

maxon gear

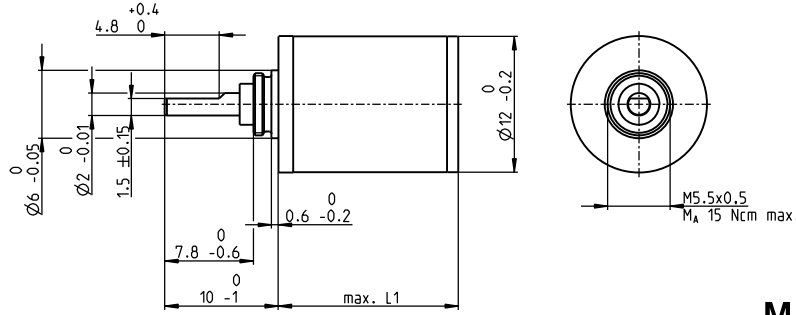
Standard Specification No. 102	69
Explanation	318
GPX Program	320-355
maxon gear	320-404



Precision spur- and planetary gearheads matched to maxon motors. Gears are advantageously adapted directly to the desired motors in the delivery plant. The motor pinion is the input gearwheel for the first stage and is rigidly affixed to the motor shaft.

Spur Gearhead GS 12 A $\varnothing 12$ mm, 0.01–0.03 Nm

gear

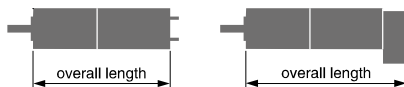


Technical Data

Spur Gearhead	straight teeth
Output shaft	stainless steel, hardened
Bearing at output	sleeve bearing
Radial play, 6.5 mm from flange	max. 0.05 mm
Axial play	0.02–0.12 mm
Max. axial load (dynamic)	2 N
Max. force for press fits	30 N
Max. continuous input speed	8000 rpm
Recommended temperature range	-15...+100°C
Extended range as option	-40...+100°C
Max. radial load, 6.5 mm from flange	2 N

M 3:2

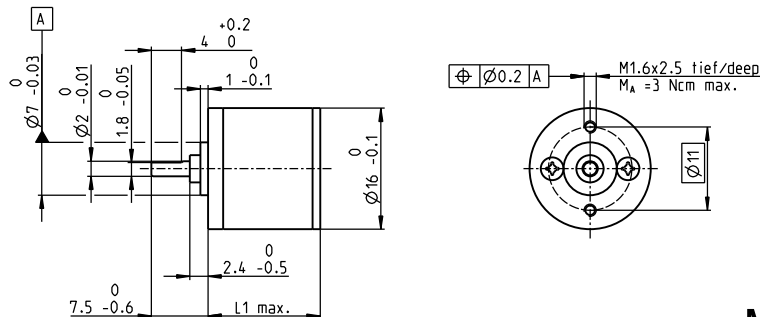
	Part Numbers							
	310301	313872	313990	313991	310311	313993	310316	
Gearhead Data								
1 Reduction	6.4:1	13:1	58:1	141:1	371:1	485:1	3101:1	
2 Absolute reduction	$\frac{403}{63}$	$\frac{21866}{1694}$	$\frac{724594}{12474}$	$\frac{20138716}{142884}$	$\frac{26782109}{72171}$	$\frac{624300196}{1285956}$	$\frac{11537547853}{3720087}$	
3 Max. motor shaft diameter	mm 1.2	1.0	1.0	1.2	1.0	1.2	1.2	
Part Numbers	310302	310304	310307	313992		310313	310317	
1 Reduction	9.1:1	22:1	76:1	200:1		900:1	4402:1	
2 Absolute reduction	$\frac{899}{99}$	$\frac{12493}{567}$	$\frac{387283}{5103}$	$\frac{22462414}{112266}$		$\frac{372178963}{413343}$	$\frac{25737606749}{6845851}$	
3 Max. motor shaft diameter	mm 1.0	1.2	1.2	1.0		1.2	1.0	
Part Numbers		310305	310308	310310		310314		
1 Reduction		31:1	108:1	261:1		1278:1		
2 Absolute reduction		$\frac{27889}{891}$	$\frac{863939}{8019}$	$\frac{12005773}{45927}$		$\frac{830245379}{649539}$		
3 Max. motor shaft diameter	mm	1.0	1.0	1.2		1.0		
4 Number of stages		2	3	4	5	5	6	7
5 Max. continuous torque	Nm	0.010	0.015	0.020	0.025	0.025	0.030	0.030
6 Max. intermittent torque at gear output	Nm	0.030	0.035	0.040	0.045	0.045	0.050	0.050
12 Direction of rotation, drive to output		=	≠	=	≠	=	≠	≠
7 Max. efficiency	%	81	73	66	59	59	53	48
8 Weight	g	6.5	7.4	8.3	9.2	9.2	10.1	11
9 Average backlash no load	°	1	1	1.2	1.2	1.2	1.2	1.5
10 Mass inertia	gcm ²	0.002	0.002	0.002	0.002	0.002	0.002	0.002
11 Gearhead length L1	mm	10	12	14	16	16	18	20



maxon Modular System				
+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts
A-max 12	147/148			31.3 33.3 35.3 37.3 37.3 39.3 41.3
A-max 12, 0.5 W	148	MR	457/458	35.4 37.4 39.4 41.4 41.4 43.4 45.4

Spur Gearhead GS 16 K $\varnothing 16$ mm, 0.01–0.03 Nm

Plastic Version



M 1:1

Technical Data

Spur Gearhead	straight teeth
Output shaft	stainless steel, hardened
Bearing at output	sleeve bearing
Radial play, 6,5 mm from flange	max. 0.15 mm
Axial play	0.02–0.12 mm
Max. axial load (dynamic)	2 N
Max. force for press fits	15 N
Max. continuous input speed	8000 rpm
Recommended temperature range	-15...+80°C
Max. radial load, 6,5 mm from flange	1 N

gear

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

Part Numbers

	201463	201465	201467	201469	201471	201473
Gearhead Data						
1 Reduction	6.4:1	22:1	76:1	261:1	900:1	3101:1
2 Absolute reduction	$\frac{409}{63}$	$\frac{12493}{567}$	$\frac{387283}{5103}$	$\frac{12005773}{45927}$	$\frac{372178963}{413343}$	$\frac{11537547853}{3720087}$
3 Max. motor shaft diameter	mm 1.5	1.5	1.5	1.5	1.5	1.5
Part Numbers	207405	207406	207407	207408	207409	207410
1 Reduction	9.1:1	31:1	108:1	371:1	1278:1	4402:1
2 Absolute reduction	$\frac{899}{99}$	$\frac{27869}{891}$	$\frac{863939}{8019}$	$\frac{26782109}{72171}$	$\frac{830245379}{649539}$	$\frac{25737606749}{5845851}$
3 Max. motor shaft diameter	mm 1.5	1.5	1.5	1.5	1.5	1.5
Part Numbers	201464	201466	201468	201470	201472	201474
1 Reduction	12:1	41:1	141:1	485:1	1670:1	5752:1
2 Absolute reduction	$\frac{96}{81}$	$\frac{2979}{729}$	$\frac{92352}{6561}$	$\frac{2862915}{59049}$	$\frac{887503681}{531441}$	$\frac{2751261411}{4782969}$
3 Max. motor shaft diameter	mm 1	1	1	1	1	1
4 Number of stages	2	3	4	5	6	7
5 Max. continuous torque	Nm 0.010	0.020	0.030	0.030	0.030	0.030
6 Max. intermittent torque at gear output	Nm 0.10	0.10	0.10	0.10	0.10	0.10
12 Direction of rotation, drive to output	=	≠	=	≠	=	≠
7 Max. efficiency	% 81	73	66	59	53	48
8 Weight	g 9.0	9.8	10.2	10.7	11.3	11.7
9 Average backlash no load	° 1.0	1.0	1.2	1.2	1.5	1.5
10 Mass inertia	gcm ² 0.0032	0.0031	0.0031	0.0031	0.0031	0.0031
11 Gearhead length L1	mm 11.8	12.8	14.8	16.8	18.8	20.8

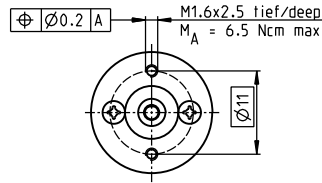
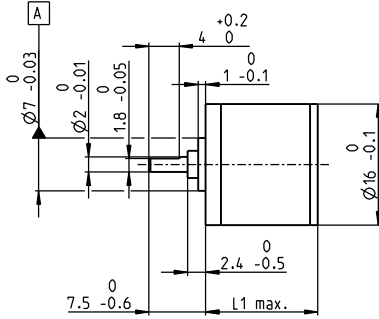


maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts					
A-max 16	149-152			37.3	38.3	40.3	42.3	44.3	46.3
A-max 16	150/152	MR	460/461	42.3	43.3	45.3	47.3	49.3	51.3

Spur Gearhead GS 16 A $\varnothing 16$ mm, 0.015–0.04 Nm

gear



M 1:1

Technical Data

Spur Gearhead	straight teeth
Output shaft	stainless steel, hardened
Bearing at output	sleeve bearing
Radial play, 6.5 mm from flange	max. 0.15 mm
Axial play	0.02–0.12 mm
Max. axial load (dynamic)	2 N
Max. force for press fits	30 N
Max. continuous input speed	8000 rpm
Recommended temperature range	-15...+100°C
Extended range as option	-40...+100°C
Max. radial load, 6.5 mm from flange	2 N

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

Part Numbers

Gearhead Data	144409	143761	143763	143765	143767	143769
1 Reduction	6.4:1	22:1	76:1	261:1	900:1	3101:1
2 Absolute reduction	$\frac{403}{63}$	$\frac{12493}{567}$	$\frac{387283}{5103}$	$\frac{12005773}{45927}$	$\frac{372178963}{413343}$	$\frac{11537547853}{3720087}$
3 Max. motor shaft diameter	mm 1.5	1.5	1.5	1.5	1.5	1.5
Part Numbers	207834	207835	207836	207837	207838	207839
1 Reduction	9.1:1	31:1	108:1	371:1	1278:1	4402:1
2 Absolute reduction	$\frac{899}{99}$	$\frac{27869}{891}$	$\frac{863939}{8019}$	$\frac{26782109}{72171}$	$\frac{830245379}{649539}$	$\frac{25737606749}{5845851}$
3 Max. motor shaft diameter	mm 1.5	1.5	1.5	1.5	1.5	1.5
Part Numbers	144410	143762	143764	143766	143768	143770
1 Reduction	12:1	41:1	141:1	485:1	1670:1	5752:1
2 Absolute reduction	$\frac{961}{81}$	$\frac{2979}{729}$	$\frac{923521}{6561}$	$\frac{28629151}{69049}$	$\frac{887503681}{531441}$	$\frac{27512614111}{4782969}$
3 Max. motor shaft diameter	mm 1	1	1	1	1	1
4 Number of stages	2	3	4	5	6	7
5 Max. continuous torque	Nm 0,015	0,025	0,035	0,040	0,040	0,040
6 Max. intermittent torque at gear output	Nm 0,10	0,10	0,10	0,10	0,10	0,10
12 Direction of rotation, drive to output	=	≠	=	≠	=	≠
7 Max. efficiency	% 81	73	66	59	53	48
8 Weight	g 9,0	9,8	10,2	10,7	11,3	11,7
9 Average backlash no load	° 1,0	1,0	1,2	1,2	1,5	1,5
10 Mass inertia	gcm ² 0,0032	0,0031	0,0031	0,0031	0,0031	0,0031
11 Gearhead length L1	mm 11,8	12,8	14,8	16,8	18,8	20,8

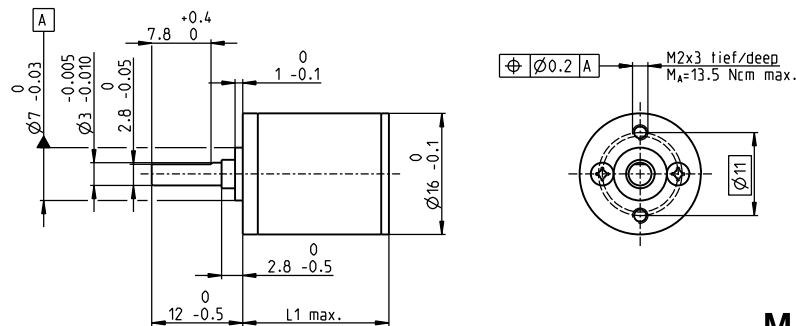


maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts					
A-max 16	149-152			37,3	38,3	40,3	42,3	44,3	46,3
A-max 16	150/152	MR	460/461	42,3	43,3	45,3	47,3	49,3	51,3

Spur Gearhead GS 16 V $\varnothing 16$ mm, 0.06–0.1 Nm

Reinforced



M 1:1

Technical Data

Spur Gearhead	straight teeth
Output shaft	stainless steel, hardened
Bearing at output	preloaded ball bearings
Radial play, 6,5 mm from flange	max. 0.02 mm
Axial play at axial load	< 5 N 0 mm > 5 N max. 0.05 mm
Max. axial load (dynamic)	5 N
Max. force for press fits	5 N
Max. continuous input speed	8000 rpm
Recommended temperature range	-15...+100°C
Extended range as option	-40...+100°C
Number of stages	2 3 4 5 6 7
Max. radial load, 6,5 mm from flange	10 N 15 N 20 N 22 N 22 N 22 N

gear

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

Part Numbers

Gearhead Data	235066	235070	235073	235076	235079	235082
1 Reduction	6.4:1	22:1	76:1	261:1	900:1	3101:1
2 Absolute reduction	$\frac{403}{63}$	$\frac{12493}{567}$	$\frac{387283}{5103}$	$\frac{12005773}{45927}$	$\frac{372178963}{413343}$	$\frac{11537547853}{3720087}$
3 Max. motor shaft diameter	mm 1.5	1.5	1.5	1.5	1.5	1.5
Part Numbers	235068	235071	235074	235077	235080	235083
1 Reduction	9.1:1	31:1	108:1	371:1	1278:1	4402:1
2 Absolute reduction	$\frac{899}{99}$	$\frac{27869}{691}$	$\frac{863939}{8019}$	$\frac{26782109}{72171}$	$\frac{830245379}{649539}$	$\frac{25737606749}{5845851}$
3 Max. motor shaft diameter	mm 1.5	1.5	1.5	1.5	1.5	1.5
Part Numbers	235069	235072	235075	235078	235081	235084
1 Reduction	12:1	41:1	141:1	485:1	1670:1	5752:1
2 Absolute reduction	$\frac{96}{81}$	$\frac{2979}{729}$	$\frac{92352}{6561}$	$\frac{2862915}{59049}$	$\frac{887503681}{531441}$	$\frac{2751261411}{4782969}$
3 Max. motor shaft diameter	mm 1	1	1	1	1	1
4 Number of stages	2	3	4	5	6	7
5 Max. continuous torque	Nm 0,06	0,06	0,10	0,10	0,10	0,10
6 Max. intermittent torque at gear output	Nm 0,15	0,15	0,30	0,30	0,30	0,30
12 Direction of rotation, drive to output	=	≠	=	≠	=	≠
7 Max. efficiency	% 81	73	66	59	53	48
8 Weight	g 13,8	14,5	15,8	17,0	17,9	18,5
9 Average backlash no load	° 1,0	1,0	1,2	1,2	1,5	1,5
10 Mass inertia	gcm ² 0,0057	0,0052	0,0035	0,0032	0,0032	0,0032
11 Gearhead length L1	mm 14,3	17,3	19,3	21,3	23,3	25,3



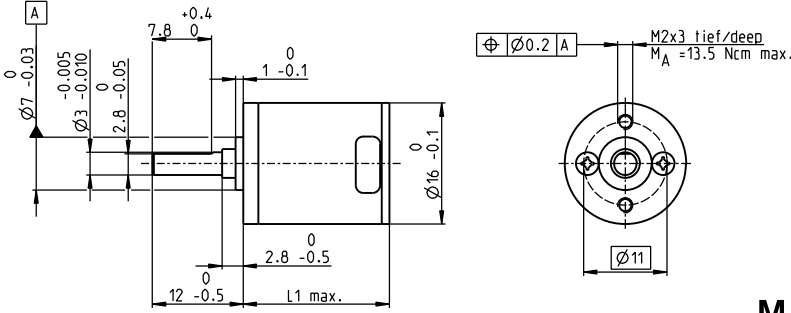
maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts					
A-max 16	149-152			39,8	42,8	44,8	46,8	48,8	50,8
A-max 16	150/152	MR	460/461	44,8	47,8	49,8	51,8	53,8	55,8

Spur Gearhead GS 16 VZ $\varnothing 16$ mm, 0.1 Nm

Low Backlash

gear



M 1:1

Technical Data

Spur Gearhead	straight teeth
Output shaft	stainless steel, hardened
Bearing at output	preloaded ball bearings
Radial play, 6,5 mm from flange	max. 0.02 mm
Axial play at axial load	< 5 N 0 mm
	> 5 N max. 0.05 mm
Max. axial load (dynamic)	5 N
Max. force for press fits	5 N
Max. continuous input speed	8000 rpm
Recommended temperature range	-15...+100°C
Extended range as option	-40...+100°C
Number of stages	4 5 6
Max. radial load, 6,5 mm from flange	20 N 22 N 22 N

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

Part Numbers

Gearhead Data	327789	327796	327800
1 Reduction	76:1	261:1	900:1
2 Absolute reduction	$\frac{387283}{5103}$	$\frac{12005773}{45927}$	$\frac{372178963}{413343}$
3 Max. motor shaft diameter	mm 1.5	1.5	1.5
Part Numbers	327788	327797	327801
1 Reduction	108:1	371:1	1278:1
2 Absolute reduction	$\frac{863939}{8019}$	$\frac{26782109}{72171}$	$\frac{830245379}{649539}$
3 Max. motor shaft diameter	mm 1.5	1.5	1.5
Part Numbers	327790	327799	327802
1 Reduction	141:1	485:1	1670:1
2 Absolute reduction	$\frac{923521}{6561}$	$\frac{2862915}{69049}$	$\frac{887503681}{631441}$
3 Max. motor shaft diameter	mm 1	1	1
4 Number of stages	4	5	6
5 Max. continuous torque	Nm 0.10	0.10	0.10
6 Max. intermittent torque at gear output	Nm 0.30	0.30	0.30
12 Direction of rotation, drive to output	=	≠	=
7 Max. efficiency	% 62	54	48
8 Weight	g 17.2	18.7	20.2
9 Average backlash no load	° 0.3	0.45	0.5
10 Mass inertia	gcm ² 0.017	0.014	0.013
11 Gearhead length L1	mm 19.3	21.3	23.3

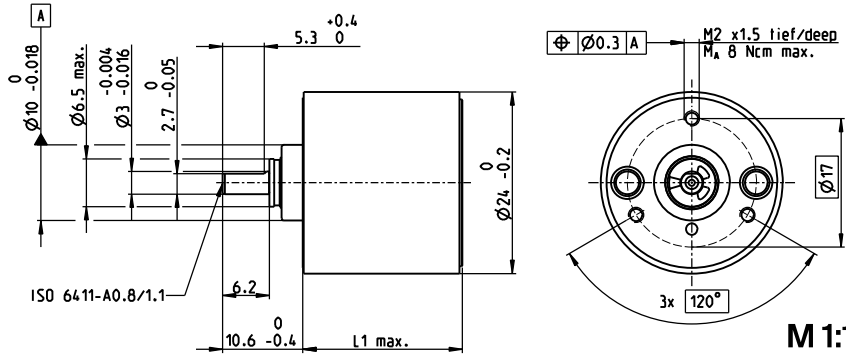


maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts		
A-max 16	149-152			44.8	46.8	48.8
A-max 16	150/152	MR	460/461	49.8	51.8	53.8

Spur Gearhead GS 24 A Ø24 mm, 0.1 Nm

gear



Technical Data

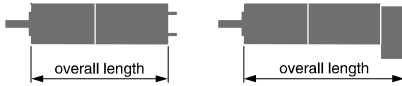
Spur Gearhead	straight teeth
Housing	plastic
Output shaft	stainless steel, hardened
Bearing at output	sleeve bearing
Radial play, 8 mm from flange	max. 0.038 mm
Axial play	0.03–0.30 mm
Max. axial load (dynamic)	8 N
Max. force for press fits	500 N
Max. continuous input speed	4000 rpm
Recommended temperature range	-15...+80°C
Max. radial load, 8 mm from flange	5 N

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

Part Numbers

Gearhead Data	Part Numbers							
	110480	110481	110482	110483	110484	110485	110486	
1 Reduction	72:1	20:1	32:1	64:1	131:1	199:1	325:1	
2 Absolute reduction	$\frac{93}{13}$	$\frac{753424}{38025}$	$\frac{923521}{28561}$	$\frac{837}{13}$	$\frac{212629}{1625}$	$\frac{887503681}{4455516}$	$\frac{14070001}{43264}$	
3 Max. motor shaft diameter	mm 2	2	2	2	2	2	2	
4 Number of stages	2	4	4	4	4	6	6	
5 Max. continuous torque	Nm 0.1	0.1	0.1	0.1	0.1	0.1	0.1	
6 Max. intermittent torque at gear output	Nm 0.15	0.15	0.15	0.15	0.15	0.15	0.15	
12 Direction of rotation, drive to output	=	=	=	=	=	=	=	
7 Max. efficiency	% 81	66	66	66	66	53	53	
8 Weight	g 25	28	28	28	28	30	30	
9 Average backlash no load	° 1.0	2.0	2.0	2.0	2.0	3.0	3.0	
10 Mass inertia	gcm ² 0.008	0.01	0.008	0.007	0.006	0.008	0.006	
11 Gearhead length L1*	mm 16.5	20.2	20.2	20.2	20.2	24	24	

*L1 for A-max 22 L1 is -2.8 mm

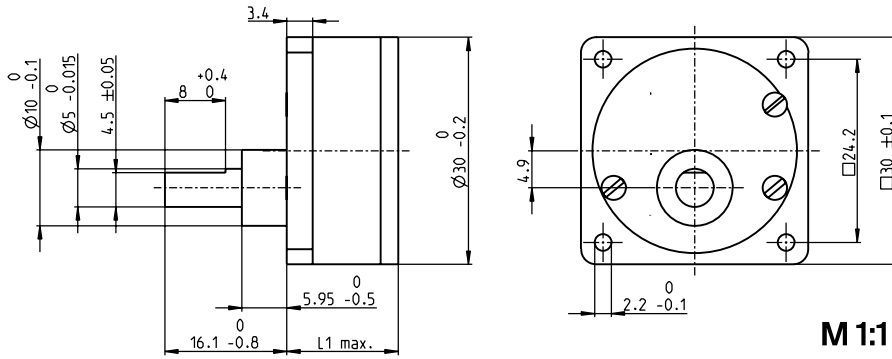


maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts								
A-max 19	153/154			45.5	49.2	49.2	49.2	49.2	53.0	53.0		
A-max 19, 1.5 W	154	MR	460/461	50.6	54.3	54.3	54.3	54.3	58.1	58.1		
A-max 19, 1.5 W	154	Enc 22	468	59.9	63.6	63.6	63.6	63.6	67.4	67.4		
A-max 19, 2.5 W	155/156			48.1	51.8	51.8	51.8	51.8	55.6	55.6		
A-max 19, 2.5 W	156	MR	460/461	52.4	56.1	56.1	56.1	56.1	59.9	59.9		
A-max 19, 2.5 W	156	Enc 22	468	62.5	66.2	66.2	66.2	66.2	70.0	70.0		
A-max 22	157-160			45.7	49.4	49.4	49.4	49.4	53.2	53.2		
A-max 22	158/160	MR	460/461	50.7	54.4	54.4	54.4	54.4	58.2	58.2		
A-max 22	158/160	Enc 22	468	60.1	63.8	63.8	63.8	63.8	67.6	67.6		

Spur Gearhead GS 30 A $\varnothing 30$ mm, 0.07-0.2 Nm

gear



Technical Data

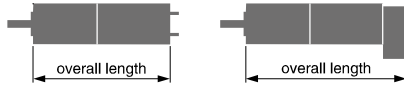
Spur Gearhead	straight teeth
Output shaft	stainless steel
Shaft diameter as option	8 mm
Bearing at output	sleeve bearing
Radial play, 5 mm from flange	max. 0.1 mm
Axial play	0.03-0.2 mm
Max. axial load (dynamic)	15 N
Max. force for press fits	400 N
Max. continuous input speed	5000 rpm
Recommended temperature range	-5...+80°C
Max. radial load, 5 mm from flange	35 N

Option: Low-noise version

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

Part Numbers

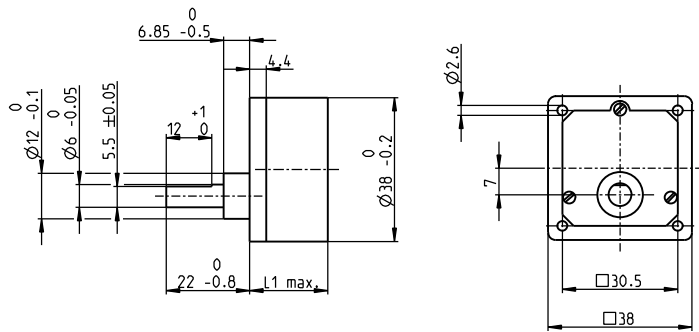
Gearhead Data	Part Numbers						
	110445	110446	110447	110448	110449	110450	
1 Reduction	15:1	30:1	60:1	100:1	200:1	500:1	
2 Absolute reduction	15	30	60	100	200	500	
3 Max. motor shaft diameter	mm 2	2	2	2	2	2	
4 Number of stages	3	3	4	4	5	6	
5 Max. continuous torque	Nm 0.07	0.07	0.10	0.10	0.20	0.20	
6 Max. intermittent torque at gear output	Nm 0.21	0.21	0.30	0.30	0.60	0.60	
12 Direction of rotation, drive to output	≠	≠	=	=	≠	=	
7 Max. efficiency	% 73	73	66	66	60	53	
8 Weight	g 40	40	45	45	50	55	
9 Average backlash no load	° 1.0	1.0	1.5	1.5	2.0	2.5	
10 Mass inertia	gcm ² 0.17	0.14	0.12	0.10	0.10	0.10	
11 Gearhead length L1	mm 23.0	23.0	25.5	25.5	30.5	30.5	



maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts					
A-max 26	161-164			67.8	67.8	70.3	70.3	75.3	75.3
A-max 26	161-164	MR	463	76.6	76.6	79.1	79.1	84.1	84.1
A-max 26	161-164	Enc 22	468	82.2	82.2	84.7	84.7	89.7	89.7
A-max 26	161-164	HED_5540	472/474	86.2	86.2	88.7	88.7	93.7	93.7

Spur Gearhead GS 38 A $\varnothing 38$ mm, 0.1–0.6 Nm



Technical Data

Spur Gearhead	straight teeth
Output shaft	stainless steel
Bearing at output	sleeve bearing
Radial play, 12 mm from flange	max. 0.1 mm
Axial play	0.03–0.2 mm
Max. axial load (dynamic)	30 N
Max. force for press fits	500 N
Max. continuous input speed	5000 rpm
Recommended temperature range	-5...+80°C
Number of stages	1 2 3 4 5
Max. radial load, 12 mm from flange	50 N 50 N 50 N 50 N 50 N

gear

M 1:2

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

Part Numbers

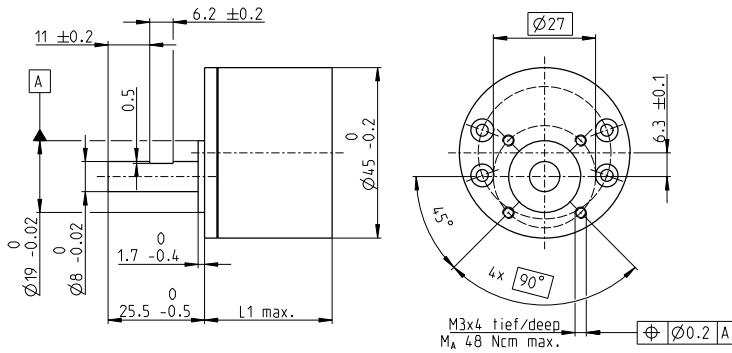
Gearhead Data	Part Numbers									
	110451	110452	110453	110454	110455	110456	110457	110458	110459	
1 Reduction	6:1	10:1	18:1	30:1	60:1	100:1	200:1	500:1	900:1	
2 Absolute reduction	6	10	18	30	60	100	200	500	900	
3 Max. motor shaft diameter	mm 3	3	3	3	3	3	3	3	3	
4 Number of stages	2	2	3	3	4	4	5	6	6	
5 Max. continuous torque	Nm 0.1	0.1	0.2	0.2	0.3	0.3	0.6	0.6	0.6	
6 Max. intermittent torque at gear output	Nm 0.3	0.3	0.6	0.6	0.9	0.9	1.8	1.8	1.8	
12 Direction of rotation, drive to output	=	=	≠	≠	=	=	≠	=	=	
7 Max. efficiency	% 81	81	73	73	66	66	59	53	53	
8 Weight	g 55	55	60	60	65	65	70	75	75	
9 Average backlash no load	° 1.0	1.0	1.5	1.5	2.0	2.0	2.5	3.0	3.0	
10 Mass inertia	gcm ² 0.7	0.6	0.4	0.4	0.3	0.3	0.2	0.2	0.2	
11 Gearhead length L1*	mm 20.6	20.6	23.1	23.1	25.6	25.6	28.1	30.6	30.6	

*for EC 32 flat L1 is + 2.0 mm



maxon Modular System												
+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts								
A-max 26	161-164			65.4	65.4	67.9	67.9	70.4	70.4	72.9	75.4	75.4
A-max 26	162-164	MR	463	74.2	74.2	76.7	76.7	79.2	79.2	81.7	84.2	84.2
A-max 26	162-164	Enc 22	468	79.8	79.8	82.3	82.3	84.8	84.8	87.3	89.8	89.8
A-max 26	162-164	HED_ 5540	472/474	83.8	83.8	86.3	86.3	88.8	88.8	91.3	93.8	93.8
A-max 32	165			83.6	83.6	86.1	86.1	88.6	88.6	91.1	93.6	93.6
A-max 32	166			82.2	82.2	84.7	84.7	87.2	87.2	89.7	92.2	92.2
A-max 32	166	MR	464	93.4	93.4	95.9	95.9	98.4	98.4	100.9	103.4	103.4
A-max 32	166	HED_ 5540	472/474	103.0	103.0	105.5	105.5	108.0	108.0	110.5	113.0	113.0
EC 32 flat, 15 W	282			38.6	38.6	41.1	41.1	43.6	43.6	46.1	48.6	48.6
EC 32 flat, IE, IP 00	283			48.7	48.7	51.2	51.2	53.7	53.7	56.2	58.7	58.7
EC 32 flat, IE, IP 40	283			50.4	50.4	52.9	52.9	55.4	55.4	57.9	60.4	60.4

Spur Gearhead GS 45 A $\varnothing 45$ mm, 0.5–2.0 Nm



Technical Data

Spur Gearhead	straight teeth
Output shaft	stainless steel, hardened
Bearing at output	ball bearing
Radial play, 10 mm from flange	max. 0.15 mm
Axial play	0.02–0.2 mm
Max. axial load (dynamic)	60 N
Max. force for press fits	60 N
Max. continuous input speed	6000 rpm
Recommended temperature range	-15...+80°C
Number of stages	2 3 4 5 6
Max. radial load, 10 mm from flange	120 N 180 N 190 N 190 N 190 N

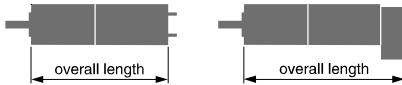
M 1:2

- Stock program
- Standard program
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Part Numbers

Gearhead Data	678432	678440	678527	678531	678539
1 Reduction	5:1	18:1	61:1	212:1	732:1
2 Absolute reduction	$\frac{5}{10}$	$\frac{459}{26}$	$\frac{20655}{338}$	$\frac{125862}{595}$	$\frac{492790}{673}$
10 Mass inertia	gcm ² 3.7	1.6	1.0	0.8	0.8
3 Max. motor shaft diameter	mm 3	3	3	3	3
Part Numbers	678433	678438	678528	678532	678540
1 Reduction	7:1	26:1	89:1	310:1	1072:1
2 Absolute reduction	$\frac{209}{28}$	$\frac{9405}{364}$	$\frac{66632}{745}$	$\frac{183281}{592}$	$\frac{307572}{287}$
10 Mass inertia	gcm ² 3.1	1.4	1.0	0.8	0.8
3 Max. motor shaft diameter	mm 3	3	3	3	3
Part Numbers	678434	678436	678529	678533	678541
1 Reduction	9:1	32:1	111:1	385:1	1334:1
2 Absolute reduction	$\frac{2295}{247}$	$\frac{8523}{265}$	$\frac{334}{3}$	$\frac{173809}{451}$	$\frac{198769}{149}$
10 Mass inertia	gcm ² 2.1	1.4	0.6	0.5	0.4
3 Max. motor shaft diameter	mm 3	3	3	3	3
Part Numbers	678435	678437	678530	678536	678542
1 Reduction	14:1	47:1	163:1	564:1	1952:1
2 Absolute reduction	$\frac{2479}{182}$	$\frac{6221}{132}$	$\frac{141157}{861}$	$\frac{161880}{287}$	$\frac{1929023}{988}$
10 Mass inertia	gcm ² 2.2	0.9	0.5	0.5	0.4
3 Max. motor shaft diameter	mm 3	3	3	3	3
4 Number of stages	2	3	4	5	6
5 Max. continuous torque	Nm 0.5	2.0	2.0	2.0	2.0
6 Max. intermittent torque at gear output	Nm 0.75	2.5	2.5	2.5	2.5
12 Direction of rotation, drive to output	=	≠	=	≠	=
7 Max. efficiency	% 87	76	66	59	53
8 Weight	g 113	113	125	140	149
9 Average backlash no load	° 1.6	2.0	2.4	2.8	3.2
11 Gearhead length L1*	mm 24.2	24.2	26.9	30.4	33.8

*for EC 45 flat, IE, L1 is max. + 4.0 mm



maxon Modular System						
+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts		
EC 45 flat, 30 W	285			40.7	40.7	50.3
EC 45 flat, 30 W	285	MILE	446	42.9	42.9	52.5
EC 45 flat, 50 W	286			46.3	46.3	55.9
EC 45 flat, 50 W	286	MILE	446	47.1	47.1	56.7
EC 45 flat, 60 W	287			46.3	46.3	55.9
EC 45 flat, 60 W	287	MILE	446	47.1	47.1	56.7
EC 45 flat, 90 W	288			52.3	52.3	61.9
EC 45 flat, 90 W	288	MILE	446	53.1	53.1	62.7
EC 45 flat, 70 W	289			51.3	51.3	60.9
EC 45 flat, 70 W	289	MILE	446	52.1	52.1	61.7
EC 45 flat, 80 W	290			51.3	51.3	60.9
EC 45 flat, 80 W	290	MILE	446	52.1	52.1	61.7
EC 45 flat, 120 W	291			57.3	57.3	66.9
EC 45 flat, 120 W	291	MILE	446	58.1	58.1	67.7
EC 45 flat, IE, IP 00	292			59.9	59.9	69.5
EC 45 flat, IE, IP 40	292			62.1	62.1	71.7
EC 45 flat, IE, IP 00	293			64.9	64.9	74.5
EC 45 flat, IE, IP 40	293			67.1	67.1	76.7