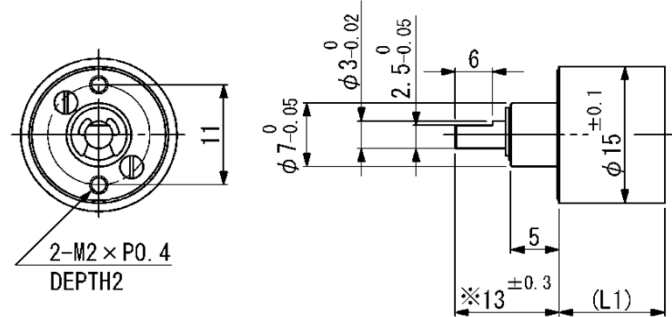


SSG15

Spur gearhead



Dimension in mm

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

General specifications	SSG15	
1 Housing material	Metal	
2 Geartrain material	Metal	
3 Recommended max. input speed	6000	rpm
4 Operation temperature range	-10...+60	°C
5 Backlash at no-load per stage	≤ 5	°
6 Bearings on output shaft	Sintered sleeve bearings	
7 Max. shaft radial load (7mm from flange)	4	N
8 Max. shaft axial load	2	N
9 Max. shaft press fit force	30	N
10 Shaft radial play	≤ 0.03	mm
11 Shaft axial play	≤ 0.2	mm
12 Max. allowable torque (Continuous)	24 (15)	mNm
13 Max. allowable torque (Intermittent)	60 (30)	mNm

General specifications	SSG15-				
	29	49	71	94	198
12 Reduction ratio (absolute value)	29.07 : 1	48.58 : 1	71.35 : 1	93.68 : 1	198.06 : 1
13 Number of stage	3	4	4	4	5
14 Efficiency	73	66	66	66	59
15 Direction of rotation	≠	=	=	=	≠
16 Gearhead length: L1	9.6	11.6	11.6	11.6	13.6
17 Weight	8.9	10.3	10.3	10.3	11.5

Combination		Reduction ratio (Motor+gearhead total length)				
Type	Model name	29	49	71	94	198
Brushed coreless motor	CMS16-20..S	29.6	31.6	31.6	31.6	33.6
	CMS16-25..S	34.6	36.6	36.6	36.6	38.6
	CMS16-30..S	39.6	41.6	41.6	41.6	43.6
Brushless coreless motor	BMS16-20..S	29.6	31.6	31.6	31.6	33.6
	BMS16-30..S	39.6	41.6	41.6	41.6	43.6

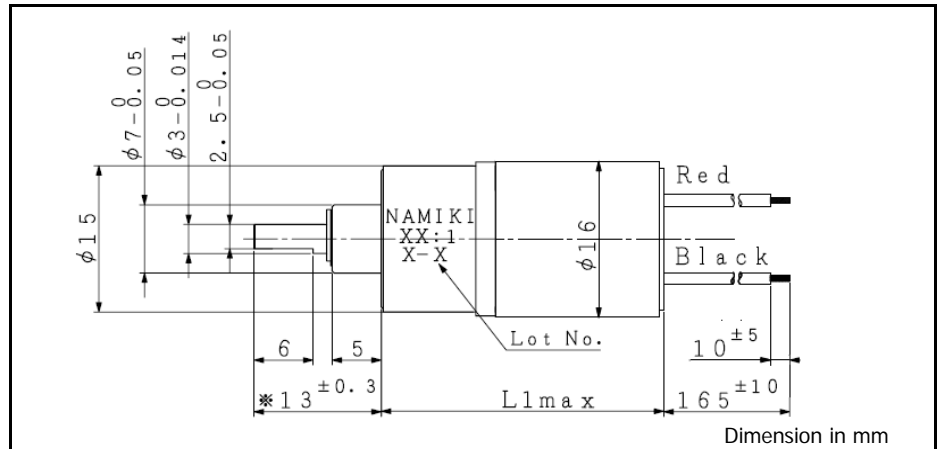
CMS16-20..S Geared motor (Spur gearhead)

Spur gearhead

SSG15

Coreless motor

CMS16-2004
CMS16-2009
CMS16-2037



General specification

	SSG15-	29	49	71	94	198	
1 Reduction ratio(absolute value)		29.07 : 1	48.58 : 1	71.35 : 1	93.68 : 1	198.06 : 1	
2 Number of stage		1	1	2	2	3	
3 Efficiency		85	85	72	72	61	%
4 Direction of rotation		=	=	=	=	=	
5 Geared motor length: L1		30.1	32.1	32.1	32.1	34.1	mm
6 Max. allowable torque (Continuous)		15			24		mNm
7 Max. allowable torque (Intermittent)		30			60		mNm

CMS16-2004S Rated voltage: 7.2V

Ordering number	CMS16-2004S	29	49	71	94	198	
8 Rated torque		15.00	23.84	24.00	24.00	24.00	mNm
9 Rated speed		419.87	250.40	174.94	135.02	65.16	rpm
10 No load speed		453	271	185	141	67	rpm
11 No load current		16	15	15	15	15	mA
12 Stall torque		204	308	452	593	1129	mNm
13 Stall current		1831	1831	1831	1831	1831	mA

CMS16-2009S Rated voltage: 12V

Ordering number	CMS16-2009S	29	49	71	94	198	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		475.12	283.32	197.53	152.26	73.34	rpm
10 No load speed		509	305	208	158	75	rpm
11 No load current		12	10	11	11	10	mA
12 Stall torque		225	339	497	653	1243	mNm
13 Stall current		1395	1395	1395	1395	1395	mA

CMS16-2037S Rated voltage: 24V

Ordering number	CMS16-2037S	29	49	71	94	198	
8 Rated torque		15.00	23.67	24.00	24.00	24.00	mNm
9 Rated speed		494.46	295.08	206.08	159.09	76.80	rpm
10 No load speed		534	320	218	166	78	rpm
11 No load current		6	5	6	6	5	mA
12 Stall torque		202	304	446	585	1114	mNm
13 Stall current		657	657	657	657	657	mA

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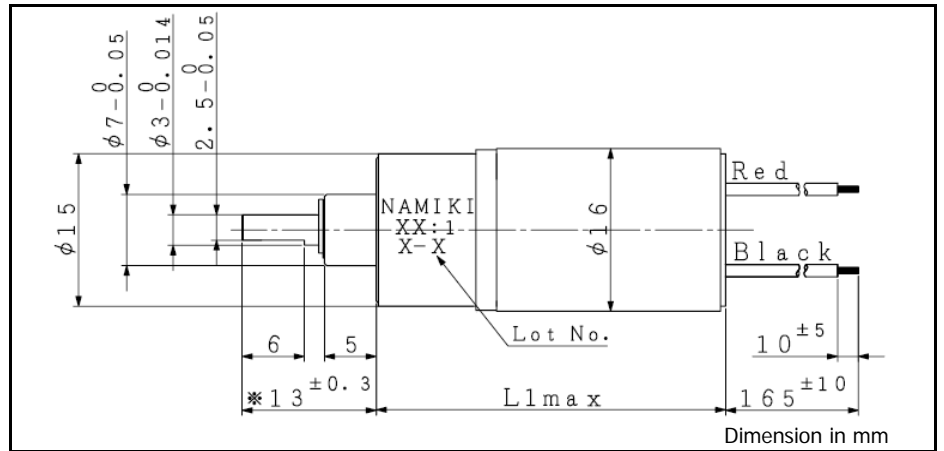
CMS16-25..S Geared motor (Spur gearhead)

Spur gearhead

SSG15

Coreless motor

CMS16-2505
CMS16-2511
CMS16-2549



General specification

	SSG15-	29	49	71	94	198	
1 Reduction ratio(absolute value)		29.07 : 1	48.58 : 1	71.35 : 1	93.68 : 1	198.06 : 1	
2 Number of stage		1	1	2	2	3	
3 Efficiency		85	85	72	72	61	%
4 Direction of rotation		=	=	=	=	=	
5 Geared motor length: L1		35.1	37.1	37.1	37.1	39.1	mm
6 Max. allowable torque (Continuous)		15			24		mNm
7 Max. allowable torque (Intermittent)		30			60		mNm

CMS16-2505S Rated voltage: 7.2V

Ordering number	CMS16-2505S	29	49	71	94	198	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		244.67	145.96	101.31	77.91	37.39	rpm
10 No load speed		259	155	105	80	38	rpm
11 No load current		9	8	8	8	8	mA
12 Stall torque		278	418	613	805	1532	mNm
13 Stall current		1411	1411	1411	1411	1411	mA

CMS16-2511S Rated voltage: 12V

Ordering number	CMS16-2511S	29	49	71	94	198	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		270.49	161.42	111.84	85.93	41.19	rpm
10 No load speed		285	170	116	88	42	rpm
11 No load current		6	5	6	6	5	mA
12 Stall torque		305	458	673	884	1682	mNm
13 Stall current		1049	1049	1049	1049	1049	mA

CMS16-2549S Rated voltage: 24V

Ordering number	CMS16-2549S	29	49	71	94	198	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		283.04	168.85	117.24	90.17	43.29	rpm
10 No load speed		300	179	122	93	44	rpm
11 No load current		3	3	3	3	3	mA
12 Stall torque		272	410	602	790	1504	mNm
13 Stall current		495	495	495	495	495	mA

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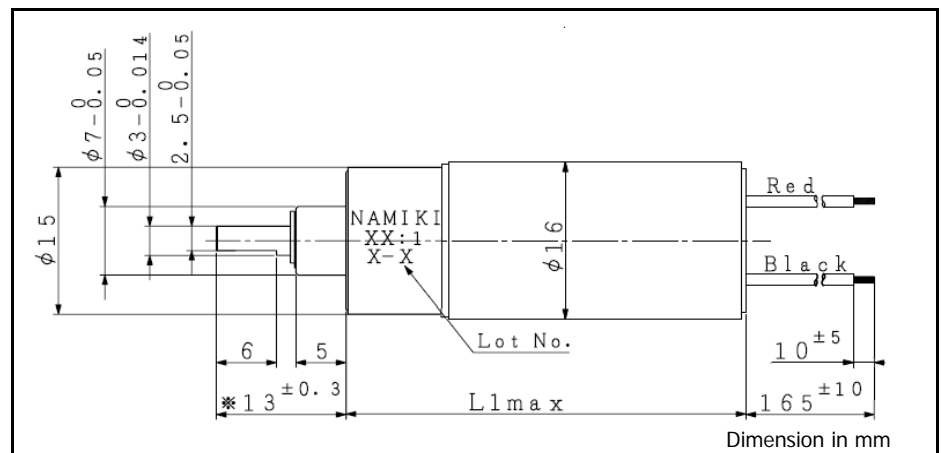
CMS16-30..S Geared motor (Spur gearhead)

Spur gearhead

SSG15

Coreless motor

CMS16-3002
CMS16-3005
CMS16-3016



General specification

	SSG15-	29	49	71	94	198	
1 Reduction ratio(absolute value)		29.07 : 1	48.58 : 1	71.35 : 1	93.68 : 1	198.06 : 1	
2 Number of stage		1	1	2	2	3	
3 Efficiency		85	85	72	72	61	%
4 Direction of rotation		=	=	=	=	=	
5 Geared motor length: L1		41	43	43	43	45	mm
6 Max. allowable torque (Continuous)		15			24		mNm
7 Max. allowable torque (Intermittent)		30			60		mNm

CMS16-3002S Rated voltage: 7.2V

Ordering number	CMS16-3002S	29	49	71	94	198	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		304.92	182.22	125.12	95.71	45.57	rpm
10 No load speed		313	187	127	97	46	rpm
11 No load current		10	9.1	9.3	9.3	9.1	mA
12 Stall torque		612	921	1353	1776	3380	mNm
13 Stall current		3736	3736	3736	3736	3736	mA

CMS16-3005S Rated voltage: 12V

Ordering number	CMS16-3005S	29	49	71	94	198	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		308.52	184.36	126.66	96.91	46.15	rpm
10 No load speed		317	190	129	98	47	rpm
11 No load current		6.3	5.7	5.8	5.8	5.7	mA
12 Stall torque		577	869	1276	1675	3187	mNm
13 Stall current		2202	2202	2202	2202	2202	mA

CMS16-3016S Rated voltage: 24V

Ordering number	CMS16-3016S	29	49	71	94	198	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		364.26	217.71	149.40	114.24	54.37	rpm
10 No load speed		373	223	152	116	55	rpm
11 No load current		3.8	3.4	3.5	3.5	3.4	mA
12 Stall torque		658	990	1453	1908	3631	mNm
13 Stall current		1475	1475	1475	1475	1475	mA

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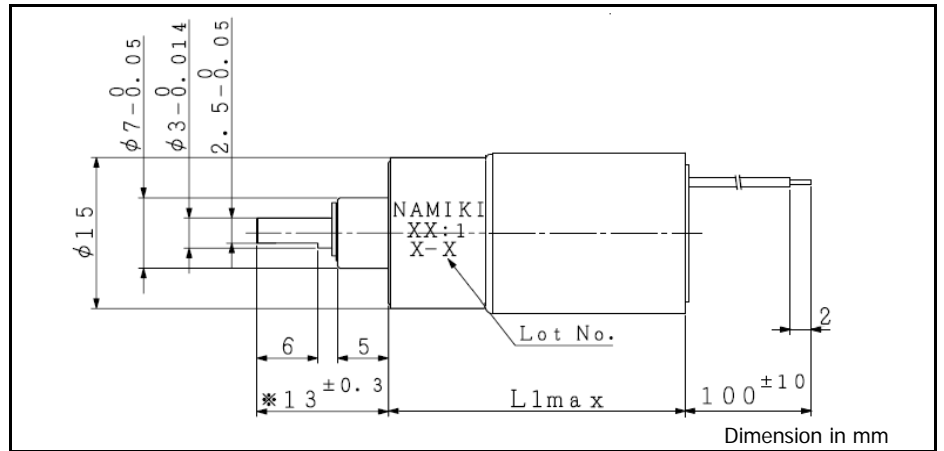
BMS16-20..S Geared motor (Spur gearhead)

Spur gearhead

SSG15

Brushless motor

BMS16-2001
BMS16-2004
BMS16-2013



General specification

	SSG15-	29	49	71	94	198	
1 Reduction ratio(absolute value)		29.07 : 1	48.58 : 1	71.35 : 1	93.68 : 1	198.06 : 1	
2 Number of stage		1	1	2	2	3	
3 Efficiency		85	85	72	72	61	%
4 Direction of rotation		=	=	=	=	=	
5 Geared motor length: L1		35.3	35.3	39.5	39.5	43.7	mm
6 Max. allowable torque (Continuous)		15			24		mNm
7 Max. allowable torque (Intermittent)		30			60		mNm

BMS16-2001S Rated voltage: 7.2V

Ordering number	BMS16-2001S	3.6	4.7	13	22	61	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		725.16	433.14	298.91	229.26	109.60	rpm
10 No load speed		755	452	308	234	111	rpm
11 No load current		103	99	101	100	99	mA
12 Stall torque		382	575	844	1108	2109	mNm
13 Stall current		5798	5798	5798	5798	5798	mA

BMS16-2004S Rated voltage: 12V

Ordering number	BMS16-2004S	3.6	4.7	13	22	61	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		730.72	436.39	301.56	231.46	110.77	rpm
10 No load speed		764	457	311	237	112	rpm
11 No load current		64	62	63	63	62	mA
12 Stall torque		348	523	768	1009	1920	mNm
13 Stall current		3306	3306	3306	3306	3306	mA

BMS16-2013S Rated voltage: 24V

Ordering number	BMS16-2013S	3.6	4.7	13	22	61	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		780.40	466.09	321.97	247.09	118.22	rpm
10 No load speed		815	488	332	253	120	rpm
11 No load current		34	33	34	34	33	mA
12 Stall torque		355	534	784	1030	1960	mNm
13 Stall current		1799	1799	1799	1799	1799	mA

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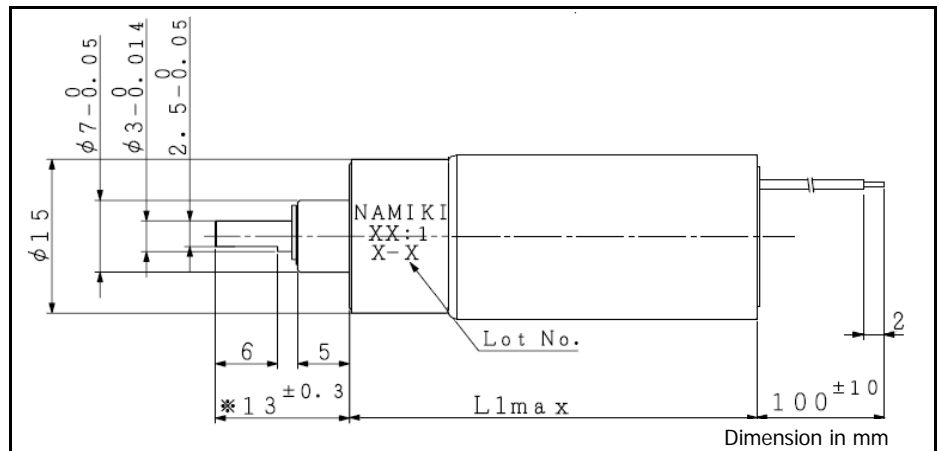
BMS16-30..S Geared motor (Spur gearhead)

Spur gearhead

SSG15

Brushless motor

BMS16-3001
BMS16-3002
BMS16-3009



General specification

	SSG15-	29	49	71	94	198	
1 Reduction ratio(absolute value)		29.07 : 1	48.58 : 1	71.35 : 1	93.68 : 1	198.06 : 1	
2 Number of stage		1	1	2	2	3	
3 Efficiency		85	85	72	72	61	%
4 Direction of rotation		=	=	=	=	=	
5 Geared motor length: L1		35.3	35.3	39.5	39.5	43.7	mm
6 Max. allowable torque (Continuous)		15			24		mNm
7 Max. allowable torque (Intermittent)		30			60		mNm

BMS16-3001S Rated voltage: 7.2V

Ordering number	BMS16-3001S	3.6	4.7	13	22	61	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		583.64	348.92	239.15	182.77	86.91	rpm
10 No load speed		595	356	243	185	87	rpm
11 No load current		79	76	78	77	77	mA
12 Stall torque		765	1151	1690	2219	4223	mNm
13 Stall current		8998	8998	8998	8998	8998	mA

BMS16-3002S Rated voltage: 12V

Ordering number	BMS16-3002S	3.6	4.7	13	22	61	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		599.07	358.14	245.50	187.64	89.23	rpm
10 No load speed		611	366	249	190	90	rpm
11 No load current		50	48	49	49	49	mA
12 Stall torque		750	1129	1658	2177	4142	mNm
13 Stall current		5591	5591	5591	5591	5591	mA

BMS16-3009S Rated voltage: 24V

Ordering number	BMS16-3009S	3.6	4.7	13	22	61	
8 Rated torque		15.00	24.00	24.00	24.00	24.00	mNm
9 Rated speed		597.55	357.19	245.00	187.32	89.12	rpm
10 No load speed		611	366	249	190	90	rpm
11 No load current		25	24	25	25	24	mA
12 Stall torque		690	1039	1525	2003	3812	mNm
13 Stall current		2574	2574	2574	2574	2574	mA

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