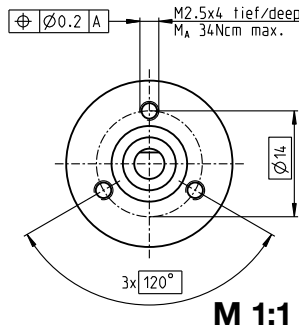
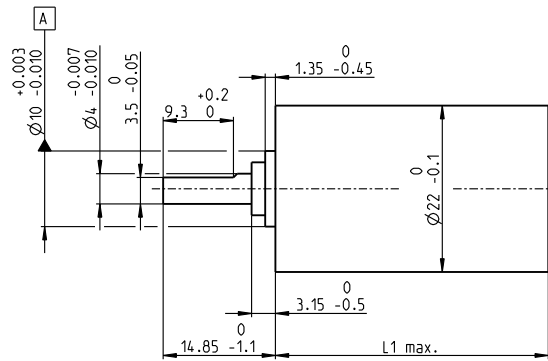


# Planetary Gearhead GP 22 C Ø22 mm, 0.5–2.0 Nm

Ceramic Version



## Technical Data

Planetary Gearhead	straight teeth
Output shaft	stainless steel, hardened
Bearing at output	ball bearing
Radial play, 10 mm from flange	max. 0.2 mm
Axial play	max. 0.2 mm
Max. axial load (dynamic)	100 N
Max. force for press fits	100 N
Direction of rotation, drive to output	=
Max. continuous input speed	8000 rpm
Recommended temperature range	-40...+100°C
Number of stages	1 2 3 4 5
Max. radial load, 10 mm from flange	30 N 50 N 55 N 55 N 55 N

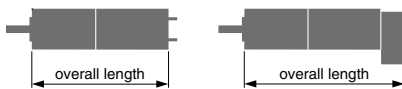
maxon gear

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

## Part Numbers

	143971	143974	143980	143986	143990	143996	144002	144004	144011	144017	144023
<b>Gearhead Data</b>											
1 Reduction	3.8:1	14:1	53:1	104:1	198:1	370:1	590:1	742:1	1386:1	1996:1	3189:1
2 Absolute reduction	15/4	225/16	3375/64	8723/845	50625/256	10556001/28561	59049/100	759375/1024	158340015/14244	285012027/142805	1594323/500
3 Max. motor shaft diameter	mm 4	4	4	3.2	4	3.2	4	4	3.2	3.2	4
<b>Part Numbers</b>	143972	143975	143981	143987	143991	143997	144003	144006	144012	144018	144024
1 Reduction	4.4:1	16:1	62:1	109:1	231:1	389:1	690:1	867:1	1460:1	2102:1	3728:1
2 Absolute reduction	57/13	855/52	12825/208	2187/20	192375/832	263169/676	1121931/1625	2885625/3328	3947535/2704	7105563/3380	30292137/8125
3 Max. motor shaft diameter	mm 3.2	3.2	3.2	4	3.2	3.2	3.2	3.2	3.2	3.2	3.2
<b>Part Numbers</b>	143973	143976	143982	143988	143992	143998	144005	144007	144013	144019	144025
1 Reduction	5.4:1	19:1	72:1	128:1	270:1	410:1	850:1	1014:1	1538:1	2214:1	4592:1
2 Absolute reduction	27/5	3249/169	48735/676	41559/325	731025/2704	6561/16	531441/625	10965375/10816	98415/64	177147/80	14348907/3125
3 Max. motor shaft diameter	mm 2.5	3.2	3.2	3.2	4	2.5	3.2	4	4	4	2.5
<b>Part Numbers</b>		143977	143983	143989	143993	143999		144008	144014	144020	
1 Reduction		20:1	76:1	157:1	285:1	455:1		1068:1	1621:1	2458:1	
2 Absolute reduction		81/4	1215/16	19683/125	18225/64	5000211/10985		273375/256	601692057/371293	135005697/54925	
3 Max. motor shaft diameter		mm 4	4	2.5	4	3.2		4	3.2	3.2	
<b>Part Numbers</b>		143978	143984		143994	144000		144009	144015	144021	
1 Reduction		24:1	84:1		316:1	479:1		1185:1	1707:1	2589:1	
2 Absolute reduction		1539/65	185193/2197		2777895/8788	124659/260		41668425/35152	15000633/8788	3365793/300	
3 Max. motor shaft diameter		mm 3.2	3.2		3.2	3.2		3.2	3.2	3.2	
<b>Part Numbers</b>		143979	143985		143995	144001		144010	144016	144022	
1 Reduction		29:1	89:1		333:1	561:1		1249:1	1798:1	3027:1	
2 Absolute reduction		729/25	4617/52		68255/208	2368521/4225		1038825/832	373977/208	63950067/21125	
3 Max. motor shaft diameter		mm 2.5	3.2		3.2	3.2		3.2	3.2	3.2	
4 Number of stages		1	2	3	4	4		5	5	5	5
5 Max. continuous torque	Nm	0.5	0.6	1.2	1.2	1.8	1.8	1.8	2.0	2.0	2.0
6 Max. intermittent torque at gear output	Nm	0.8	0.9	1.9	1.9	2.7	2.7	2.7	3.0	3.0	3.0
7 Max. efficiency	%	84	70	59	59	49	49	49	42	42	42
8 Weight	g	42	55	68	68	81	81	81	94	94	94
9 Average backlash no load	°	1.0	1.2	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.0
10 Mass inertia	gcm <sup>2</sup>	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
11 Gearhead length L1*	mm	25.4	32.2	39.0	39.0	45.8	45.8	45.8	52.6	52.6	52.6

\*L1 is -2.8 mm for calculating the overall length



## maxon Modular System

+ Motor	Page	+ Sensor/Brake	Page	Overall length [mm] = Motor length + gearhead length + (sensor/brake) + assembly parts									
A-max 19	143/144			51.6	58.4	65.2	65.2	72.0	72.0	78.8	78.8	78.8	78.8
A-max 19, 1.5 W	144	MR	416/417	56.7	63.5	70.3	70.3	77.1	77.1	77.1	83.9	83.9	83.9
A-max 19, 1.5 W	144	Enc 22	426	66.0	72.8	79.6	79.6	86.4	86.4	86.4	93.2	93.2	93.2
A-max 19, 1.5 W	144	MEnc 13	407	59.1	65.9	72.7	72.7	79.5	79.5	79.5	86.3	86.3	86.3
A-max 19, 2.5 W	145/146			54.2	61.0	67.8	67.8	74.6	74.6	74.6	81.4	81.4	81.4
A-max 19, 2.5 W	146	MR	416/417	58.5	65.3	72.1	72.1	78.9	78.9	78.9	85.7	85.7	85.7
A-max 19, 2.5 W	146	Enc 22	426	68.6	75.4	82.2	82.2	89.0	89.0	89.0	95.8	95.8	95.8
A-max 19, 2.5 W	146	MEnc 13	407	61.7	68.5	75.3	75.3	82.1	82.1	82.1	88.9	88.9	88.9
A-max 22	147-150			54.6	61.4	68.2	68.2	75.0	75.0	75.0	81.8	81.8	81.8
A-max 22	148/150	MR	416/417	59.6	66.4	73.2	73.2	80.0	80.0	80.0	86.8	86.8	86.8
A-max 22	148/150	Enc 22	426	69.0	75.8	82.6	82.6	89.4	89.4	89.4	96.2	96.2	96.2
A-max 22	148/150	MEnc 13	407	61.7	68.5	75.3	75.3	82.1	82.1	82.1	88.9	88.9	88.9