9	120.6	120.6	127.3	127.3
EC-i 40, 70 W	264	AEDL/HEDL	469/474	115.7	115.7	122.4	122.4	129.1	129.1	135.8	135.8



# Screw Drive GP 32 S $\varnothing 32$ mm, Metric Lead Screw

screw drive



Technical Data	
Screw	M10 x1, stainless steel
Standard length	200,8 mm
Special length (5 mm steps)	max. 600 mm
Nut (standard)	thread nut
Material	bronze
Axial play	< 0,008 mm
Planetary gearhead	straight teeth
Bearing	ball bearing/thrust roller bearing
Radial play, 5 mm from flange	< 0,05 mm
Axial play	preloaded
Max. continuous input speed <sup>2</sup>	8000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	2700 N
Number of stages	0 1 2 3 4
Max. radial load,	15 mm from flange 200 N 200 N 350 N 400 N 400 N

M 1:2

- Stock program
- Standard program
- Special program (on request)

**Part Numbers**

Screw Drive Data	363900	363901	363904	363909	363910	363915	363920	363925	363930
1 Reduction	1:1	3.7:1	14:1	33:1	51:1	111:1	246:1	492:1	762:1
2 Absolute reduction	1/1	26/7	676/49	529/16	17576/343	13824/125	421824/1715	86112/175	19044/25
20 Max. feed velocity <sup>1</sup>	mm/s 100	36	9.5	4.0	2.6	1.2	0.5	0.3	0.2
21 Max. feed force (continuous) <sup>1</sup>	N 183	257	400	533	616	798	1040	1311	1350
22 Max. feed force (intermittent) <sup>1</sup>	N 455	638	995	1324	1350	1350	1350	1350	1350
<b>Part Numbers</b>	<b>363902</b>	<b>363905</b>			<b>363911</b>	<b>363916</b>	<b>363921</b>	<b>363926</b>	<b>363931</b>
1 Reduction	4.8:1	18:1			66:1	123:1	295:1	531:1	913:1
2 Absolute reduction	24/5	624/35			16224/245	6877/56	101062/343	331776/625	36501/40
20 Max. feed velocity <sup>1</sup>	mm/s 28	7.4			2.0	1.1	0.5	0.3	0.1
21 Max. feed force (continuous) <sup>1</sup>	N 280	435			671	826	1105	1345	1350
22 Max. feed force (intermittent) <sup>1</sup>	N 696	1082			1350	1350	1350	1350	1350
<b>Part Numbers</b>	<b>363903</b>	<b>363906</b>			<b>363912</b>	<b>363917</b>	<b>363922</b>	<b>363927</b>	<b>363932</b>
1 Reduction	5.8:1	21:1			79:1	132:1	318:1	589:1	1093:1
2 Absolute reduction	23/4	299/14			3887/49	3312/25	389376/1225	20631/35	279841/256
20 Max. feed velocity <sup>1</sup>	mm/s 23	6.3			1.7	1.0	0.4	0.2	0.1
21 Max. feed force (continuous) <sup>1</sup>	N 298	458			712	845	1133	1350	1350
22 Max. feed force (intermittent) <sup>1</sup>	N 742	1139			1350	1350	1350	1350	1350
<b>Part Numbers</b>		<b>363907</b>			<b>363913</b>	<b>363918</b>	<b>363923</b>	<b>363928</b>	
1 Reduction		23:1			86:1	159:1	411:1	636:1	
2 Absolute reduction		576/25			14976/175	1587/10	359424/675	79488/125	
20 Max. feed velocity <sup>1</sup>	mm/s 5.8	1.6			0.8	0.3	0.2		
21 Max. feed force (continuous) <sup>1</sup>	N 472	733			899	1234	1350		
22 Max. feed force (intermittent) <sup>1</sup>	N 1174	1350			1350	1350	1350		
<b>Part Numbers</b>		<b>363908</b>			<b>363914</b>	<b>363919</b>	<b>363924</b>	<b>363929</b>	
1 Reduction		28:1			103:1	190:1	456:1	706:1	
2 Absolute reduction		138/5			3588/35	1216/64	89401/196	15817/224	
20 Max. feed velocity <sup>1</sup>	mm/s 4.8	1.3			0.7	0.3	0.2		
21 Max. feed force (continuous) <sup>1</sup>	N 504	778			955	1278	1350		
22 Max. feed force (intermittent) <sup>1</sup>	N 1253	1350			1350	1350	1350		
4 Number of stages	0	1	2	2	3	3	4	4	4
7 Max. efficiency gearhead incl. screw	% 27	22	20	20	19	19	16	16	16
8 Weight <sup>1</sup>	g 304	304	331	331	359	359	387	387	387
9 Average backlash no load	° 0.7	0.7	0.8	0.8	1.0	1.0	1.0	1.0	1.0
23 Mechanical positioning accuracy <sup>1</sup>	mm 0.033	0.033	0.033	0.033	0.034	0.034	0.034	0.034	0.034
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup> 43.3	3.0	0.9	0.9	0.7	0.7	0.7	0.7	0.7
11 Gearhead length L1	mm 51.0	51.0	57.7	57.7	64.4	64.4	71.1	71.1	71.1

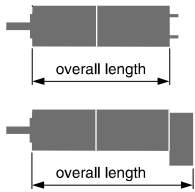
<sup>1</sup> based on screw length 200.8 mm (standard length)    <sup>2</sup> for reduction 1:1 = 5984 rpm



**maxon Modular System**

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts								
RE 25	134/136			105.6	105.6	112.3	112.3	119.0	119.0	125.7	125.7	125.7
RE 25	134/136	MR	463	116.6	116.6	123.3	123.3	130.0	130.0	136.7	136.7	136.7
RE 25	134/136	Enc 22	468	119.7	119.7	126.4	126.4	133.1	133.1	139.8	139.8	139.8
RE 25	134/136	HED_5540	471/473	126.4	126.4	133.1	133.1	139.8	139.8	146.5	146.5	146.5
RE 25	134/136	DCT 22	480	127.9	127.9	134.6	134.6	141.3	141.3	148.0	148.0	148.0
RE 25, 20 W	135			94.1	94.1	100.8	100.8	107.5	107.5	114.2	114.2	114.2
RE 25, 20 W	135	MR	463	105.1	105.1	111.8	111.8	118.5	118.5	125.2	125.2	125.2
RE 25, 20 W	135	HED_5540	471/473	114.9	114.9	121.6	121.6	128.3	128.3	135.0	135.0	135.0
RE 25, 20 W	135	DCT 22	480	116.4	116.4	123.1	123.1	129.8	129.8	136.5	136.5	136.5
RE 25, 20 W	135	AB 28	519	128.2	128.2	134.9	134.9	141.6	141.6	148.3	148.3	148.3
RE 25, 20 W	135	HED_5540/AB 28	471/519	145.4	145.4	152.1	152.1	158.8	158.8	165.5	165.5	165.5
RE 25, 20 W	136	AB 28	519	139.7	139.7	146.4	146.4	153.1	153.1	159.8	159.8	159.8
RE 25, 20 W	136	HED_5540/AB 28	471/519	156.9	156.9	163.6	163.6	170.3	170.3	177.0	177.0	177.0
RE 30, 60 W	138			119.1	119.1	125.8	125.8	132.5	132.5	139.2	139.2	139.2
RE 30, 60 W	138	MR	464	130.5	130.5	137.2	137.2	143.9	143.9	150.6	150.6	150.6
RE 30, 60 W	138	HED_5540	471/473	139.9	139.9	146.6	146.6	153.3	153.3	160.0	160.0	160.0

# Screw Drive GP 32 S Ø32 mm, Metric Lead Screw



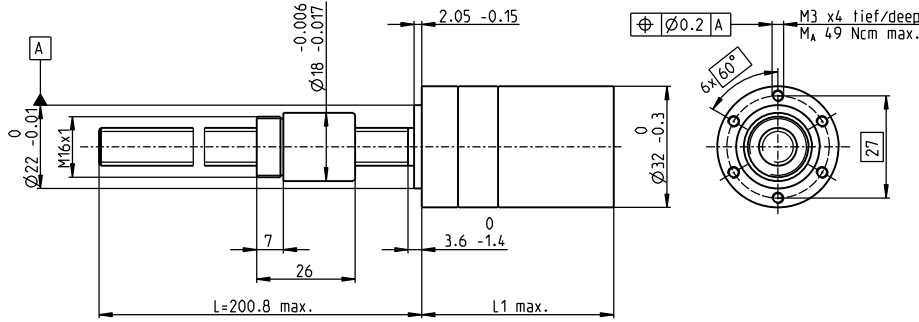
Part Numbers									
363900	363901	363904	363909	363910	363915	363920	363925	363930	
	363902	363905		363911	363916	363921	363926	363931	
	363903	363906		363912	363917	363922	363927	363932	
		363907		363913	363918	363923	363928		
		363908		363914	363919	363924	363929		

screw drive

maxon Modular System											
+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts							
RE 35, 90 W	139			122.1	122.1	128.8	128.8	135.5	135.5	142.2	142.2
RE 35, 90 W	139	MR	464	133.5	133.5	140.2	140.2	146.9	146.9	153.6	153.6
RE 35, 90 W	139	HED_5540	471/473	142.8	142.8	149.5	149.5	156.2	156.2	162.9	162.9
RE 35, 90 W	139	DCT 22	480	140.2	140.2	146.9	146.9	153.6	153.6	160.3	160.3
RE 35, 90 W	139	AB 28	519	158.2	158.2	164.9	164.9	171.6	171.6	178.3	178.3
RE 35, 90 W	139	HEDS 5540/AB 28	471/519	175.4	175.4	182.1	182.1	188.8	188.8	195.5	195.5
A-max 26	164			-	95.8	102.5	102.5	109.2	109.2	115.9	115.9
A-max 26	164	MR	463	-	104.6	111.3	111.3	118.0	118.0	124.7	124.7
A-max 26	164	Enc 22	468	-	110.2	116.9	116.9	123.6	123.6	130.3	130.3
A-max 26	164	HED_5540	472/474	-	114.2	120.9	120.9	127.6	127.6	134.3	134.3
A-max 32	165			-	114.0	120.7	120.7	127.4	127.4	134.1	134.1
A-max 32	166			-	112.6	119.3	119.3	126.0	126.0	132.7	132.7
A-max 32	166	MR	464	-	123.8	130.5	130.5	137.2	137.2	143.9	143.9
A-max 32	166	HED_5540	471/473	-	133.4	140.1	140.1	146.8	146.8	153.5	153.5
EC 32, 80 W	228			111.1	111.1	117.8	117.8	124.5	124.5	131.2	131.2
EC 32, 80 W	228	HED_5540	471/473	129.5	129.5	136.2	136.2	142.9	142.9	149.6	149.6
EC 32, 80 W	228	Res 26	481	131.2	131.2	137.9	137.9	144.6	144.6	151.3	151.3
EC-max 22, 25 W	239			-	99.6	106.3	106.3	113.0	113.0	119.7	119.7
EC-max 22, 25 W	239	MR	464	-	109.3	116.0	116.0	122.7	122.7	129.4	129.4
EC-max 22, 25 W	239	AB 20	516	-	135.4	142.1	142.1	148.8	148.8	155.5	155.5
EC-max 30, 40 W	240			-	93.1	99.8	99.8	106.5	106.5	113.2	113.2
EC-max 30, 40 W	240	MR	464	-	105.3	112.0	112.0	118.7	118.7	125.4	125.4
EC-max 30, 40 W	240	HEDL 5540	474	-	113.7	120.4	120.4	127.1	127.1	133.8	133.8
EC-max 30, 40 W	240	AB 20	516	-	128.9	135.6	135.6	142.3	142.3	148.3	148.3
EC-max 30, 40 W	240	HEDL 5540/AB 20	474/516	-	149.5	156.2	156.2	162.9	162.9	169.6	169.6
EC-4pole 22, 90 W	247			99.7	99.7	106.4	106.4	113.1	113.1	119.8	119.8
EC-4pole 22, 90 W	247	16 EASY/XT/Abs.	449-453	111.9	111.9	118.6	118.6	125.3	125.3	132.0	132.0
EC-4pole 22, 90 W	247	16 EASY Abs. XT	455	112.4	112.4	119.1	119.1	125.8	125.8	132.5	132.5
EC-4pole 22, 90 W	247	16 RIO	466	110.4	110.4	117.1	117.1	123.8	123.8	130.5	130.5
EC-4pole 22, 90 W	247	AEDL/HEDL	469/475	121.2	121.2	127.9	127.9	134.6	134.6	141.3	141.3
EC-4pole 22,120 W	248			117.1	117.1	123.8	123.8	130.5	130.5	137.2	137.2
EC-4pole 22,120 W	248	16 EASY/XT/Abs.	449-453	129.3	129.3	136.0	136.0	142.7	142.7	149.4	149.4
EC-4pole 22,120 W	248	16 EASY Abs. XT	455	129.8	129.8	136.5	136.5	143.2	143.2	149.9	149.9
EC-4pole 22,120 W	248	16 RIO	466	127.8	127.8	134.5	134.5	141.2	141.2	147.9	147.9
EC-4pole 22,120 W	248	AEDL/HEDL	469/475	138.6	138.6	145.3	145.3	152.0	152.0	158.7	158.7
EC-i 30, 30 W	258			93.3	93.3	100.0	100.0	106.7	106.7	113.4	113.4
EC-i 30, 30 W	258	16 EASY/Abs.	449/453	105.0	105.0	111.7	111.7	118.4	118.4	125.1	125.1
EC-i 30, 30 W	258	16 RIO	466	103.5	103.5	110.2	110.2	116.9	116.9	123.6	123.6
EC-i 30, 30 W	258	AEDL/HEDL	469/474	114.0	114.0	120.7	120.7	127.4	127.4	134.1	134.1
EC-i 30, 45 W	259			93.3	93.3	100.0	100.0	106.7	106.7	113.4	113.4
EC-i 30, 45 W	259	16 EASY/Abs.	449/453	105.0	105.0	111.7	111.7	118.4	118.4	125.1	125.1
EC-i 30, 45 W	259	16 RIO	466	103.5	103.5	110.2	110.2	116.9	116.9	123.6	123.6
EC-i 30, 45 W	259	AEDL/HEDL	469/474	114.0	114.0	120.7	120.7	127.4	127.4	134.1	134.1
EC-i 30, 50 W	260			115.3	115.3	122.0	122.0	128.7	128.7	135.4	135.4
EC-i 30, 50 W	260	16 EASY/Abs.	449/453	127.0	127.0	133.7	133.7	140.4	140.4	147.1	147.1
EC-i 30, 50 W	260	16 RIO	466	125.5	125.5	132.2	132.2	138.9	138.9	145.6	145.6
EC-i 30, 50 W	260	AEDL/HEDL	469/474	136.0	136.0	142.7	142.7	149.4	149.4	156.1	156.1
EC-i 30, 75 W	261			115.3	115.3	122.0	122.0	128.7	128.7	135.4	135.4
EC-i 30, 75 W	261	16 EASY/Abs.	449/453	127.0	127.0	133.7	133.7	140.4	140.4	147.1	147.1
EC-i 30, 75 W	261	16 RIO	466	125.5	125.5	132.2	132.2	138.9	138.9	145.6	145.6
EC-i 30, 75 W	261	AEDL/HEDL	469/474	136.0	136.0	142.7	142.7	149.4	149.4	156.1	156.1
EC-i 40, 50 W	262			82.7	82.7	89.4	89.4	96.1	96.1	102.8	102.8
EC-i 40, 50 W	262	16 EASY/Abs.	449/453	94.4	94.4	101.1	101.1	107.8	107.8	114.5	114.5
EC-i 40, 50 W	262	16 RIO	466	97.2	97.2	103.9	103.9	110.6	110.6	117.3	117.3
EC-i 40, 50 W	262	AEDL/HEDL	469/474	105.7	105.7	112.4	112.4	119.1	119.1	125.8	125.8
EC-i 40, 70 W	264			92.7	92.7	99.4	99.4	106.1	106.1	112.8	112.8
EC-i 40, 70 W	264	16 EASY/Abs.	449/453	104.4	104.4	111.1	111.1	117.8	117.8	124.5	124.5
EC-i 40, 70 W	264	16 RIO	466	107.2	107.2	113.9	113.9	120.6	120.6	127.3	127.3
EC-i 40, 70 W	264	AEDL/HEDL	469/474	115.7	115.7	122.4	122.4	129.1	129.1	135.8	135.8

# Screw Drive GP 32 S $\varnothing 32$ mm, Trapezoidal Lead Screw

screw drive



## Technical Data

Screw	TR10 x 2, stainless steel
Standard length	200.8 mm
Special length (5 mm steps)	max. 600 mm
Nut (standard)	thread nut
Material	bronze
Axial play	< 0.008 mm
Planetary gearhead	straight teeth
Bearing	ball bearing/thrust roller bearing
Radial play, 5 mm from flange	< 0.05 mm
Axial play	preloaded
Max. continuous input speed <sup>2</sup>	8000 rpm
Recommended temperature range	-15...+80°C
Max. axial load (static) <sup>1</sup>	2700 N
Number of stages	0 1 2 3 4
Max. radial load,	15 mm from flange 200 N 200 N 350 N 400 N 400 N

M 1:2

- Stock program
- Standard program
- Special program (on request)

## Part Numbers

Screw Drive Data	363936	363937	363940	363945	363946	363951	363956	363961	363966
1 Reduction	1:1	3.7:1	14:1	33:1	51:1	111:1	246:1	492:1	762:1
2 Absolute reduction	1/1	26/7	676/49	529/16	17576/343	13824/125	421824/1715	86112/175	19044/25
20 Max. feed velocity <sup>1</sup>	mm/s 186	72	19	8.1	5.2	2.4	1.1	0.5	0.3
21 Max. feed force (continuous) <sup>1</sup>	N 216	296	462	614	710	921	1200	1512	1530
22 Max. feed force (intermittent) <sup>1</sup>	N 528	723	1127	1500	1530	1530	1530	1530	1530
<b>Part Numbers</b>		<b>363938</b>	<b>363941</b>		<b>363947</b>	<b>363952</b>	<b>363957</b>	<b>363962</b>	<b>363967</b>
1 Reduction		4.8:1	18:1		66:1	123:1	295:1	531:1	913:1
2 Absolute reduction		24/5	624/35		16224/245	687/56	101062/343	331776/625	36501/40
20 Max. feed velocity <sup>1</sup>	mm/s	56	15		4.0	2.2	0.9	0.5	0.3
21 Max. feed force (continuous) <sup>1</sup>	N	323	502		774	953	1275	1530	1530
22 Max. feed force (intermittent) <sup>1</sup>	N	789	1226		1530	1530	1530	1530	1530
<b>Part Numbers</b>		<b>363939</b>	<b>363942</b>		<b>363948</b>	<b>363953</b>	<b>363958</b>	<b>363963</b>	<b>363968</b>
1 Reduction		5.8:1	21:1		79:1	132:1	318:1	589:1	1093:1
2 Absolute reduction		23/4	299/14		3887/49	3312/25	389376/1225	20631/35	279841/256
20 Max. feed velocity <sup>1</sup>	mm/s	46	13		3.4	2.0	0.8	0.5	0.2
21 Max. feed force (continuous) <sup>1</sup>	N	344	529		822	975	1308	1530	1530
22 Max. feed force (intermittent) <sup>1</sup>	N	840	1291		1530	1530	1530	1530	1530
<b>Part Numbers</b>			<b>363943</b>		<b>363949</b>	<b>363954</b>	<b>363959</b>	<b>363964</b>	
1 Reduction			23:1		86:1	159:1	411:1	636:1	
2 Absolute reduction			576/25		14976/175	1587/10	359424/875	79488/125	
20 Max. feed velocity <sup>1</sup>	mm/s		12		3.1	1.7	0.6	0.4	
21 Max. feed force (continuous) <sup>1</sup>	N		545		846	1038	1424	1530	
22 Max. feed force (intermittent) <sup>1</sup>	N		1330		1530	1530	1530	1530	
<b>Part Numbers</b>			<b>363944</b>		<b>363950</b>	<b>363955</b>	<b>363960</b>	<b>363965</b>	
1 Reduction			28:1		103:1	190:1	456:1	706:1	
2 Absolute reduction			138/5		3588/35	12167/64	89401/196	15817/224	
20 Max. feed velocity <sup>1</sup>	mm/s		9.5		1.3	0.7	0.3	0.2	
21 Max. feed force (continuous) <sup>1</sup>	N		582		898	1101	1475	1530	
22 Max. feed force (intermittent) <sup>1</sup>	N		1420		1530	1530	1530	1530	
4 Number of stages		0	1	2	2	3	3	4	4
7 Max. efficiency gearhead incl. screw	%	47	38	35	35	33	33	28	28
8 Weight <sup>1</sup>	g	304	304	331	331	359	359	387	387
9 Average backlash no load	°	0.7	0.7	0.8	0.8	1.0	1.0	1.0	1.0
23 Mechanical positioning accuracy <sup>1</sup>	mm	0.035	0.035	0.035	0.035	0.037	0.037	0.037	0.037
10 Mass inertia gearhead incl. screw <sup>1</sup>	gcm <sup>2</sup>	42.3	2.4	0.9	0.9	1.0	1.0	1.0	1.0
11 Gearhead length L1	mm	51.0	51.0	57.7	57.7	64.4	64.4	71.1	71.1

<sup>1</sup> based on screw length 200.8 mm (standard length)    <sup>2</sup> for reduction 1:1 = 5569 rpm

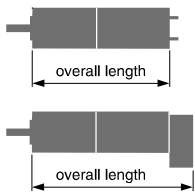


## maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts								
RE 25	134/136			105.6	105.6	112.3	112.3	119.0	119.0	125.7	125.7	125.7
RE 25	134/136	MR	463	116.6	116.6	123.3	123.3	130.0	130.0	136.7	136.7	136.7
RE 25	134/136	Enc 22	468	119.7	119.7	126.4	126.4	133.1	133.1	139.8	139.8	139.8
RE 25	134/136	HED_5540	471/473	126.4	126.4	133.1	133.1	139.8	139.8	146.5	146.5	146.5
RE 25	134/136	DCT 22	480	127.9	127.9	134.6	134.6	141.3	141.3	148.0	148.0	148.0
RE 25, 20 W	135			94.1	94.1	100.8	100.8	107.5	107.5	114.2	114.2	114.2
RE 25, 20 W	135	MR	463	105.1	105.1	111.8	111.8	118.5	118.5	125.2	125.2	125.2
RE 25, 20 W	135	HED_5540	471/473	114.9	114.9	121.6	121.6	128.3	128.3	135.0	135.0	135.0
RE 25, 20 W	135	DCT 22	480	116.4	116.4	123.1	123.1	129.8	129.8	136.5	136.5	136.5
RE 25, 20 W	135	AB 28	519	128.2	128.2	134.9	134.9	141.6	141.6	148.3	148.3	148.3
RE 25, 20 W	135	HED_5540/AB 28	471/519	145.4	145.4	152.1	152.1	158.8	158.8	165.5	165.5	165.5
RE 25, 20 W	136	AB 28	519	139.7	139.7	146.4	146.4	153.1	153.1	159.8	159.8	159.8
RE 25, 20 W	136	HED_5540/AB 28	471/519	156.9	156.9	163.6	163.6	170.3	170.3	177.0	177.0	177.0
RE 30, 60 W	138			119.1	119.1	125.8	125.8	132.5	132.5	139.2	139.2	139.2
RE 30, 60 W	138	MR	464	130.5	130.5	137.2	137.2	143.9	143.9	150.6	150.6	150.6
RE 30, 60 W	138	HED_5540	471/473	139.9	139.9	146.6	146.6	153.3	153.3	160.0	160.0	160.0



# Screw Drive GP 32 S $\varnothing$ 32 mm, Trapezoidal Lead Screw



## Part Numbers

363936	363937	363940	363945	363946	363951	363956	363961	363966
	363938	363941		363947	363952	363957	363962	363967
	363939	363942		363948	363953	363958	363963	363968
		363943		363949	363954	363959	363964	
		363944		363950	363955	363960	363965	

maxon Modular System											
+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts							
RE 35, 90 W	139			122.1	122.1	128.8	128.8	135.5	135.5	142.2	142.2
RE 35, 90 W	139	MR	464	133.5	133.5	140.2	140.2	146.9	146.9	153.6	153.6
RE 35, 90 W	139	HED_5540	471/473	142.8	142.8	149.5	149.5	156.2	156.2	162.9	162.9
RE 35, 90 W	139	DCT 22	480	140.2	140.2	146.9	146.9	153.6	153.6	160.3	160.3
RE 35, 90 W	139	AB 28	519	158.2	158.2	164.9	164.9	171.6	171.6	178.3	178.3
RE 35, 90 W	139	HEDS 5540/AB 28	471/519	175.4	175.4	182.1	182.1	188.8	188.8	195.5	195.5
A-max 26	164			-	95.8	102.5	102.5	109.2	109.2	115.9	115.9
A-max 26	164	MR	463	-	104.6	111.3	111.3	118.0	118.0	124.7	124.7
A-max 26	164	Enc 22	468	-	110.2	116.9	116.9	123.6	123.6	130.3	130.3
A-max 26	164	HED_5540	472/474	-	114.2	120.9	120.9	127.6	127.6	134.3	134.3
A-max 32	165			-	114.0	120.7	120.7	127.4	127.4	134.1	134.1
A-max 32	166			-	112.6	119.3	119.3	126.0	126.0	132.7	132.7
A-max 32	166	MR	464	-	123.8	130.5	130.5	137.2	137.2	143.9	143.9
A-max 32	166	HED_5540	471/473	-	133.4	140.1	140.1	146.8	146.8	153.5	153.5
EC 32, 80 W	228			111.1	111.1	117.8	117.8	124.5	124.5	131.2	131.2
EC 32, 80 W	228	HED_5540	471/473	129.5	129.5	136.2	136.2	142.9	142.9	149.6	149.6
EC 32, 80 W	228	Res 26	481	131.2	131.2	137.9	137.9	144.6	144.6	151.3	151.3
EC-max 22, 25 W	239			-	99.6	106.3	106.3	113.0	113.0	119.7	119.7
EC-max 22, 25 W	239	MR	464	-	109.3	116.0	116.0	122.7	122.7	129.4	129.4
EC-max 22, 25 W	239	AB 20	516	-	135.4	142.1	142.1	148.8	148.8	155.5	155.5
EC-max 30, 40 W	240			-	93.1	99.8	99.8	106.5	106.5	113.2	113.2
EC-max 30, 40 W	240	MR	464	-	105.3	112.0	112.0	118.7	118.7	125.4	125.4
EC-max 30, 40 W	240	HEDL 5540	474	-	113.7	120.4	120.4	127.1	127.1	133.8	133.8
EC-max 30, 40 W	240	AB 20	516	-	128.9	135.6	135.6	142.3	142.3	148.3	148.3
EC-max 30, 40 W	240	HEDL 5540/AB 20	474/516	-	149.5	156.2	156.2	162.9	162.9	169.6	169.6
EC-4pole 22, 90 W	247			99.7	99.7	106.4	106.4	113.1	113.1	119.8	119.8
EC-4pole 22, 90 W	247	16 EASY/XT/Abs.	449-453	111.9	111.9	118.6	118.6	125.3	125.3	132.0	132.0
EC-4pole 22, 90 W	247	16 EASY Abs. XT	455	112.4	112.4	119.1	119.1	125.8	125.8	132.5	132.5
EC-4pole 22, 90 W	247	16 RIO	466	110.4	110.4	117.1	117.1	123.8	123.8	130.5	130.5
EC-4pole 22, 90 W	247	AEDL/HEDL	469/475	121.2	121.2	127.9	127.9	134.6	134.6	141.3	141.3
EC-4pole 22,120 W	248			117.1	117.1	123.8	123.8	130.5	130.5	137.2	137.2
EC-4pole 22,120 W	248	16 EASY/XT/Abs.	449-453	129.3	129.3	136.0	136.0	142.7	142.7	149.4	149.4
EC-4pole 22,120 W	248	16 EASY Abs. XT	455	129.8	129.8	136.5	136.5	143.2	143.2	149.9	149.9
EC-4pole 22,120 W	248	16 RIO	466	127.8	127.8	134.5	134.5	141.2	141.2	147.9	147.9
EC-4pole 22,120 W	248	AEDL/HEDL	469/475	138.6	138.6	145.3	145.3	152.0	152.0	158.7	158.7
EC-i 30, 30 W	258			93.3	93.3	100.0	100.0	106.7	106.7	113.4	113.4
EC-i 30, 30 W	258	16 EASY/Abs.	449/453	105.0	105.0	111.7	111.7	118.4	118.4	125.1	125.1
EC-i 30, 30 W	258	16 RIO	466	103.5	103.5	110.2	110.2	116.9	116.9	123.6	123.6
EC-i 30, 30 W	258	AEDL/HEDL	469/474	114.0	114.0	120.7	120.7	127.4	127.4	134.1	134.1
EC-i 30, 45 W	259			93.3	93.3	100.0	100.0	106.7	106.7	113.4	113.4
EC-i 30, 45 W	259	16 EASY/Abs.	449/453	105.0	105.0	111.7	111.7	118.4	118.4	125.1	125.1
EC-i 30, 45 W	259	16 RIO	466	103.5	103.5	110.2	110.2	116.9	116.9	123.6	123.6
EC-i 30, 45 W	259	AEDL/HEDL	469/474	114.0	114.0	120.7	120.7	127.4	127.4	134.1	134.1
EC-i 30, 50 W	260			115.3	115.3	122.0	122.0	128.7	128.7	135.4	135.4
EC-i 30, 50 W	260	16 EASY/Abs.	449/453	127.0	127.0	133.7	133.7	140.4	140.4	147.1	147.1
EC-i 30, 50 W	260	16 RIO	466	125.5	125.5	132.2	132.2	138.9	138.9	145.6	145.6
EC-i 30, 50 W	260	AEDL/HEDL	469/474	136.0	136.0	142.7	142.7	149.4	149.4	156.1	156.1
EC-i 30, 75 W	261			115.3	115.3	122.0	122.0	128.7	128.7	135.4	135.4
EC-i 30, 75 W	261	16 EASY/Abs.	449/453	127.0	127.0	133.7	133.7	140.4	140.4	147.1	147.1
EC-i 30, 75 W	261	16 RIO	466	125.5	125.5	132.2	132.2	138.9	138.9	145.6	145.6
EC-i 30, 75 W	261	AEDL/HEDL	469/474	136.0	136.0	142.7	142.7	149.4	149.4	156.1	156.1
EC-i 40, 50 W	262			82.7	82.7	89.4	89.4	96.1	96.1	102.8	102.8
EC-i 40, 50 W	262	16 EASY/Abs.	449/453	94.4	94.4	101.1	101.1	107.8	107.8	114.5	114.5
EC-i 40, 50 W	262	16 RIO	466	97.2	97.2	103.9	103.9	110.6	110.6	117.3	117.3
EC-i 40, 50 W	262	AEDL/HEDL	469/474	105.7	105.7	112.4	112.4	119.1	119.1	125.8	125.8
EC-i 40, 70 W	264			92.7	92.7	99.4	99.4	106.1	106.1	112.8	112.8
EC-i 40, 70 W	264	16 EASY/Abs.	449/453	104.4	104.4	111.1	111.1	117.8	117.8	124.5	124.5
EC-i 40, 70 W	264	16 RIO	466	107.2	107.2	113.9	113.9	120.6	120.6	127.3	127.3
EC-i 40, 70 W	264	AEDL/HEDL	469/474	115.7	115.7	122.4	122.4	129.1	129.1	135.8	135.8

screw drive

# Screw Drive Options

screw drive

Option	to GP 6 S	to GP 8 S
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<b>Special length</b> Reference FLEX-GEAR-SPIN02/03	Without specification, the screw is supplied in the standard length 45 mm. Special lengths can be ordered in 5 mm steps up to the stated maximum length.	Without specification, the screw is supplied in the standard length 56 mm. Special lengths can be ordered in 5 mm steps up to the stated maximum length.
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FLEX-GEAR-SPIN04/05	Configurable length	Configurable length
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<b>Screw end</b> Reference FLEX-GEAR-SPIN11  In order to support the end of the screw by an additional bearing, it can be delivered according to the illustration.  Customer specific screw ends on request.		
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<b>Flange nut</b> Reference FLEX-GEAR-SPIN08  Flange nut instead of the standard thread nut.		
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<b>Low backlash ball screw nut</b> Reference FLEX-GEAR-SPIN09	Not available for GP 6 S.	Not available for GP 8 S.
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<b>Rectangular mounting flange</b> Reference FLEX-GEAR-SPIN10  Screw drive with rectangular mounting flange allows mounting from the gearhead side.		
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# Screw Drive Options

Option	to GP 16 S	to GP 22 S
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**Special length**  
Reference FLEX-GEAR-SPIN02/03

Without specification, the screw is supplied in the standard length 102 mm. Special lengths can be ordered in 5 mm steps up to the stated maximum length.

Without specification, the screw is supplied in the standard length 151 mm. Special lengths can be ordered in 5 mm steps up to the stated maximum length.

FLEX-GEAR-SPIN04/05

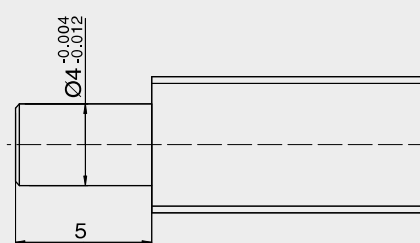
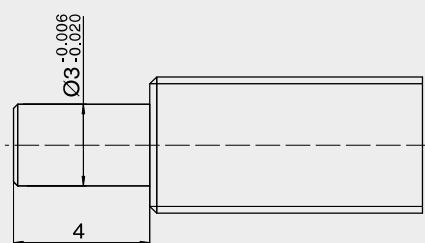
Configurable length

Configurable length

**Screw end**  
Order reference SPIN11

In order to support the end of the screw by an additional bearing, it can be delivered according to the illustration.

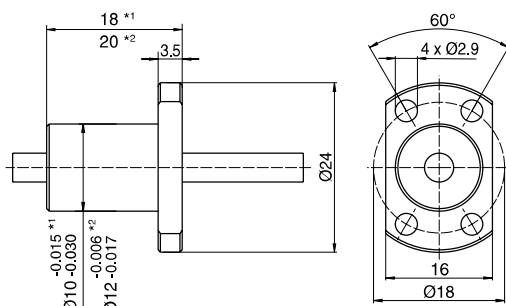
Customer specific screw ends on request.



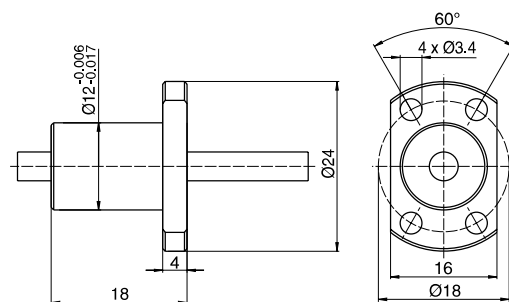
**Flange nut**  
Reference FLEX-GEAR-SPIN08

Flange nut instead of the standard thread nut.

If using a ball screw, the rectangular mounting flange (FLEX-GEAR-SPIN10) must be used.



\*1 Kugelumlaufspindel / Ball screw  
\*2 Metrische Spindel / Metric lead screw



**Low backlash ball screw nut**  
Reference FLEX-GEAR-SPIN09

Not available for GP 16 S.

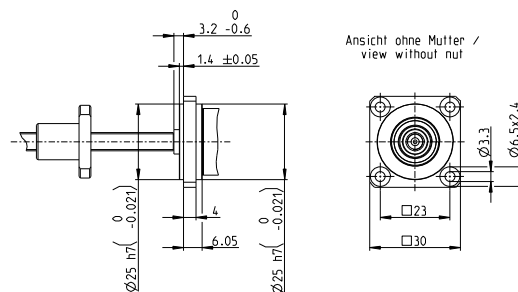
Axial play is almost eliminated through increased preloading of the ball screw nut. Although, the increased load can lead to greater wear.

**Rectangular mounting flange**  
Reference FLEX-GEAR-SPIN10

Screw drive with rectangular mounting flange allows mounting from the gearhead side.

On request.

If using a ball screw with flange nut, the rectangular assembly flange must be used for mounting.



# Screw Drive Options

screw drive

Option	to GP 32 S
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**Special length**  
Reference FLEX-GEAR-SPIN02/03

Without specification, the screw is supplied in the standard length 200,8 mm. Special lengths can be ordered in 5 mm steps up to the stated maximum length.

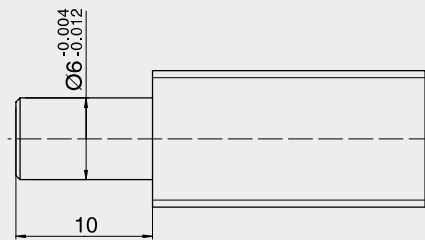
FLEX-GEAR-SPIN04/05

Configurable length

**Screw end**  
Reference FLEX-GEAR-SPIN11

In order to support the end of the screw by an additional bearing, it can be delivered according to the illustration.

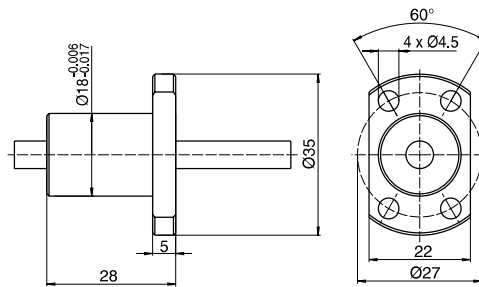
Customer specific screw ends on request.



**Flange nut**  
Reference FLEX-GEAR-SPIN08

Flange nut instead of the standard thread nut.

If using a ball screw, the rectangular mounting flange (FLEX-GEAR-SPIN10) must be used.



**Low backlash ball screw nut**  
Reference FLEX-GEAR-SPIN09

Axial play is almost eliminated through increased preloading of the ball screw nut. Although, the increased load can lead to greater wear.

**Rectangular mounting flange**  
Reference FLEX-GEAR-SPIN10

Screw drive with rectangular mounting flange allows mounting from the gearhead side.

If using a ball screw with flange nut, the rectangular assembly flange must be used for mounting.

