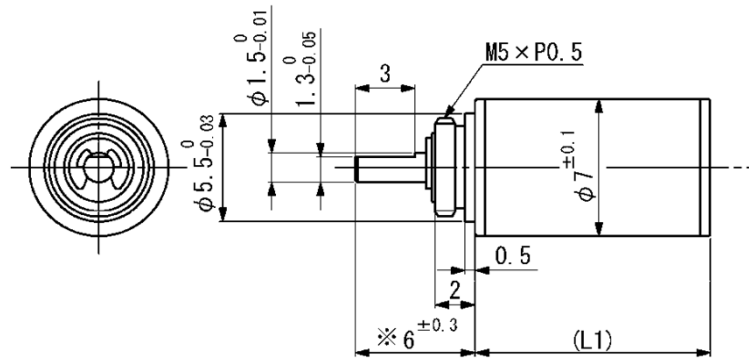


# SPG07

## Planetary gearhead



Dimension in

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

General specifications	SPG07	
1 Housing material	Metal	
2 Geartrain material	Steel	
3 Recommended max. input speed	12000	rpm
4 Operation temperature range	-10...+60	°C
5 Backlash at no-load per stage	≤ 1	°
6 Bearings on output shaft	Sintered sleeve bearings	
7 Max. shaft radial load (7mm from flange)	1	N
8 Max. shaft axial load	0.5	N
9 Max. shaft press fit force	10	N
10 Shaft radial play	≤ 0.03	mm
11 Shaft axial play	≤ 0.3	mm
12 Max. allowable torque (Continuous)	10	mNm
13 Max. allowable torque (Intermittent)	20	mNm

General specifications	SPG07-				
	4.7	22	105	494	
12 Reduction ratio (absolute value)	4.71 : 1	22.22 : 1	104.77 : 1	493.93 : 1	
13 Number of stage	1	2	3	4	
14 Efficiency	85	72	61	52	%
15 Direction of rotation	=	=	=	=	
16 Gearhead length: L1	7.4	9.6	11.8	14.1	mm
17 Weight	2	2.5	3	3.5	g

Combination		Reduction ratio( Motor+gearhead total length)				
Type	Model name	4.7	22	105	494	
Brushed coreless motor	CMS07-17..P	24.4	26.6	28.8	31.1	mm
Brushless coreless motor	BMS07-13..P	20.4	22.6	24.8	27.1	mm
	BMS07-20..P	27.4	29.6	31.8	34.1	mm

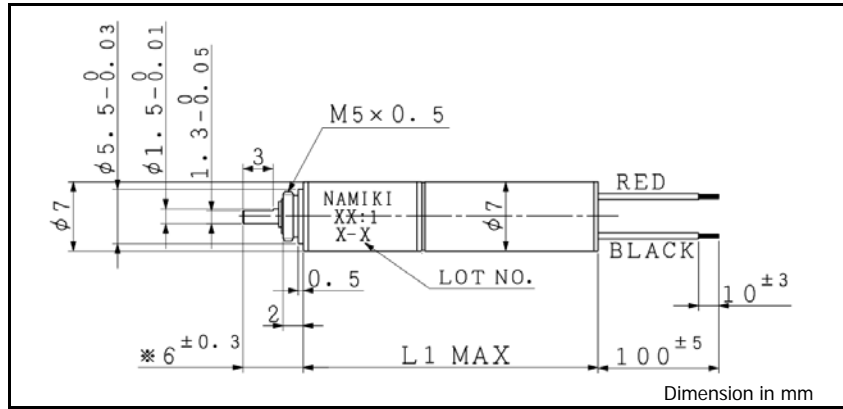
# CMS07-17..P Geared motor (Planetary gearhead)

**Planetary gearhead**

SPG07

**Coreless motor**

CMS07-1707  
CMS07-1725



General specification

	4.7	22	105	494	
1 Reduction ratio(absolute value)	4.71 : 1	22.22 : 1	104.77 : 1	493.93 : 1	
2 Number of stage	1	2	3	4	
3 Efficiency	85	72	61	52	%
4 Direction of rotation	=	=	=	=	
5 Geared motor length: L1	24.9	27.1	29.3	31.6	mm
6 Max. allowable torque (Continuous)	10				mNm
7 Max. allowable torque (Intermittent)	20				mNm

**CMS07-1707P Rated voltage: 3.7 V**

Ordering number	CMS07-1707P	4.7	22	105	494	
8 Rated torque		0.6	2.2	9	10	mNm
9 Rated speed		3360	692	142	36	rpm
10 No load speed		4040	838	173	38	rpm
11 No load current		51	62	75	61	mA
12 Stall torque		3.3	13	50	205	mNm
13 Stall current		534	534	534	534	mA

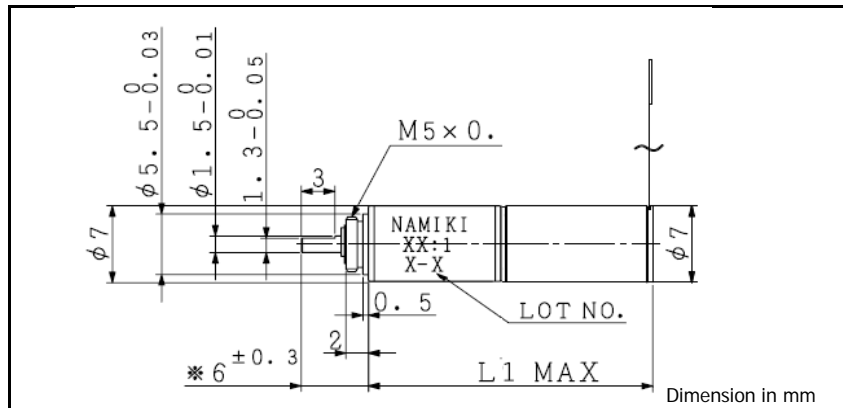
**CMS07-1725P Rated voltage: 7.4 V**

Ordering number	CMS07-1725P	4.7	22	105	494	
8 Rated torque		0.6	2.3	9	10	mNm
9 Rated speed		3640	750	154	39	rpm
10 No load speed		4380	906	187	41	rpm
11 No load current		29	35	43	35	mA
12 Stall torque		3.4	13	51	211	mNm
13 Stall current		299	299	299	299	mA

# BMS07-13..P Geared motor (Planetary gearhead)

**Planetary gearhead**  
SPG07

**Brushless motor**  
BMS07-1305  
BMS07-1311



**General specification**

	4.7	22	105	494	
1 Reduction ratio(absolute value)	4.71 : 1	22.22 : 1	104.77 : 1	493.93 : 1	
2 Number of stage	1	2	3	4	
3 Efficiency	85	72	61	52	%
4 Direction of rotation	=	=	=	=	
5 Geared motor length: L1	20.4	22.6	24.8	27.1	mm
6 Max. allowable torque (Continuous)	10				mNm
7 Max. allowable torque (Intermittent)	20				mNm

**BMS07-1305P Rated voltage: 7.4 V**

Ordering number	BMS07-1305P				
	4.7	22	105	494	
8 Rated torque	1.7	7.0	10	10	mNm
9 Rated speed	7320	1500	389	95	rpm
10 No load speed	10500	2160	440	98	rpm
11 No load current	348	380	432	375	mA
12 Stall torque	5.8	23	88	367	mNm
13 Stall current	1636	1636	1636	1636	mA

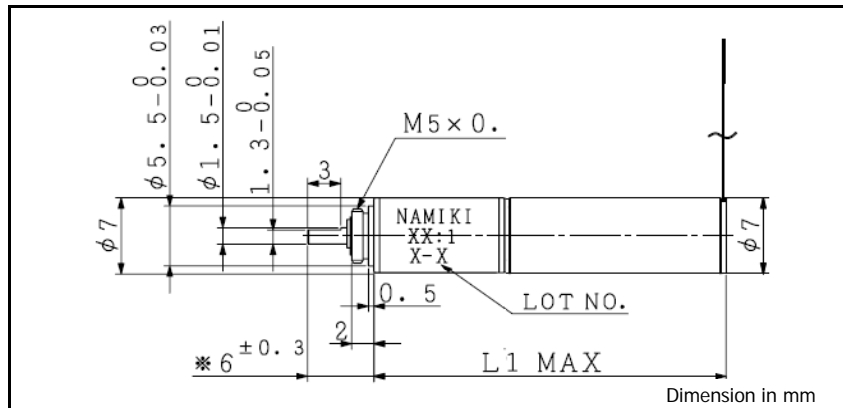
**BMS07-1311P Rated voltage: 12.0 V**

Ordering number	BMS07-1311P				
	4.7	22	105	494	
8 Rated torque	1.8	7.3	10	10	mNm
9 Rated speed	7680	1570	411	100	rpm
10 No load speed	11000	2270	461	103	rpm
11 No load current	235	257	292	253	mA
12 Stall torque	6.0	24	91	381	mNm
13 Stall current	1101	1101	1101	1101	mA

# BMS07-20..P Geared motor (Planetary gearhead)

**Planetary gearhead**  
SPG07

**Brushless motor**  
BMS07-2003  
BMS07-2011



**General specification**

	4.7	22	105	494	
1 Reduction ratio(absolute value)	4.71 : 1	22.22 : 1	104.77 : 1	493.93 : 1	
2 Number of stage	1	2	3	4	
3 Efficiency	85	72	61	52	%
4 Direction of rotation	=	=	=	=	
5 Geared motor length: L1	27.4	29.6	31.8	34.1	mm
6 Max. allowable torque (Continuous)	10				mNm
7 Max. allowable torque (Intermittent)	20				mNm

**BMS07-2003P Rated voltage: 7.4 V**

Ordering number	BMS07-2003P	15	29	49	93	
8 Rated torque		2.1	8.4	10	10	mNm
9 Rated speed		8620	1770	465	111	rpm
10 No load speed		12200	2520	513	114	rpm
11 No load current		450	493	562	485	mA
12 Stall torque		7.2	28	108	453	mNm
13 Stall current		2262	2262	2262	2262	mA

**BMS07-2011P Rated voltage: 12.0 V**

Ordering number	BMS07-2011P	15	29	49	93	
8 Rated torque		1.8	7.3	10	10	mNm
9 Rated speed		7550	1540	403	98	rpm
10 No load speed		10800	2220	452	100	rpm
11 No load current		225	246	279	242	mA
12 Stall torque		6.1	24	91	383	mNm
13 Stall current		1072	1072	1072	1072	mA