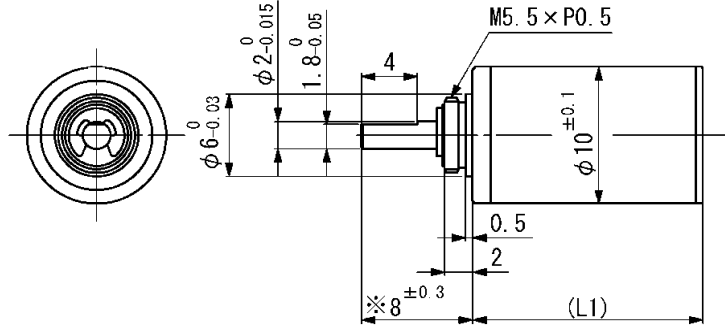


SPG10

Planetary gearhead



Dimension in

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

General specifications	SPG10	
1 Housing material	Metal	
2 Geartrain material	Steel	
3 Recommended max. input speed	10000	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)	3	N
8 Max. shaft axial load	1	N
9 Max. shaft press fit force	20	N
10 Shaft radial play	≤ 0.03	mm
11 Shaft axial play	≤ 0.3	mm
12 Max. allowable torque (Continuous)	50	mNm
13 Max. allowable torque (Intermittent)	100	mNm

General specifications SPG10-	3.6	4.7	13	22	61	105	288	494	
12 Reduction ratio (absolute value)	3.60 : 1	4.70 : 1	12.96 : 1	22.22 : 1	61.10 : 1	104.77 : 1	288.03 : 1	493.93 : 1	
13 Number of stage	1	1	2	2	3	3	4	4	
14 Efficiency	85	85	72	72	61	61	52	52	%
15 Direction of rotation	=	=	=	=	=	=	=	=	
16 Gearhead length: L1	10.5	10.5	13.5	13.5	16.5	16.5	19.6	19.6	mm
17 Weight	5.8	5.8	7.1	7.1	8.4	8.4	9.7	9.7	g

Combination		Reduction ratio (Motor+gearhead total length)								
Type	Model name	3.6	4.7	13	22	61	105	288	494	
Brushed coreless motor	CMS10-12..P	22.5	22.5	25.5	25.5	28.5	28.5	31.6	31.6	mm
	CMS10-18..P	28.5	28.5	31.5	31.5	34.5	34.5	37.6	37.6	mm
Brushless coreless motor	BMS10-10..P	20.5	20.5	23.5	23.5	26.5	26.5	29.6	29.6	mm
	BMS10-18..P	28.5	28.5	31.5	31.5	34.5	34.5	37.6	37.6	mm

V01

Specifications are subject to change without notice.

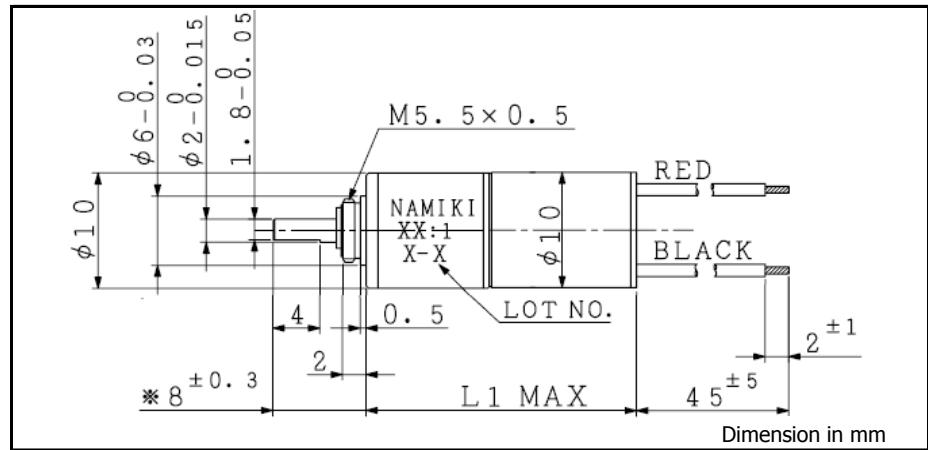
CMS10-12..P Geared motor (Planerary gearhead)

Planetary gearhead

SPG10

Coreless motor

CMS10-1206
CMS10-1221
CMS10-1245



General specification

	3.6	4.7	13	22	61	105	288	494	
1 Reduction ratio(absolute value)	3.60 : 1	4.70 : 1	12.96 : 1	22.22 : 1	61.10 : 1	104.77 : 1	288.03 : 1	493.93 : 1	
2 Number of stage	1	1	2	2	3	3	4	4	
3 Efficiency	85	85	72	72	61	61	52	52	%
4 Direction of rotation	=	=	=	=	=	=	=	=	
5 Geared motor length: L1	22.5	22.5	25.5	25.5	28.5	28.5	31.6	31.6	mm
6 Max. allowable torque (Continuous)	50								mNm
7 Max. allowable torque (Intermittent)	100								mNm

CMS10-1206P Rated voltage: 3.7 V

Ordering number	CMS10-1206P	3.6	4.7	13	22	61	105	288	494	
8 Rated torque		0.42	0.55	1.3	2.2	5.2	8.9	21	36	mNm
9 Rated speed		3980	3240	1080	633	246	129	50	29	rpm
10 No load speed		4850	3910	1330	774	297	159	61	35	rpm
11 No load current		115	91	123	123	97	136	115	121	mA
12 Stall torque		2.4	3.2	7.1	12	30	47	115	195	mNm
13 Stall current		587	587	587	587	587	587	587	587	mA

CMS10-1221P Rated voltage: 7.4 V

Ordering number	CMS10-1221P	3.6	4.7	13	22	61	105	288	494	
8 Rated torque		0.43	0.56	1.3	2.3	5.3	9.0	21	36	mNm
9 Rated speed		4550	3720	1240	723	282	147	57	33	rpm
10 No load speed		5560	4490	1520	886	341	182	69	40	rpm
11 No load current		73	58	78	78	62	87	73	76	mA
12 Stall torque		2.4	3.3	7.2	12	31	48	117	199	mNm
13 Stall current		352	352	352	352	352	352	352	352	mA

CMS10-1245P Rated voltage: 12 V

Ordering number	CMS10-1245P	3.6	4.7	13	22	61	105	288	494	
8 Rated torque		0.44	0.58	1.3	2.3	5.4	9.3	22	37	mNm
9 Rated speed		5240	4300	1430	832	326	169	66	38	rpm
10 No load speed		6400	5180	1750	1020	394	208	80	46	rpm
11 No load current		58	46	62	62	49	69	58	60	mA
12 Stall torque		2.4	3.4	7.4	13	31	49	120	204	mNm
13 Stall current		264	264	264	264	264	264	264	264	mA

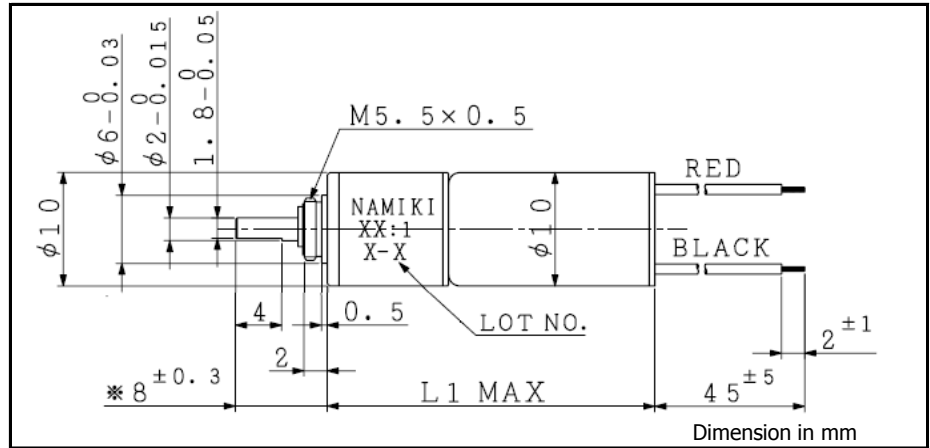
CMS10-18..P Geared motor (Planerary gearhead)

Planetary gearhead

SPG10

Coreless motor

CMS10-1805
CMS10-1818
CMS10-1834



General specification

	3.6	4.7	13	22	61	105	288	494	
1 Reduction ratio(absolute value)	3.60 : 1	4.70 : 1	12.96 : 1	22.22 : 1	61.10 : 1	104.77 : 1	288.03 : 1	493.93 : 1	
2 Number of stage	1	1	2	2	3	3	4	4	
3 Efficiency	85	85	72	72	61	61	52	52	%
4 Direction of rotation	=	=	=	=	=	=	=	=	
5 Geared motor length: L1	28.5	28.5	31.5	31.5	34.5	34.5	37.6	37.6	mm
6 Max. allowable torque (Continuous)	50								mNm
7 Max. allowable torque (Intermittent)	100								mNm

CMS10-1805P Rated voltage: 3.7 V

Ordering number CMS10-1805P	3.6	4.7	13	22	61	105	288	494	
8 Rated torque	0.83	1.1	2.5	4.4	10	17	41	50	mNm
9 Rated speed	2690	2110	741	432	161	91	34	20	rpm
10 No load speed	3170	2480	876	511	189	107	40	23	rpm
11 No load current	61	49	64	64	52	70	61	65	mA
12 Stall torque	5.4	7.2	17	28	67	112	266	454	mNm
13 Stall current	689	689	689	689	689	689	689	689	mA

CMS10-1818P Rated voltage: 7.4 V

Ordering number CMS10-1818P	3.6	4.7	13	22	61	105	288	494	
8 Rated torque	0.84	1.1	2.6	4.4	10	18	41	50	mNm
9 Rated speed	3200	2510	882	514	192	108	40	24	rpm
10 No load speed	3780	2960	1040	608	226	128	47	27	rpm
11 No load current	40	32	42	42	34	46	40	42	mA
12 Stall torque	5.4	7.3	17	28	68	112	267	455	mNm
13 Stall current	418	418	418	418	418	418	418	418	mA

CMS10-1834P Rated voltage: 12 V

Ordering number CMS10-1834P	3.6	4.7	13	22	61	105	288	494	
8 Rated torque	0.90	1.2	2.7	4.7	11	19	44	76	mNm
9 Rated speed	3960	3110	1090	637	238	133	50	29	rpm
10 No load speed	4640	3630	1280	747	278	157	58	34	rpm
11 No load current	33	27	35	35	28	39	33	35	mA
12 Stall torque	6.2	8.2	19	32	77	127	302	516	mNm
13 Stall current	357	357	357	357	357	357	357	357	mA

V01

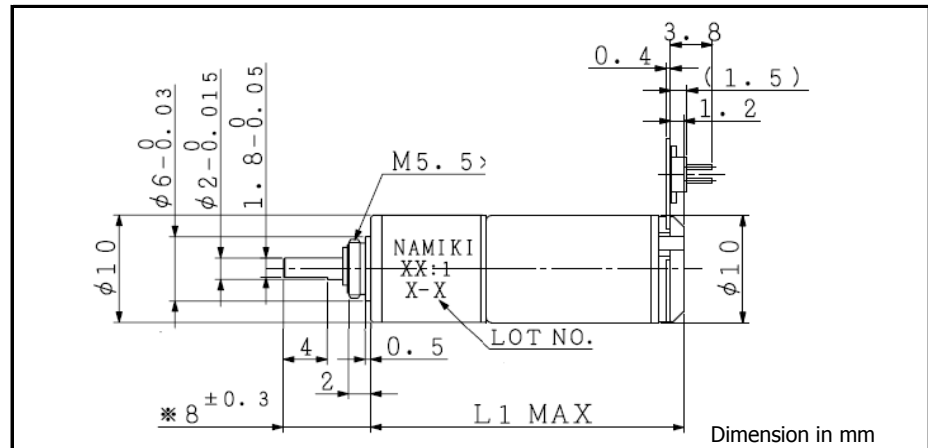
BMS10-18..P Geared motor (Planetary gearhead)

Planetary gearhead

SPG10

Brushless motor

BMS10-1802
BMS10-1806



General specification	SPG10	3.6	4.7	13	22	61	105	288	494	
1 Reduction ratio(absolute value)		3.60 : 1	4.70 : 1	12.96 : 1	22.22 : 1	61.10 : 1	104.77 : 1	288.03 : 1	493.93 : 1	
2 Number of stage		1	1	2	2	3	3	4	4	
3 Efficiency		85	85	72	72	61	61	52	52	%
4 Direction of rotation		=	=	=	=	=	=	=	=	
5 Geared motor length: L1		28.5	28.5	31.5	31.5	34.5	34.5	37.6	37.6	mm
6 Max. allowable torque (Continuous)		50								mNm
7 Max. allowable torque (Intermittent)		100								mNm

BMS10-1802P Rated voltage: 7.4 V

Ordering number	BMS10-1802P	3.6	4.7	13	22	61	105	288	494	
8 Rated torque		2.2	2.9	7	12	27	46	50	50	mNm
9 Rated speed		8160	6360	2250	1310	488	275	112	68	rpm
10 No load speed		9720	7560	2690	1570	580	329	122	71	rpm
11 No load current		235	199	247	247	205	275	235	237	mA
12 Stall torque		14	18	42	71	170	283	672	1152	mNm
13 Stall current		3091	3091	3091	3091	3091	3091	3091	3091	mA

BMS10-1806P Rated voltage: 12.0 V

Ordering number	BMS10-1806P	3.6	4.7	13	22	61	105	288	494	
8 Rated torque		2.2	2.8	7	11	26	45	50	50	mNm
9 Rated speed		8420	6580	2320	1360	504	283	116	70	rpm
10 No load speed		10100	7870	2790	1630	604	341	126	74	rpm
11 No load current		157	133	165	165	137	184	157	158	mA
12 Stall torque		13	17	39	67	160	266	632	1083	mNm
13 Stall current		1897	1897	1897	1897	1897	1897	1897	1897	mA