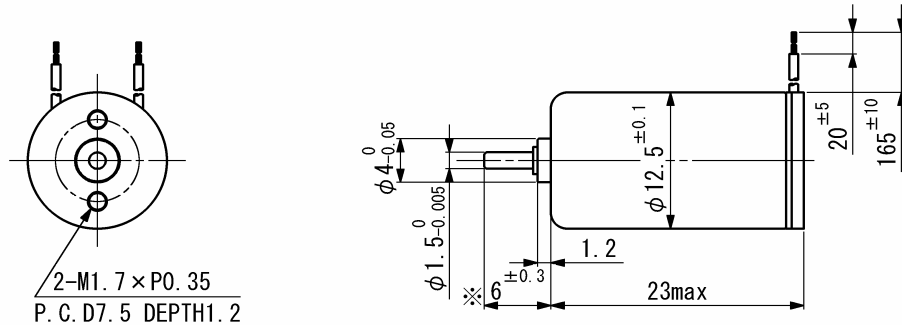


# SCL12-22

Precious metal commutation



Weight 13.7 g  
Dimension in mm

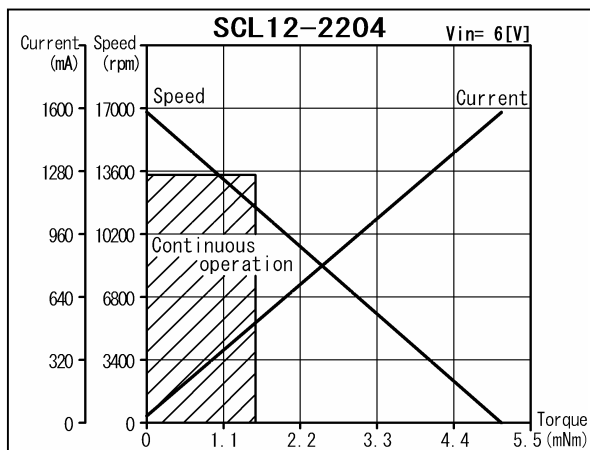
Note) Dimension marked ※ is measured with shaft pushed against motor.

For combination with gearheads: SSG12, SPG12

Ordering number			SCL12-2204	SCL12-2222
1 Nominal voltage			6	12 V
2 Terminal resistance			3.8	21.9 Ω
3 Output power			2.3	1.6 W
4 Efficiency			72	75 %
5 No-load speed			16800	14000 rpm
6 No-load current			35	10 mA
7 Stall torque			5.15	4.32 mNm
8 Friction torque			0.12	0.08 mNm
9 Back-EMF constant			0.35	0.84 mV/rpm
10 Torque constant			3.33	8.03 mNm/A
11 Slope of N-T curve			3270	3240 rpm/mNm
12 Coil inductance			0.05	0.36 mH
13 Mechanical time constant			11.7	9.7 ms
14 Rotor inertia			0.34	0.29 gcm <sup>2</sup>

### Continuous operation

15 Speed range			13400	11200 rpm
16 Max. torque			1.6	1.64 mNm



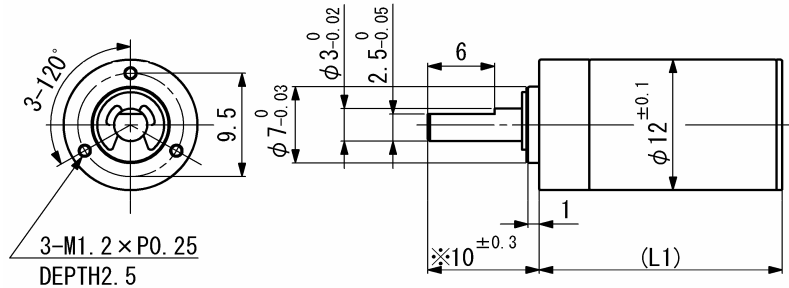
### General specifications

17 Operating temperature	-20...+60	°C
18 Max. coil temperature	+80	°C
19 Thermal resistances	R <sub>th1</sub> = 10, R <sub>th2</sub> = 35	K/W
20 Bearings type	Sintered sleeves	
21 Max. shaft radial load	1.2 (5 mm)	N
22 Max. shaft axial load	0.2	N
23 Max. axial load at standstill	9.8	N
24 Shaft radial play	0.05	mm
25 Shaft axial play	0.03...0.2	mm

**Options:** Lead wires length, terminals instead of lead wires, shaft length, special coils, commutator with capacitors.

# SPG12

## Planetary gearhead



Dimension in mm

Note) Dimension marked ※ is measured with shaft pushed against gearhead.

For combination with motors: SCL12-20, SCL12-22, SCL12-30

### General specifications

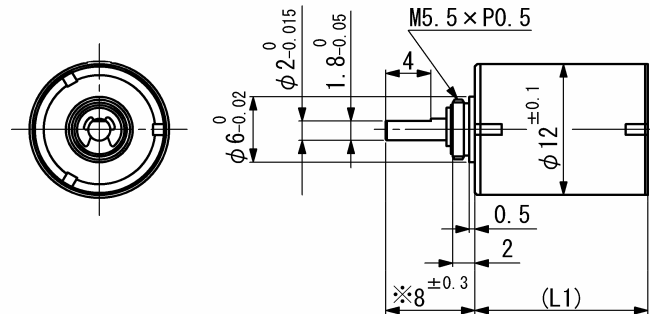
	SPG12	
Housing material	Metal	
Geartrain material	Steel	
Recommended max. input speed	8000	rpm
Operating temperature range	-10...+60	°C
Backlash at no-load per stage	≤ 1	°
Bearings on output shaft	Sintered sleeve bearings	
Max. shaft radial load (7 mm from flange)	4 (25)	N
Max. shaft axial load	2	N
Max. shaft press fit force	30	N
Shaft radial play	≤ 0.03	mm
Shaft axial play	≤ 0.3	mm

In parenthesis the max. radial load with ball bearing option.

Ratio (nominal)	Stage	Gearhead length, L1 [mm]	Gearhead weight [g]	Max. allowable torque [mNm]		Length with motor [mm]			Efficiency [%]	Direction of rotation
				Continuous	Intermittent	SCL12-20	SCL12-22	SCL12-30		
3.5 : 1	1	14.2	11.6	100	200	35.2	37.2	46.2	85	=
4.8 : 1	1	14.2	11.6	100	200	35.2	37.2	46.2	85	=
12 : 1	2	18	14.1	100	200	39	41	50	72	=
23 : 1	2	18	14.1	100	200	39	41	50	72	=
58 : 1	3	21.8	16.6	100	200	42.8	44.8	53.8	61	=
107 : 1	3	21.8	16.6	100	200	42.8	44.8	53.8	61	=
509 : 1	4	25.7	19.1	100	200	46.7	48.7	57.7	52	=

# SSG12

## Spur gearhead



Dimension in mm

Note) Dimension marked ※ is measured with shaft pushed against gearhead.

For combination with motors: SCL12-20, SCL12-22, SCL12-30

### General specifications

	SSG12	
Housing material	Metal	
Geartrain material	Metal	
Recommended max. input speed	8000	rpm
Operating temperature range	-10...+60	°C
Max. backlash at no-load, 5 stages	≤ 5	°
Bearings on output shaft	Sintered sleeve bearings	
Max. shaft radial load (10 mm from flange)	3	N
Max. shaft axial load	1	N
Max. shaft press fit force	20	N
Shaft radial play	≤ 0.03	mm
Shaft axial play	≤ 0.2	mm

Ratio (nominal)	Stage	Gearhead length, L1 [mm]	Gearhead weight [g]	Max. allowable torque [mNm]		Length with motor [mm]			Efficiency [%]	Direction of rotation
				Continuous	Intermittent	SCL12-20	SCL12-22	SCL12-30		
16 : 1	3	14	8.3	12	30	35	37	46	73	≠
25 : 1	3	14	8.3	12	30	35	37	46	73	≠
47 : 1	4	16	9.2	15	30	37	39	48	66	=
74 : 1	4	16	9.2	15	30	37	39	48	66	=
94 : 1	4	16	9.2	15	30	37	39	48	66	=
175 : 1	5	18	10.2	15	30	39	41	50	59	≠
282 : 1	5	18	10.2	15	30	39	41	50	59	≠