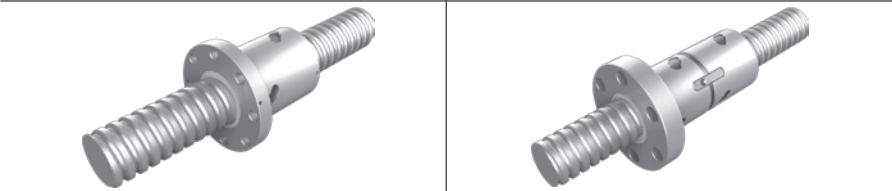


PRODUCT INFORMATION

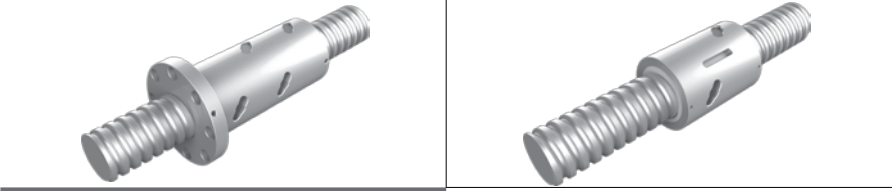
Precision Ground Series

Internal Ball Circulation Series

FSIC	A-129	FDIC	A-133
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FOIC	A-137	RSIC	A-139
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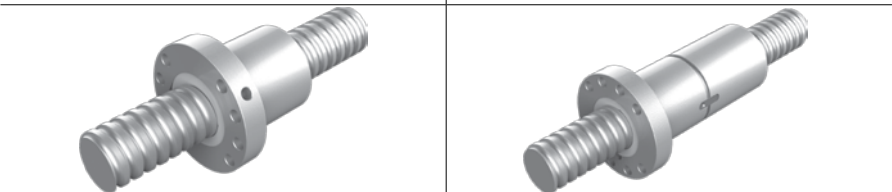


RDIC	A-141		
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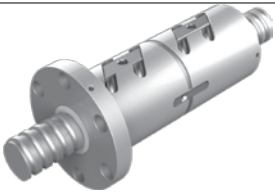
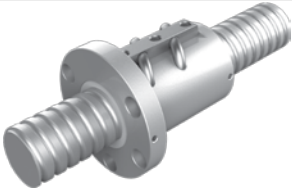
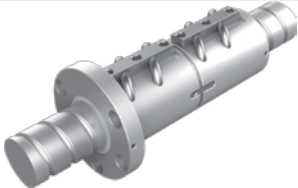
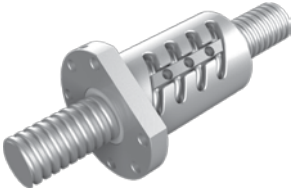


End Deflector Series

FSDC	A-144	FDDC	A-148
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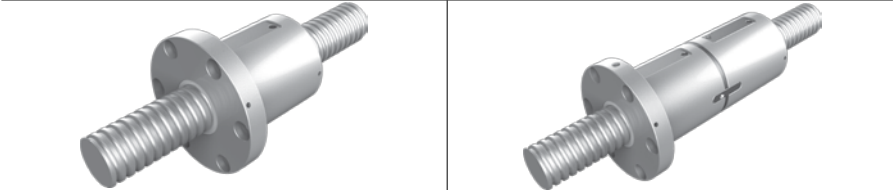
Precision Ground Series

External Ball Circulation Series			
FSWC	A-153	FDWC	A-158
			
F SVC	A-163	FDVC	A-167
			
FOWC	A-171		
			

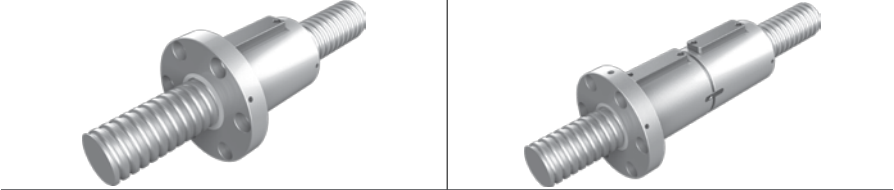
Precision Ground Series

High Lead Series

FSWE	A-174	FDWE	A-178
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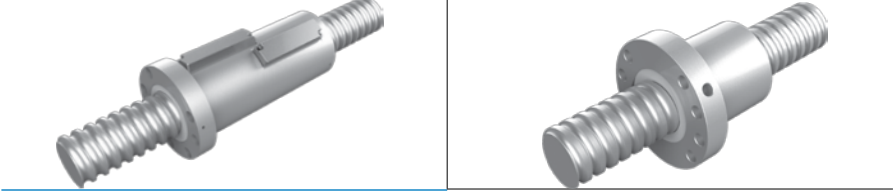


FSVE	A-182	FDVE	A-186
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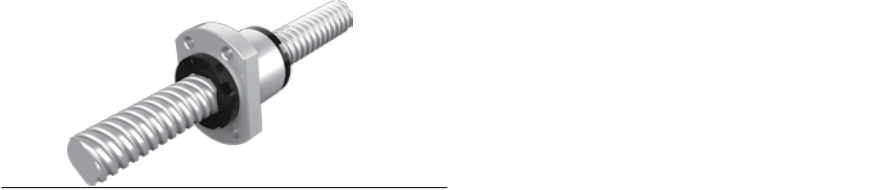
Heavy Load Series

FSVH	A-194	FSDH	A-196
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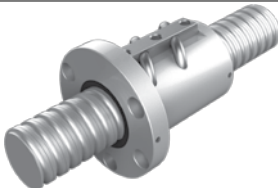
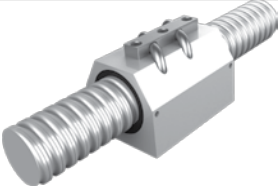


End Cap Series

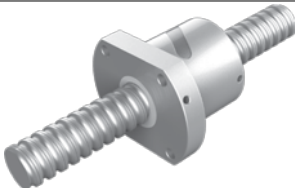
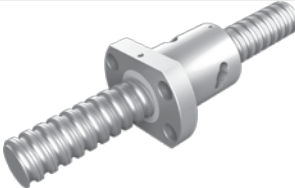
FSKC	A-197		
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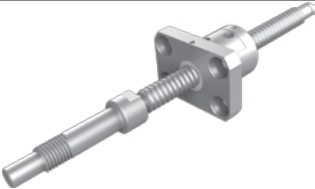
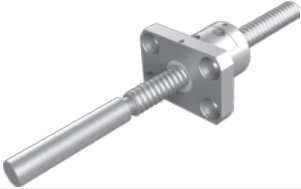
Rolled Series

External Ball Circulation Series			
FSWW	A-250	FSVW	A-251
			
RSVW	A-252	SSVW	A-256
			
End Cap Series			
FSKW	A-257		
			

Rolled Series

internal Ball Circulation Series			
FSBW	A-253	FSIW	A-254
			
FSIN	A-255	FSDW	A-258
			

Standard type series

Miniature Series		FA Series	
FSMC	A-198		A-260
			
Blank Shaft End Series			
PPR	A-280	PTR	A-282
			

PMI Precision Ground BallScrew

13.1 Internal Ball Circulation Nuts

Features:

The advantage of internal ball circulation nut is that the outer diameter is smaller than that of external ball circulation nut. Hence it is suitable for the machine with limit space for Ballscrew installation.

It is strictly required that there is at least one end of screw shaft with complete threads. Reference A47 Also the rest area next to this complete thread must be with smaller diameter than the nominal diameter of the screw shaft. Above are required for easy assembling the ballnut onto the screw shaft.

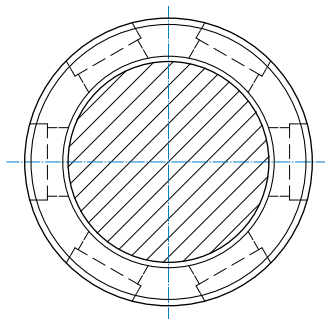
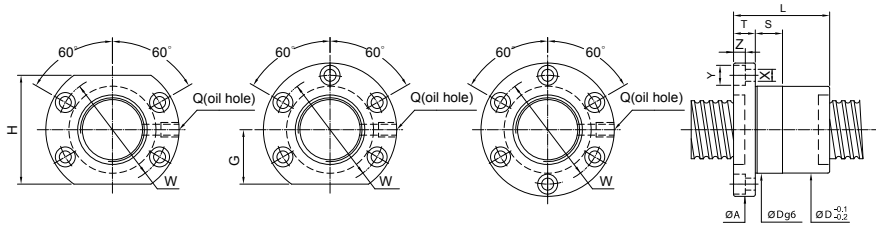


Fig. 13.1 Internal ball circulation's side view

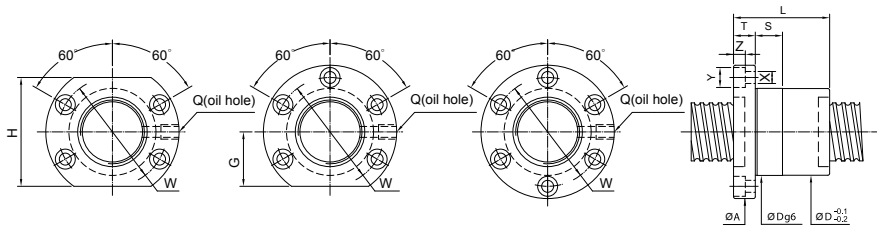
FSIC



Unit: mm

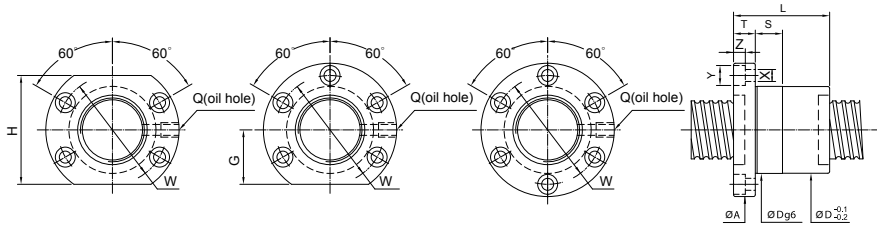
SCREW SIZE		BALL	EFFECTIVE	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT	BOLT				OIL HOLE	STIFFNESS
O.D.	LEAD	DIA.	TURNS	Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm	
14	3	2	3	260	460	26	37	46	10	36	-	-	10	4.5	8	4.5	M6×1P	13	
	4	2.381	3	420	805	26	42	46	10	36	20	40	10	4.5	8	4.5	M6×1P	14	
		2.778	4	840	1870		42												
16	5	3.175	3	720	1010	26	42	46	10	36	20	40	10	4.5	8	4.5	M6×1P	16	
	4	2.381	3	435	920	28	42	49	10	39	20	40	10	4.5	8	4.5	M6×1P	16	
		5	3.175	3	765		1240												42
20	6	3.175	4	980	1650	30	55	54	12	40	20	40	12	5.5	9.5	5.5	M6×1P	23	
	4	2.381	4	600	1530	34	44	60	12	48	22	44	12	5.5	9.5	5.5	M6×1P	25	
		5	3.175	4	860		1710												47
25	6	3.969	3	1080	2050	34	53	57	12	45	20	40	12	5.5	9.5	5.5	M6×1P	28	
	4	2.381	3	500	1440	40	40	63	12	51	22	44	15	5.5	9.5	5.5	M8×1P	23	
		5	3.175	4	1250		3070												53
28	6	3.175	3	1030	2630	43	50	68	12	55	26	52	15	6.6	11	6.5	M8×1P	28	
	10	3.175	4	1320	3510	45	77	73	12	60	30	60	15	6.6	11	6.5	M8×1P	37	
		4.762	4	2070	4270		85												68.5

FSIC



Unit: mm

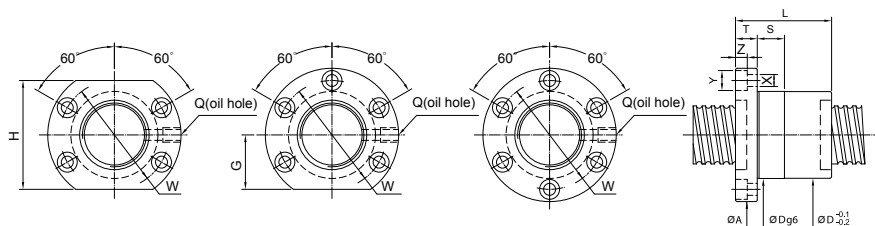
SCREW SIZE	BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT		BOLT			OIL HOLE	STIFFNESS
			Dynamic (1×10 ⁶ REV) Ca		Static Co		A	T	W	G	H	S	X	Y	Z	Q		
32	4	2.381	3	560	1840	43	40	68	15	55	26	52	15	6.6	11	6.5	M8×1P	28
			5	870	3070	43	49											45
	5	3.175	3	1095	3060	47		73.5	12	60	30	60	15	6.6	11	6.5	M8×1P	31
			4	1400	4080	48	53											41
	6	3.969	3	1500	3750	53		73.5	12	60	30	60	15	6.6	11	6.5	M8×1P	60
			4	1920	5000	48	61											43
	8	4.762	3	1820	4230	50	68	83	16	66	32	64	15	6.6	11	6.5	M8×1P	63
			4	2330	5640	77												43
	10	6.35	3	2605	5310	80		88	16	70	34	68	15	9	14	8.5	M8×1P	33
			4	3340	7080	54	90											45
	12	6.35	3	2605	5310	50	86	88	16	70	34	68	15	9	14	8.5	M8×1P	33
			4	3340	7080	50	86											45
36	5	3.175	4	1490	4690	52	56	88	16	70	34	68	15	9	14	8.5	M8×1P	46
	8	4.762	4	2530	6630	55	73	88	16	72	29	58	15	9	14	8.5	M8×1P	48
	10	6.35	3	2810	6210	58	78	98	18	77	36	72	20	11	17.5	11	M8×1P	37
40	5	3.175	4	1575	5290	56		88.5	16	72	29	58	15	9	14	8.5	M8×1P	49
			5	1910	6610	55	61											61
			6	2230	7940	65												73
	6	3.969	3	1660	4810	56		88.5	16	72	34	68	15	9	14	8.5	M8×1P	39
			4	2130	6410	55	65											51
			6	3020	9620	77												75
	8	4.762	3	2120	5720	64		93	16	76	36	72	20	9	14	8.5	M8×1P	40
			4	2720	7620	60	77											52
			6	3850	11430	94												77
	10	6.35	3	3010	7100	83		106	18	84	43	86	20	11	17.5	11	M8×1P	41
			4	3850	9470	64	93											53
			5	4670	11830	99												67
	12	6.35	3	3010	7100	82		110	18	85	45	90	20	11	17.5	11	M8×1P	41
			4	3850	9470	63	100											53
			5	4670	11830	107												67
40	7.144		3	4010	9250	70	93	110	18	85	45	90	20	11	17.5	11	M8×1P	43
			4	5130	12330	103												56



Unit: mm

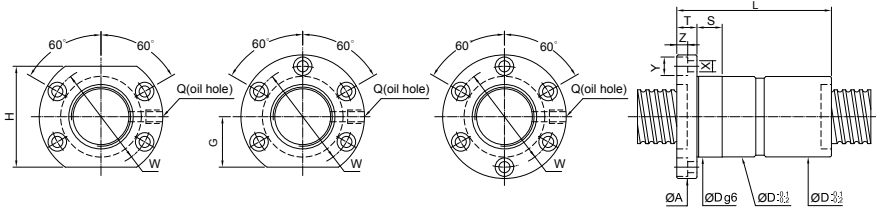
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT	BOLT			OIL HOLE	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁴ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm
45	8	3.175	4	1650	6030	61	72	92	16	75	36	72	15	9	14.5	9	M6×1P	54
	12	7.144	3	4160	10750	70	86	110	16	90	42	84	20	11	17.5	11	PT1/8"	48
			4	5330	14330		99											62
50	16	6.35	3	3220	8200	70	102	110	16	90	42	84	20	11	17.5	11	PT1/8"	45
			4	1730	6760		55											60
	5	3.175	5	2100	8450	66	61	98	16	82	36	72	20	9	14	8.5	PT1/8"	74
			6	2450	10140		65											86
			4	2380	8250		65											61
	6	3.969	5	2880	10310	66	64	98	16	82	36	72	20	9	14	8.5	PT1/8"	76
			6	3370	12380		77											90
			4	3010	9610		79											63
	8	4.762	5	3650	12010	70	84	113	18	90	42	84	20	11	17.5	11	PT1/8"	77
			6	4260	14420		96											92
			3	3430	9300		83											49
	10	6.35	4	4390	12400		93											65
			5	5320	15500	74	99	116	18	94	42	84	20	11	17.5	11	M8×1P	80
			6	6220	18600		114											95
		7.144	4	5520	16330		104											67
	12		5	6690	20410	75	117	121	22	97	47	94	20	14	20	13	PT1/8"	84
		7.938	3	4510	11150		99											50
			4	5770	14870	75	111	121	22	97	47	94	20	14	20	13	PT1/8"	60
	16	6.35	3	3430	9300	74	104	116	18	94	42	84	20	11	17.5	11	PT1/8"	49
	20	7.938	3	4510	11150	78	146	121	28	97	47	94	20	14	20	13	PT1/8"	50

FSIC



Unit: mm

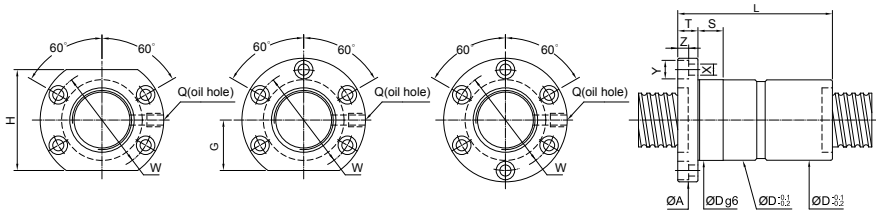
SCREW SIZE		BALL DIA.	EFFECTIVE	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT	BOLT				OIL HOLE	STIFFNESS
O.D.	LEAD		TURNS	Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm	
63	6	3.969	4 6	2610 3700	10550 15830	80	67 80	122	18	100	45	90	20	11	17.5	11	PT1/8"	73 107	
	8	4.762	4 6	3375 4780	12200 18300	82	80 96	124	18	102	46	92	20	11	17.5	11	PT1/8"	76 111	
	10	6.35	4 6	5020 7110	16450 24680	85	98 118	132	22	107	48	96	20	14	20	13	PT1/8"	79 116	
	12	7.938	4 6	6580 9320	19430 29150	90	111 136	136	22	112	52	104	20	14	20	13	PT1/8"	80 111	
	20	9.525	3 4	8490 10870	23610 31480	95	146 156	153	28	123	59	118	20	18	26	17.5	PT1/8"	79 89	
80	10	6.35	4 5 6	5510 6670 7810	21200 26500 31800	98	98 105 118	151	22	127	57	114	20	14	20	13	PT1/8"	95 118 140	
	12	7.938	4 6	7500 10620	25700 38550	110	111 136	156	22	132	59	118	20	14	20	13	PT1/8"	98 143	
	20	9.525	3 4	9770 12510	31700 42270	115	146 168	173	28	143	66	132	20	18	26	17.5	PT1/8"	97 127	
	100	10	6.35	3 4 5 6	4760 6090 7380 8630	20090 26790 33490 40190	125	84 95 104 115	171	22	147	67	134	25	14	20	13	PT1/8"	91 120 148 176
16		9.525	4 5 6	14440 17490 20460	54960 68700 82440	135	140 157 175	205	28	169	73	146	30	18	26	17.5	PT1/8"	140 173 205	
20		9.525	4 5 6	14440 17490 20460	54960 68700 82440	135	159 180 200	205	28	169	73	146	30	18	26	17.5	PT1/8"	140 173 205	



Unit: mm

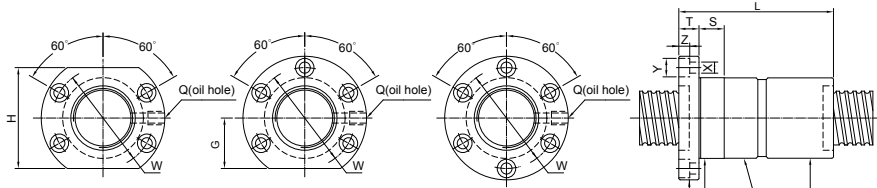
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT		BOLT			OIL HOLE	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q		
16	4	2.381	3	435	920	30	66	46.5	10	39	20	40	10	4.5	8	4.5	M6×1P	31	
	5	3.175	4	765	1240	30	80	49	10	39	20	40	10	4.5	8	4.5	M6×1P	35	
20	5	3.175	3	860	1710	34	82	57	12	45	20	40	12	5.5	9.5	5.5	M6×1P	43	
	6	3.969	4	1100	2280	34	92	57	12	45	20	40	12	5.5	9.5	5.5	M6×1P	56	
25	5	3.175	3	980	2300	40	82	63.5	12	51	22	44	15	5.5	9.5	5.5	M8×1P	51	
	6	3.969	4	1275	2740	40	93	63.5	12	51	22	44	15	5.5	9.5	5.5	M8×1P	52	
		3.175	3	980	2300	38	129	68	15	55	26	52	15	6.6	11	6.5	M8×1P	51	
		4.762	4	1620	3205	42	140	68.5	15	55	26	52	15	6.6	11	6.5	M8×1P	53	
32	5	3.175	3	1095	3060	48	82	73.5	12	60	30	60	15	6.6	11	6.5	M8×1P	63	
		4	1400	4080	92		82												
		6	1980	6120	118		118												
	6	3.969	3	1500	3750	48	93	109	73.5	12	60	30	60	15	6.6	11	6.5	M8×1P	65
		4	1920	5000	109		93												
		6	2720	7500	133		133												
	8	4.762	3	1820	4230	50	117	83	16	66	32	64	15	6.6	11	6.5	M8×1P	66	
		4	2330	5640	135		135												
	10	6.35	3	2605	5310	50	139	88.5	16	70	34	68	15	9	14	8.5	M8×1P	67	
		4	3340	7080	160		160												
12	6.35	3	2605	5310	50	153	88	16	70	34	68	15	9	14	8.5	M8×1P	67		
	5	4040	8850	203		203													
36	5	3.175	4	1490	4690	52	96	88	16	70	34	68	15	9	14	8.5	M8×1P	91	
	8	4.762	4	2530	6630	55	138	88	16	72	34	68	15	9	14	8.5	M8×1P	95	
	10	6.35	3	2810	6210	58	138	98	18	77	36	72	20	11	17.5	11	M8×1P	75	
			4	3600	8280		159											98	

FDIC



Unit: mm

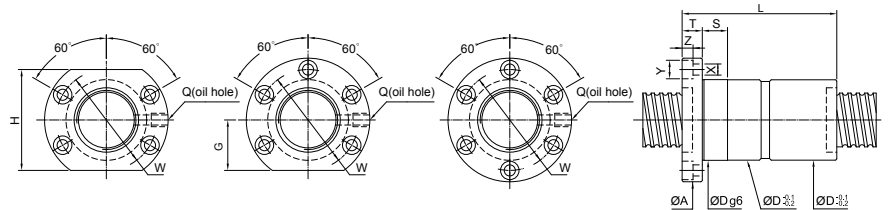
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(kgf)		NUT		FLANGE						FIT		BOLT			OIL HOLE	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q			
40	5	3.175	4	1575	5290	96														100
			5	1910	6610	55	111	88.5	16	72	29	58	15	9	14	8.5	M8×1P	124		
			6	2230	7940	122												147		
	6	3.969	3	1660	4810	97														77
			4	2130	6410	55	113	88.5	16	72	34	68	15	9	14	8.5	M8×1P	103		
			6	3020	9620	137												149		
	8	3.175	3	2120	5720	121														80
			4	2720	7620	60	134	93	16	76	36	72	20	9	14	8.5	M8×1P	105		
			6	3850	11430	172												154		
	10	6.35	3	3010	7100	142														82
			4	3850	9470	65	162	106	18	84	43	86	20	11	17.5	11	M8×1P	107		
			5	4670	11830	189												133		
	12	6.35	3	3010	7100	63	154	106	18	84	43	86	20	11	17.5	11	M8×1P	82		
			5	4670	11830													203	133	
			7.144	3	4010	9250	70	160	110	18	85	45	90	20	11	17.5	11	M8×1P	86	
	4	5130	12330	185	189	114														
45	8	4.762	4	1650	6030	61	136	92	16	75	36	72	15	9	14.5	9	M6×1P	109		
	12	7.144	3	4160	10750	70	158	110	16	90	45	90	20	11	17.5	11	PT1/8"	94		
		4	5330	14330	183													124		
	16	6.35	3	3220	8200	70	198	110	16	90	45	90	20	11	17.5	11	PT1/8"	90		



Unit: mm

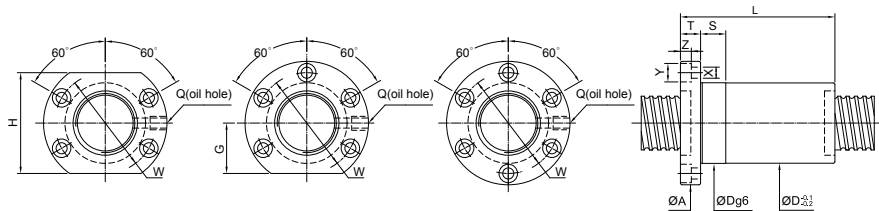
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT		BOLT				OIL HOLE	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q			
50	5	3.175	4	1730	6760	96														119
			5	2100	8450	66	111	98	16	82	36	72	20	9	14	8.5	PT1/8"	148		
			6	2450	10140	122													174	
	6	3.969	4	2380	8250	111														123
			5	2880	10310	66	122	98	16	82	36	72	20	9	14	8.5	PT1/8"	151		
			6	3370	12380	142														181
	8	4.762	4	3010	9610	136														125
			5	3650	12010	70	157	113	18	90	42	84	20	11	17.5	11.0	PT1/8"	155		
			6	4260	14420	174														185
	10	6.35	3	3430	9300	143														99
			4	4390	12400	162														129
			5	5320	15500	74	189	114	18	92	42	84	20	11	17.5	11	PT1/8"	161		
			6	6220	18600	205														191
	12	7.144	5	6680	20420	75	213	121	22	97	47	94	20	14	20	13	PT1/8"	166		
		7.938	3	4510	11150	75	171	121	22	97	47	94	20	14	20	13	PT1/8"	101		
	16	6.35	4	5770	14870	195														132
			3	3430	9300	74	201	114	18	92	42	84	20	11	17.5	11	PT1/8"	99		
	20	7.938	3	4510	11150	78	253	121	28	97	47	94	20	14	20	13	PT1/8"	101		

FDIC



Unit: mm

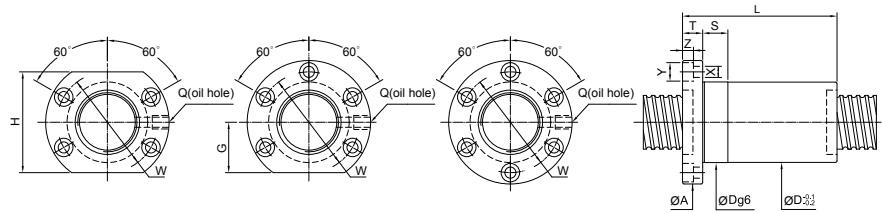
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD/(kgf)		NUT		FLANGE						FIT		BOLT				OIL HOLE	STIFFNESS kgf/um
O.D.	LEAD			Dynamic (1x10 ⁶ REV) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q				
63	6	3.969	4	2610	10550	80	120 144	122	18	100	45	90	20	11	17.5	11	PT1/8"	146			
			6	3700	15830													217			
	8	4.762	4	3375	12200	82	141 178	124	18	102	46	92	20	11	17.5	11	PT1/8"	151			
			6	4780	18300													222			
	10	6.35	4	5020	16450	85	166 209	132	22	107	48	96	20	14	20	13	PT1/8"	158			
			6	7110	24680													232			
12	7.938	4	6580	19430	90	195 248	136	22	112	52	104	20	14	20	13	PT1/8"	161				
		6	9320	29150													236				
20	9.525	3	8490	23610	95	255 296	153	28	123	59	118	20	18	26	17.5	PT1/8"	157				
		4	10870	31480													207				
80	10	6.35	4	5510	21200	105	166 209	151	22	127	57	114	20	14	20	13	PT1/8"	190			
			5	6670	26500													235			
			6	7810	31800													280			
	12	7.938	4	7500	25700	110	195 248	156	22	132	59	118	20	14	20	13	PT1/8"	196			
			6	10620	38550													288			
	20	9.525	3	9770	31700	115	254 297	173	28	143	66	132	20	18	26	17.5	PT1/8"	193			
4			12510	42270	254																
100	10	6.35	4	4760	20090	125	143 164 184 210	171	22	147	67	134	25	14	20	13	PT1/8"	173			
			5	6090	26790													228			
			6	7380	33490													281			
			4	8630	40190													334			
	16	9.525	4	14440	54960	135	252 318	205	28	169	73	146	30	18	26	17.5	PT1/8"	266			
			5	17490	68700													329			
20	9.525	4	20460	82440	135	299 381	205	28	169	73	146	30	18	26	17.5	PT1/8"	391				
		5	14440	54960													266				
20	9.525	4	17490	68700	135	299 381	205	28	169	73	146	30	18	26	17.5	PT1/8"	329				
		5	20460	82440													391				



Unit: mm

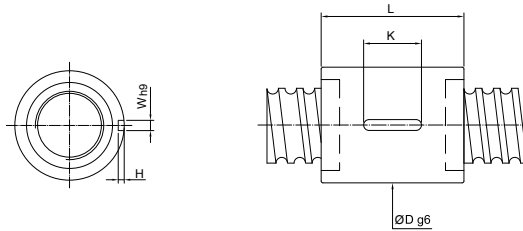
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT		BOLT				OIL HOLE	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm		
20	5	3.175	2×(2) 3×(2)	610 860	1140 1710	34	53 67	57	12	45	20	40	12	5.5	9.5	5.5	M6×1P	29 43		
	6	3.969	2×(2) 3×(2)	760 1080	1370 2050	34	61 77	57	12	45	20	40	12	5.5	9.5	5.5	M6×1P	29 50		
25	4	2.381	2×(2) 3×(2) 4×(2)	350 500 640	960 1440 1920	44 40 64	56	63	12	51	22	44	15	5.5	9.5	5.5	M8×1P	30 46 59		
			5	3.175	2×(2) 3×(2) 4×(2)	690 980 1250	1530 2300 3070	53 67 76	63.5	12	51	22	44	15	5.5	9.5	5.5	M8×1P	35 51 67	
					6	3.969	3×(2) 3×(2)	1275 1275	2740 2740	40 85	77 85	63.5	12	51	22	44	15	5.5	9.5	5.5
	10	4.762					2×(2) 3×(2)	1140 1610	2140 3210	42 102	88 102	69	15	55	26	52	15	6.6	11	6.5
			28	6	3.175	3×(2)	1030	2630	43	69	68	12	55	26	52	15	6.6	11	6.5	M8×1P
	10	3.175		2×(2)	730	1750	45	77	73	12	60	30	60	15	6.6	11	6.5	M8×1P	38	
	32	4	2.381	3×(2) 5×(2)	560 870	1840 3070	56 43	56 73	68	12	55	26	52	15	6.6	11	6.5	M8×1P	55 89	
				5	3.175	3×(2) 4×(2)	1095 1400	3060 4080	48 48	67 77	73.5	12	60	30	60	15	6.6	11	6.5	M8×1P
6		3.969	3×(2) 4×(2)			1500 1920	3750 5000	48 90	77 90	73.5	12	60	30	60	15	6.6	11	6.5	M8×1P	65 86
			8	4.762	3×(2) 4×(2)	1820 2330	4230 5640	50 112	95 112	83	16	66	32	64	15	6.6	11	6.5	M8×1P	66 86
10		6.35			3×(2)	2605	5310	50	120	88	16	70	34	68	15	9	14	8.5	M8×1P	67
12		6.35	3×(2)	2605	5310	50	124	88	16	70	34	68	15	9	14	8.5	M8×1P	67		

FOIC



Unit: mm

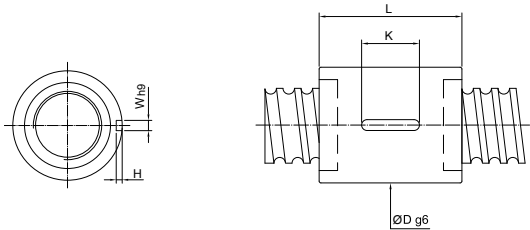
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(<i>kgf</i>)		NUT		FLANGE					FIT		BOLT			OIL HOLE	STIFFNESS <i>kgf/μm</i>
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q		
40	5	3.175	3×(2)	1230	3970	55	80	88.5	16	72	29	58	15	9	14	8.5	M8×1P	75	
			6×(2)	2230	7940													101	100
	6	3.969	4×(2)	2130	6410	55	93	88.5	16	72	34	68	15	9	14	8.5	M8×1P	103	
			6×(2)	3020	9620													118	149
	8	4.762	4×(2)	2720	7620	60	116	93	16	76	36	72	20	9	14	8.5	M8×1P	105	
				3×(2)	3010													7100	123
10	6.35	4×(2)	3850	9470	64	143	106	18	84	43	86	20	11	17.5	11	PT1/8"	107		
			4×(2)	3850													9470	63	160
50	5	3.175	3×(2)	1350	5070	66	80	98	16	82	36	72	20	9	14	8.5	PT1/8"	89	
			4×(2)	1730	6760													101	119
	6	3.969	4×(2)	2380	8250	66	93	98	16	82	36	72	20	9	14	8.5	PT1/8"	123	
			6×(2)	3370	12380													118	181
	8	4.762	4×(2)	3010	9610	70	119	113	18	90	42	84	20	11	17.5	11	PT1/8"	125	
				3×(2)	3430													9300	74
10	6.35	4×(2)	4390	12400	74	143	116	18	92	42	84	20	11	17.5	11	M8×1P	129		
			7.144	4×(2)													5530	16330	75
63	6	3.969	3×(2)	4510	11150	75	147	121	22	97	47	97	20	14	20	13	PT1/8"	101	
			4×(2)	5770	14870													164	132
	8	4.762	4×(2)	2610	10550	80	96	122	18	100	45	90	20	11	17.5	11	PT1/8"	146	
			6×(2)	3700	15830													121	151
	10	6.35	4×(2)	3375	12200	82	119	124	18	102	46	92	20	11	17.5	11	PT1/8"	151	
				5020	16450													85	147
12	7.938	3×(2)	5140	14570	90	147	136	22	112	52	104	20	14	20	13	PT1/8"	122		
			4×(2)	6580													19430	171	161
20	9.525	2×(2)	5990	15740	95	156	153	28	123	59	118	20	18	26	17.5	PT1/8"	107		
80	10	6.35	2×(2)	3360	13390	125	95	171	22	147	67	134	25	14	20	13	PT1/8"	118	
			3×(2)	4760	20090													115	173
	16	9.525	2×(2)	11280	41220	135	175	205	28	169	73	146	30	18	26	17.5	PT1/8"	201	
20	9.525	3×(2)	7960	27480	135	159	205	28	169	73	146	30	18	26	17.5	PT1/8"	137		



Unit: mm

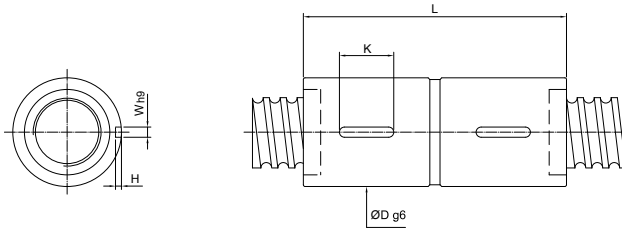
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(kgf)		NUT		KEYWAY			STIFFNESS kgf/μm
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	K	W	H	
16	5	3.175	3	765	1240	30	40	20	3	1.8	18
	6	3.175	4	860	1710	34	41	20	3	1.8	21
20	5	3.175	3	1100	2280	40	48	20	4	2.5	28
	6	3.969	4	1080	2050	40	46	20	4	2.5	22
25	5	3.175	3	1380	2730	48	56	25	5	3.0	28
	6	3.969	4	980	2300	40	41	20	4	2.5	26
32	5	3.175	3	1250	3070	40	48	20	4	2.5	33
	6	3.969	4	1275	2740	40	46	20	4	2.5	26
40	5	3.175	3	1630	3650	50	56	25	5	3.0	34
	6	3.969	4	1095	3060	48	41	20	4	2.5	31
40	5	3.175	3	1400	4080	48	48	20	4	2.5	41
	6	3.969	4	1980	6120	50	61	25	5	3.0	60
40	5	3.175	3	1500	3750	50	46	20	4	2.5	32
	6	3.969	4	1920	5000	50	56	25	5	3.0	43
40	5	3.175	3	2720	7500	50	70	32	6	3.5	63
	6	3.969	4	1820	4230	50	59	25	5	3.0	32
40	5	3.175	3	2330	5640	50	70	25	5	3.0	43
	6	3.969	4	2605	5310	50	68	25	6	3.5	33
40	5	3.175	3	3340	7080	50	79	32	6	3.5	45
	6	3.969	4	1575	5290	55	48	20	4	2.5	49
40	5	3.175	3	2230	7940	55	61	25	5	3.0	73
	6	3.969	4	2130	6410	55	56	25	5	3.0	51
40	5	3.175	3	3020	9620	60	70	32	6	3.5	75
	6	3.969	4	2720	7620	60	70	25	5	3.0	52
40	5	3.175	3	3850	11430	65	91	40	6	3.5	77
	6	3.969	4	3010	7100	65	68	25	6	3.5	41
40	5	3.175	3	3850	9470	65	79	32	6	3.5	53

RSIC



Unit: mm

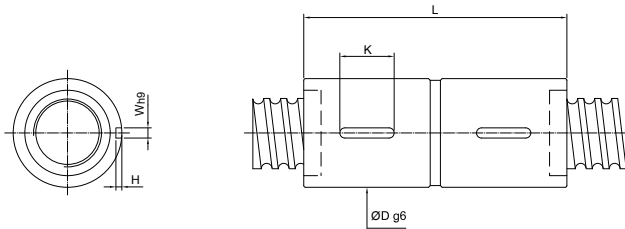
SCREW SIZE		BALL	EFFECTIVE	BASIC RATE LOAD(kgf)		NUT		KEYWAY			STIFFNESS
O.D.	LEAD	DIA.	TURNS	Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	K	W	H	kgf/μm
50	5	3.175	4	1730	6750	66	48	20	4	2.5	60
			6	2450	10130		61	25			86
	6	3.969	4	2380	8250	66	56	25	5	3.0	61
			6	3370	12380		70	32			90
	8	4.762	4	3010	9610	70	70	32	5	3.0	63
			6	4260	14420		91	32			92
	10	6.35	3	3430	9300	74	68	32	6	3.5	49
			4	4390	12400		79				65
	12	7.938	6	6220	18600	74	102	32	6	3.5	95
			4	4510	11150	75	82	40	6	3.5	50
63	6	3.969	4	2610	10550	80	56	25	6	3.5	73
			6	3700	15830		70	32			107
	8	4.762	4	3375	12200	82	70	32	6	3.5	76
			6	4780	18300		91	40			111
	10	6.35	4	5020	16450	85	79	32	8	4.0	79
			6	7110	24680		85	40			116
	12	7.938	4	6580	19430	90	95	40	8	4.0	80
			6	9320	29150		123	50			118
80	10	6.35	4	5510	21200	105	79	32	8	4.0	95
			6	7810	31800		102	40			140
	12	7.938	4	7500	25700	110	95	40	8	4.0	98
			6	10620	38550		123	50			143
	20	9.525	3	9770	31700	115	126	50	10	5.0	97
			4	12510	42270		149	63			127
100	10	6.35	3	4760	20090	125	72	50	10	5	91
			4	6090	26790		82				120
			5	7380	33490		94				148
			6	8630	40190		104				176
	16	9.525	4	14440	54960	135	128	63	10	5	140
			5	17490	68700		77				173
			6	20460	82440		162				205
	20	9.525	4	14440	54960	135	144	63	10	5	140
			5	17490	68700		164				173
			6	20460	82440		187				205



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(kgf)		NUT		KEYWAY			STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁵ REV.) Ca	Static Co	Dg6	L	K	W	H	kgf/μm
16	5	3.175	3	765	1240	28	75	20	3	1.8	35
			4	980	1650		85				47
20	5	3.175	3	860	1710	34	75	20	3	1.8	43
			4	1100	2280		85				56
	6	3.969	3	1080	2050	34	87	20	4	2.5	43
			4	1380	2730		103				56
25	5	3.175	3	980	2300	40	75	20	4	2.5	51
			4	1250	3070		85				67
	6	3.969	3	1275	2740	40	87	20	4	2.5	52
			4	1630	3650		103				68
32	5	3.175	3	1095	3060	48	75	20	4	2.5	63
			4	1400	4080		85				82
			6	1980	6120		105				122
	6	3.969	3	1500	3750	50	87	20	5	3.0	65
			4	1920	5000		103				86
			6	2720	7500		127				125
	8	4.762	3	1820	4230	50	109	25	5	3.0	66
			4	2330	5640		127				86
	10	6.35	3	2605	5310	50	135	25	6	3.5	67
			4	3340	7080		155				89
40	5	3.175	4	1575	5290	55	85	20	4	2.5	100
			6	2230	7940		105				147
	6	3.969	4	2130	6410	55	103	25	5	3.0	103
			6	3020	9620		127				149
	8	4.762	4	2720	7620	60	127	25	5	3.0	105
			6	3850	11430		161				154
	10	6.35	3	3010	7100	65	135	25	6	3.5	82
			4	3850	9470		155				107

RDIC



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(kgf)		NUT		KEYWAY			STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	K	W	H	kgf/μm
50	5	3.175	4	1730	6750	66	85	20	4	2.5	119
			6	2450	10130		105	25			174
	6	3.969	4	2380	8250	66	103	25	5	3.0	123
			6	3370	12380		127	32			181
	8	4.762	4	3010	9610	70	127	32	5	3.0	125
			6	4260	14420		161	40			185
	10	6.35	3	3430	9300	74	135	32	6	3.5	99
			4	4390	12400		155	32			129
	12	7.938	6	6220	18600	75	197	40	6	3.5	191
			3	4510	11150		161	40			101
63	6	3.969	4	2610	10550	80	106	25	6	3.5	146
			6	3700	15830		130	32			217
	8	4.762	4	3375	12200	82	131	32	6	3.5	151
			6	4780	18300		165	40			222
	10	6.35	4	5020	16450	85	160	32	8	4.0	158
			6	7110	24680		202	40			232
	12	7.938	4	6580	19430	90	185	40	8	4.0	161
			6	9320	29150		238	50			236
	10	6.35	4	5510	21200	105	160	32	8	4.0	190
			6	7810	31800		202	40			280
80	12	7.938	4	7500	25700	110	185	40	8	4.0	196
			6	10620	38550		238	50			288
	20	9.525	3	9770	31700	115	245	50	10	5.0	193
			4	12510	42270		289	63			254
	10	6.35	3	4760	20090	125	132		10	5	173
			4	6090	26790		164				228
	16	9.525	5	7380	33490	135	174		10	5	281
			6	8630	40190		204				334
	20	9.525	4	14440	54960	135	240		10	5	266
			5	17490	68700		274	63			329
100	20	9.525	6	20460	82440	135	306		10	5	391
			4	14440	54960		284				266
	20	9.525	5	17490	68700	135	324	63	10	5	329
			6	20460	82440		366				391

PMI Precision Ground BallScrew

13.2 End Deflector Series

Features

It is important for a high-lead ballscrew to be with characteristics of high rigidity, low noise and thermal control.

PMI takes its patented design and treatments to achieve the following characteristics:

High DN Value

Max. DN Value: 220,000

Low Noise

The average and accurate ball circle diameter (BCD) through whole threads make the ballscrews to obtain the stable and consistent drag torque as well as to reduce the noise.

The audio frequency is low and downy due to the designed of plastic circulation system.

Space Saving

The ballnut diameter reduces 20%~25% substantially and the length of nut is shorter.

The total space shall be reduced to approximately 50% consequently.

Circulation

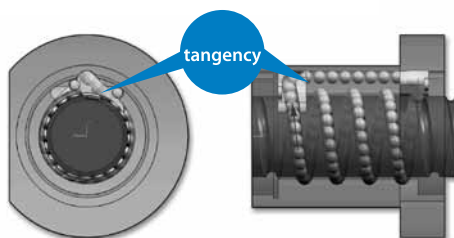
The specially designed pathway of the Recirculation System makes a contact with lead angle and also with BCD in the same tangency, improving its smoothness effectively.

Applications

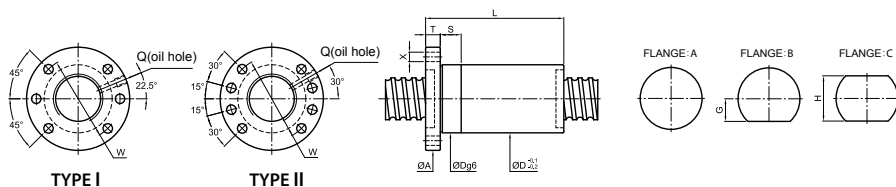
CNC Machinery / Precision Machinery / High Speed Machinery /

Semi-Conductor Equipment / Medical equipment

Diameter
Reduces
20%~25%



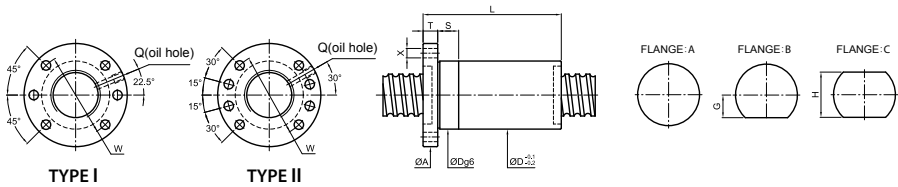
FSDC



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	MODIFIED LOAD CAPACITY(kgf)		NUT		FLANGE						FIT	OIL HOLE	BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Cam	Static Coam	Dg6	L	A	T	W	G	H	TYPE	S	Q	X	kgf/μm
12	4	2.381	3	610	1190	24	28	44	10	34	16	32	I	10	M6×1P	4.5	20
	5		3	610	1190		32										20
	10		3	590	1160		45										20
	20		2	390	770		54										14
14	4	2.381	3	680	1430	26	28	46	10	36	16	32	I	10	M6×1P	4.5	23
	5	3.175	3	820	1520	28	32	49	10	39	16	32	I	10	M6×1P	4.5	25
15	5	3.175	3	850	1640	29	35	51	10	39	16	38	I	10	M6×1P	5.5	26
	10		3	840	1610		47										26
	20		2	560	1050		58										18
16	5	3.175	3	890	1760	29	41	51	10	39	16	38	I	10	M6×1P	5.5	27
	10		3	870	1740		50										27
	16		2	600	1150		51										19
20	4	2.381	3	780	2000	32	28	54	12	42	19	38	I	12	M6×1P	5.5	29
	5	3.175	4	1300	3030	36	40	62	12	49	19	38	I	12	M6×1P	6.6	43
	10		3	990	2220		47										33
	20		2	670	1450		56										23
	6		3	1540	3310		38										34
	8	3.969	3	1540	3300	37	45	62	12	49	19	38	I	12	M6×1P	6.6	34
10	4.762	4	2560	5530	40	62	62	12	51	24	48	I	15	M6×1P	6.6	47	
25	4	2.381	3	870	2560	36	28	62	12	49	19	38	I	12	M6×1P	6.6	34
	5	3.175	4	1440	3840	40	41	62	12	51	24	48	I	15	M6×1P	6.6	50
	10		3	1100	2810		50										38
	15		4	1410	3780		81										50
	20		2	750	1840		60										26
	25	2	730	1810	71										26		
	6	3.969	4	2250	5710	43	45	64	12	51	22	44	I	15	M6×1P	6.6	53
	12		4	2240	5660		70										53
	25		2	1160	2720		70										28
	8		4	2880	6890		55										55
	10	4.762	4	2880	6870	45	63	65	15	54	25.5	51	I	15	M6×1P	6.6	55
	16		4	2830	6790		85										55
	20		2	1470	3180		61										29
	10		6.35	5	5050		11500										51

Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

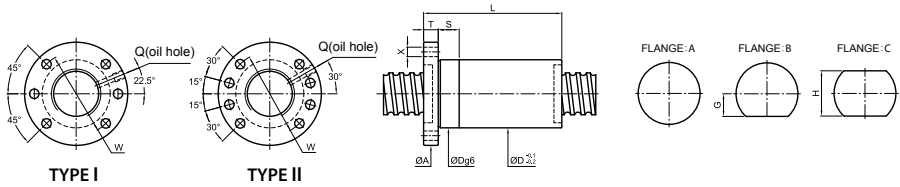


Unit: mm

SCREW SIZE	BALL DIA.	EFFECTIVE TURNS	MODIFIED LOAD CAPACITY(kgf)		NUT		FLANGE						FIT	OIL HOLE	BOLT	STIFFNESS	
			Dynamic (1×10 ⁴ REV.) Cam	Static Coam	Dg6	L	A	T	W	G	H	TYPE					S
28	5	3.175	5	1850	5460	43	48	65	12	51	24	48	I	15	M8×1P	6.6	67
	6	3.969	5	2880	7980	46	52	66	12	50	26	52	I	15	M8×1P	6.6	70
	8		3	2350	5720		46										46
	10	4.762	3	2340	5710	48	52	74	12	60	30	60	I	15	M8×1P	6.6	46
	16		5	3680	9690		102										73
	10	6.35	5	5280	12530	54	78	87	16	72	34.5	69	I	15	M8×1P	9	77
	12		5	5270	12500		88										77
32	5	3.175	4	1610	4970	50	41	87	16	72	34.5	69	I	15	M8×1P	9	61
	6		5	3050	9140		52										77
	10	3.969	4	2550	7500	53	62	87	16	72	34.5	69	I	15	M8×1P	9	63
	32		2	1300	3540		84										40
	8		5	3900	10930		67										80
	10		5	3890	10910		77										80
	12	4.762	5	3890	10890	53	87	87	16	72	34.5	69	I	15	M8×1P	9	80
	15		5	3860	10850		116										80
	20		2	1700	4230		70										34
	32		2	1640	4120		84										34
	10		5	4900	13360		78										84
	12	5.556	5	4890	13340	55	88	87	16	72	34.5	69	I	15	M8×1P	9	84
	16		5	4860	13280		107										79
	20		3	3140	8110		87										53
	10		5	5720	14490		78										85
	12	6.35	5	5710	14470	57	88	87	16	72	34.5	69	I	15	M8×1P	9	85
	16		4	4520	11100		92										69
	20		3	3530	8340		88										54

Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

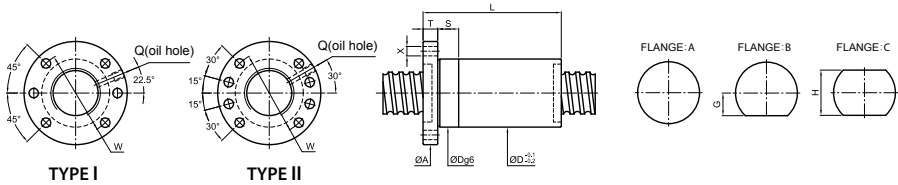
FSDC



Unit: mm

SCREW SIZE	BALL DIA.	EFFECTIVE TURNS	MODIFIED LOAD CAPACITY (kgf)		NUT		FLANGE						FIT	OIL HOLE	BOLT	STIFFNESS
			Dynamic (1×10 ⁶ REV.) Cam	Static Coam	Dg6	L	A	T	W	G	H	TYPE	S	Q	X	kgf/μm
36	8	4.762	5	4170 12580	56	63	80	11	68	34	68	I	15	M8×1P	9	86
	10		5	6050 16460		78										93
	12		5	6080 16430		88										93
	16	6.35	5	6050 16360	61	109	91	18	76	34	68	II	15	M8×1P	9	93
	20		4	4910 12890		109										76
	36		2	2570 6250		95										41
38	10		5	6260 17740		80										97
	12	6.35	5	6260 17410	63	88	93	18	78	35	70	II	20	M8×1P	9	97
	16		5	6220 17350		109										97
	40		3	3830 10220		142										71
40	5	3.175	4	1760 6260	58	42	91	18	76	34	68	II	15	M8×1P	9	71
	6	3.969	5	3420 11810	58	52	91	18	76	34	68	II	15	M8×1P	9	92
	8	4.762	4	3610 11260	60	56	91	18	76	34	68	II	15	M8×1P	9	77
	10		5	6430 18440		78										101
	12		5	6420 18410		88										101
	15	6.35	5	6380 18350		103	95	18	80	36	72	II	20	M8×1P	9	101
	16		5	6390 18330		108										101
	20		4	5190 14450												82
	40		2	2700 6950		110	98	18	83	37	74	II	20	M8×1P	11	43
	12	7.144	5	7530 20800	70	90	98	18	83	37	74	II	20	M8×1P	11	103
	16		5	7500 20730												103

Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

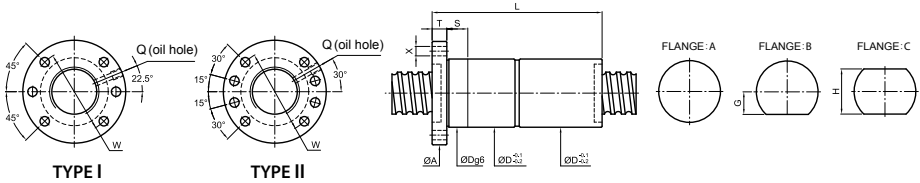


Unit: mm

SCREW SIZE		BALL	EFFECTIVE	MODIFIED LOAD CAPACITY(kgf)		NUT		FLANGE						FIT	OIL HOLE	BOLT	STIFFNESS
O.D.	LEAD	DIA.	TURNS	Dynamic (1×10 ⁴ REV.) Cam	Static Coam	Dg6	L	A	T	W	G	H	TYPE	S	Q	X	kgf/μm
45	8	4.762	4	3770	12580	66	55	98	18	83	37	74	II	20	M8×1P	11	84
	10		5	6910	21330		78										110
	12	6.35	5	6910	21310	70	89	105	18	88	40	80	II	20	M8×1P	11	110
	16		5	6880	21250		111										110
	12	7.144	5	7930	23300		88	105	18	88	40	80	II	20	M8×1P	11	113
	20		4	6440	18340	73	110										91
50	5	3.175	5	2360	9950	70	48	105	18	88	40	80	II	20	M8×1P	11	105
	8	4.762	5	4780	17550	70	64	105	18	88	40	80	II	20	M8×1P	11	109
	10		5	7160	23320		78										119
	12	6.35	5	7150	23300		90	118	18	100	46	92	II	20	M8×1P	11	119
	16		5	7120	23250	75	109									119	
	20		3	4460	13520		95										74
55	20	7.938	4	7810	22680	80	114	121	18	104	50	100	II	25	M8×1P	11	101
	12	6.35	5	7340	25280	80	96	118	18	100	46	92	II	20	M8×1P	11	128
63	10	6.35	5	7800	29210	88	84	135	22	115	50	110	II	20	M8×1P	11	141
	16	9.525	5	13640	43620	102	116	147	20	127	56	112	II	25	M8×1P	14	167
80	20		5	15350	56760		143										196
	25	9.525	4	12530	44860	118	146	165	25	145	65	130	II	25	M8×1P	14	159
	30		3	9610	32980		134										121

Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

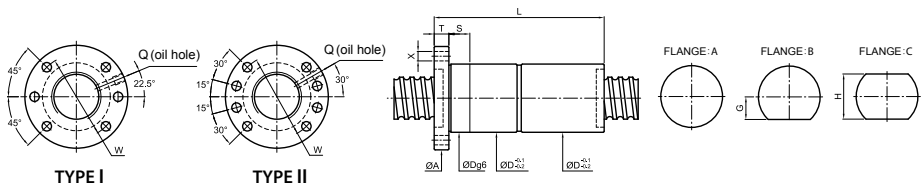
FDDC



Unit: mm

SCREW SIZE	BALL DIA.	EFFECTIVE TURNS	MODIFIED LOAD CAPACITY(kgf)		NUT		FLANGE						FIT	OIL HOLE	BOLT	STIFFNESS	
			Dynamic (1×10 ⁶ REV.) Cam	Static Coam	Dg6	L	A	T	W	G	H	TYPE	S	Q	X	kgf/μm	
20	4	2.381	3	780	2000	32	61	54	12	42	19	38	I	12	M6×1P	5.5	44
	5		4	1300	3030		80										65
	10	3.175	3	990	2220	36	97	62	12	49	19	38	I	12	M6×1P	6.6	50
	20		2	670	1450		116										33
	6	3.969	3	1540	3310		81	62	12	49	19	38	I	12	M6×1P	6.6	51
	8		3	1540	3300	37	93										51
	10	4.762	4	2560	5530	40	107	62	12	51	24	48	I	15	M6×1P	6.6	70
	4	2.381	3	870	2560	36	60	62	12	49	19	38	I	12	M6×1P	6.6	53
25	5		4	1440	3840		81										77
	10		3	1100	2810		100										58
	15	3.175	4	1410	3780	40	166	62	12	51	24	48	I	15	M6×1P	6.6	77
	20		2	750	1840		120										39
	25		2	730	1810		146										39
	6		4	2250	5710		87										80
	12	3.969	4	2240	5660	43	142	64	12	51	22	44	I	15	M6×1P	6.6	80
	25		2	1160	2720		145										41
	8		4	2880	6890		111										83
	10		4	2880	6870		128										83
	16	4.762	4	2830	6790	45	173	65	15	54	25.5	51	I	15	M6×1P	6.6	83
	20		2	1470	3180		122										42
	10	6.35	5	5050	11500	51	153	84	16	67	32	64	I	15	M6×1P	9	108

Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

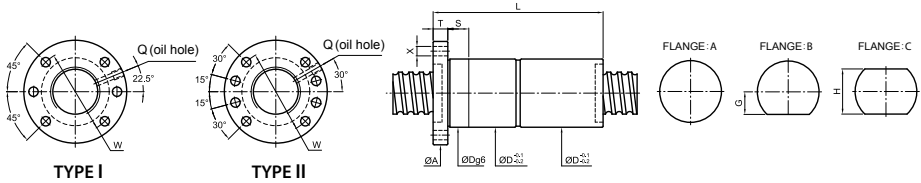


Unit: mm

SCREW SIZE	LEAD	BALL DIA.	EFFECTIVE TURNS	MODIFIED LOAD CAPACITY(kgf)		NUT		FLANGE						FIT S	OIL HOLE Q	BOLT X	STIFFNESS
				Dynamic (1×10 ⁶ REV.) Cam	Static Coam	Dg6	L	A	T	W	G	H	TYPE				
28	5	3.175	5	1850	5460	43	93	65	12	51	24	48	I		M8×1P	6.6	104
	6	3.969	5	2880	7980	46	106	66	12	50	26	52	I		M8×1P	6.6	108
	8		3	2350	5720		94										69
	10	4.762	3	2340	5710	48	102	74	12	60	30	60	I	15	M8×1P	6.6	69
	16		5	3680	9690		206										112
	10	6.35	5	5280	12530	54	158	87	16	72	34.5	69	I		M8×1P	9	118
	12		5	5270	12500		172										118
32	5	3.175	4	1610	4970	50	81	87	16	72	34.5	69	I	15	M8×1P	9	93
	6		5	3050	9140		106										120
	10	3.969	4	2550	7500	53	126	87	16	72	34.5	69	I	15	M8×1P	9	96
	32		2	1300	3540		172										60
	8		5	3900	10930		132										124
	10		5	3890	10910		147										124
	12	4.762	5	3890	10890	53	171	87	16	72	34.5	69	I	15	M8×1P	9	124
	15		5	3860	10850		221										124
	20		2	1700	4230		140										51
	32		2	1640	4120		186										51
	10		5	4900	13360		153										129
	12	5.556	5	4890	13340	55	172	87	16	72	34.5	69	I	15	M8×1P	9	129
	16		5	4860	13280		211										121
	20		3	3140	8110		177										79
	10		5	5720	14490		153										131
	12	6.35	5	5710	14470	57	172	87	16	72	34.5	69	I	15	M8×1P	9	131
	16		4	4520	11100		180										105
	20		3	3530	8340		178										80

Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

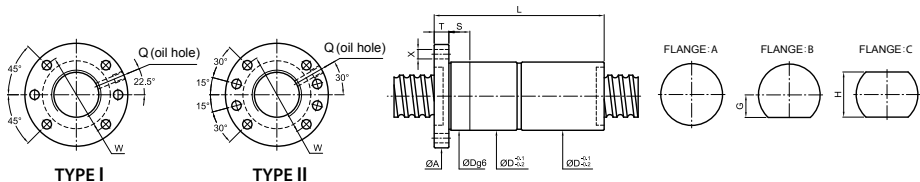
FDDC



Unit: mm

SCREW SIZE	BALL DIA.	EFFECTIVE TURNS	MODIFIED LOAD CAPACITY (kgf)		NUT		FLANGE						FIT	OIL HOLE	BOLT	STIFFNESS
O.D.	LEAD		Dynamic (1×10 ⁶ REV.) Cam	Static Coam	Dg6	L	A	T	W	G	H	TYPE	S	Q	X	kgf/μm
36	8	4.762	5	4170 12580	56	127	80	11	68	34	68	II	15	M8×1P	9	133
	10		5	6050 16460		153										142
	12		5	6080 16430		172										142
	16	6.35	5	6050 16360	61	213	91	18	76	34	68	II	15	M8×1P	9	142
	20		4	4910 12890		217										115
	36		2	2570 6250		194										59
38	10		5	6260 17740		155										149
	12	6.35	5	6260 17410		172										149
	16		5	6220 17350	63	213	93	18	78	35	70	II	20	M8×1P	9	149
	40		3	3830 10220		282										106
40	5	3.175	4	1760 6260	58	87	91	18	76	34	68	II	15	M8×1P	9	111
	6	3.969	5	3420 11810	58	108	91	18	76	34	68	II	15	M8×1P	9	142
	8	4.762	4	3610 11260	60	112	91	18	76	34	68	II	15	M8×1P	9	118
	10		5	6430 18440		158										155
	12		5	6420 18410		172										155
	15		5	6380 18350		226	95	18	80	36	72	II	20	M8×1P	9	155
	16	6.35	5	6390 18330	65	212										155
	20		4	5190 14450		220										125
	40		2	2700 6950		210	98	18	83	37	74	II	20	M8×1P	11	64
	12	7.144	5	7530 20800		174	98	18	83	37	74	II	20	M8×1P	11	158
	16		5	7500 20730	70	212										158

Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	MODIFIED LOAD CAPACITY(kgf)		NUT		FLANGE						FIT S	OIL HOLE Q	BOLT X	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Cam	Static Coam	Dg6	L	A	T	W	G	H	TYPE				
45	8	4.762	4	3770	12580	66	114	98	18	83	37	74	II	20	M8×1P	11	130
	10		5	6910	21330		158										170
	12	6.35	5	6910	21310	70	171	105	18	88	40	80	II	20	M8×1P	11	170
	16		5	6880	21250		215										170
	12	7.144	5	7930	23300	73	168	105	18	88	40	80	II	20	M8×1P	11	173
	20		4	6440	18340		220										139
50	5	3.175	5	2360	9950	70	98	105	18	88	40	80	II	20	M8×1P	11	164
	8	4.762	5	4780	17550	70	128	105	18	88	40	80	II	20	M8×1P	11	169
	10		5	7160	23320		158										185
	12	6.35	5	7150	23300	75	174	118	18	100	46	92	II	20	M8×1P	11	185
	16		5	7120	23250		215										185
	20		3	4460	13520	75	185	118	18	100	46	92	II	20	M8×1P	11	112
55	20	7.938	4	7810	22680	80	220	121		104							154
	12	6.35	5	7340	25280	80	174	118	18	100	46	92	II	20	M8×1P	11	198
63	10	6.35	5	7800	29210	88	164	135	22	115	50	100	II	20	M8×1P	14	220
	16	9.525	5	13640	43620	102	228	147	20	127	56	112		25			257
80	20		5	15350	56760		283										305
	25	9.525	4	12530	44860	118	296	165	25	145	65	130	II	25	M8×1P	14	245
	30		3	9610	32980		254										185

Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

13.3 External Ball Circulation Nuts

Features:

- Lower noise due to longer ball circulation paths.
- Offers smoother ball circulation.
- Offers better solution and quality for high lead or large diameter ballscrews.

Type:

There are two types of Ballnut of the external circulation Ballscrews. They are "immersion type" of Fig.13.2 and "extrusive type" of Fig.13.3. The "immersion type" means the ball circulation tubes are inside the circular surface of Ballnut as shown on specifications of this catalogue are of "immersion type".

In some cases, as per designs on customer's drawings, there are smaller outer diameters ballnuts required. Then the ball circulation tubes shall extrude out of Ballnut circular surface.

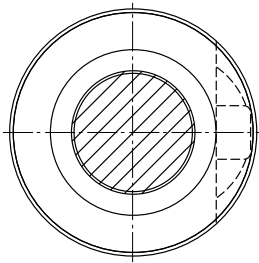


Fig.13.2 Immersion type

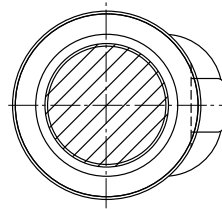
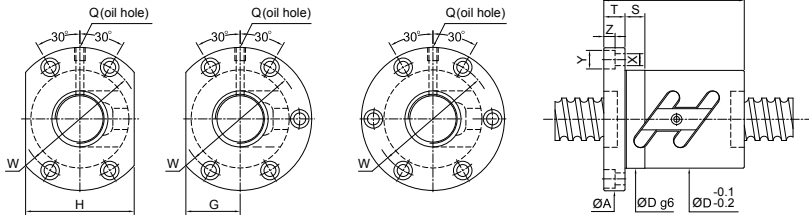


Fig.13.3 Extrusive type

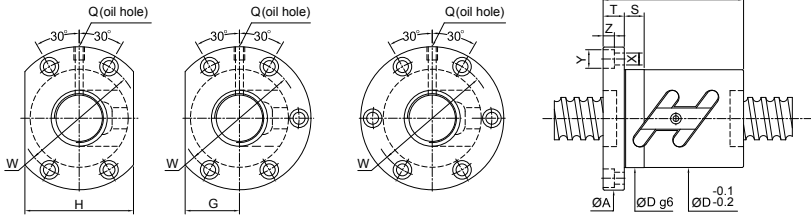
FSWC



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT		OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm		
10	3	2.000	2.5×1	250	430		37												9	
	4	2.000	2.5×1	250	430	26	40	46	10	36	14	28	10	4.5	8	4.5	M6×1P	9		
	5	2.000	2.5×1	250	430		42											9		
12	4	2.381	2.5×1	380	640		40											12		
	5	2.381	2.5×1	380	640	30	42	50	10	40	16	32	10	4.5	8	4.5	M6×1P	12		
14	4	2.381	2.5×1	410	750		40											14		
	5	3.175	2.5×1	675	1145	34	42	57	11	45	17	34	10	4.5	9.5	5.5	M6×1P	15		
15	4	2.381	2.5×1	420	800		40											14		
	5	3.175	2.5×1	680	1210	34	42	57	10	45	17	34	10	5.5	9.5	5.5	M6×1P	15		
	10	3.175	2.5×1	680	1210		55											16		
16	4	2.381	1.5×2	490	1010		44											18		
			2.5×1	430	850	34	41	57	11	45	17	34	10	5.5	9.5	5.5	M6×1P	15		
			3.5×1	560	1180		42											21		
	5	3.175	1.5×2	805	1525		45											19		
			2.5×1	690	1270		41											16		
			2.5×2	1250	2540	40	56	63	11	51	21	42	15	5.5	9.5	5.5	M6×1P	31		
			3.5×1	920	1780		46											22		
	6	3.175	1.5×2	805	1525		52											19		
			2.5×1	690	1270	40	44	63	11	51	21	42	15	5.5	9.5	5.5	M6×1P	16		
			3.5×1	920	1780		52											22		
10	3.175	2.5×1	690	1270	40	56	63	11	51	21	42	15	5.5	9.5	5.5	M6×1P	16			
20	4	2.381	1.5×2	530	1270		44											21		
			2.5×1	480	1060		40						10					18		
			2.5×2	820	2120		50	63.5	11	51	21	42	15	5.5	9.5	5.5	M6×1P	35		
			3.5×1	600	1480		43						10					25		
	5	3.175	1.5×2	965	2070		45						15					24		
			2.5×1	830	1730		42						10					20		
			2.5×2	1510	3460	44	56	67	11	55	26	52	15	5.5	9.5	5.5	M6×1P	39		
			3.5×1	1110	2420		46						15					26		
	6	3.969	1.5×2	1285	2545		56						15					24		
			2.5×1	1100	2120	48	49	71	11	59	27	54	10	5.5	9.5	5.5	M6×1P	20		
			3.5×1	1470	2970		56						15					28		
	8	3.969	1.5×2	1285	2545		61						15					24		
			2.5×1	1100	2120	48	54	75	13	61	27	54	15	6.6	11	6.5	M6×1P	20		
			3.5×1	1470	2970		62						15					28		

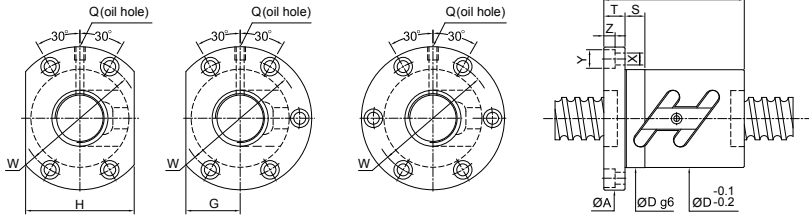
FSWC



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT	OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H		X	Y	Z	Q		
25	4	2.381	1.5×2	600	1630	44												M6×1P	26
			2.5×1	510	1355	40													22
			2.5×2	930	2710	49	69	11	57	26	52	15		5.5	9.5	5.5			42
			3.5×1	680	1900	42													30
	5	3.175	1.5×2	1065	2575	45												M6×1P	28
			2.5×1	910	2150	41													24
			2.5×2	1650	4300	56	73	11	61	28	56	15		5.5	9.5	5.5			46
			3.5×1	1210	3010	46													33
	6	3.969	1.5×2	1420	3215	56												M6×1P	29
			2.5×1	1210	2680	49													24
			2.5×2	2190	5360	62	76	11	64	29	58	15		5.5	9.5	5.5			47
			3.5×1	1610	3750	56													34
	8	4.762	1.5×2	1820	3840	61												M6×1P	30
			2.5×1	1560	3200	61	85	13	71	32	64	15		6.6	11	6.5			25
			3.5×1	2080	4480	66													35
28	10	4.762	1.5×2	1820	3840	71												M6×1P	30
			2.5×1	1560	3200	65	85	15	71	32	64	15		6.6	11	6.5			25
			3.5×1	2080	4480	75													35
			2.5×1	1210	2680	53	60	76	11	64	32	64	15	5.5	9.5	5.5		M6×1P	24
	5	3.175	1.5×2	1110	2960	46												M8×1P	31
			2.5×1	950	2470	42													26
			2.5×2	1720	4940	56	83	12	69	31	62	15		6.6	11	6.5			50
			3.5×1	1270	3460	47													36
	6	3.969	1.5×2	1480	3605	57												M8×1P	32
			2.5×1	1270	3000	50													26
			2.5×2	2300	6000	63	83	12	69	31	62	15		6.6	11	6.5			51
			3.5×1	1690	4200	57													37
	8	4.762	1.5×2	1935	4325	65												M8×1P	33
			2.5×1	1650	3600	63	93	15	76	36	72	15		9	14	8.5			28
			3.5×1	2200	5040	68													38
	10	4.762	1.5×2	1935	4325	74												M8×1P	33
			2.5×1	1650	3600	67	93	15	76	36	72	15		9	14	8.5			28
			3.5×1	2200	5040	77													38

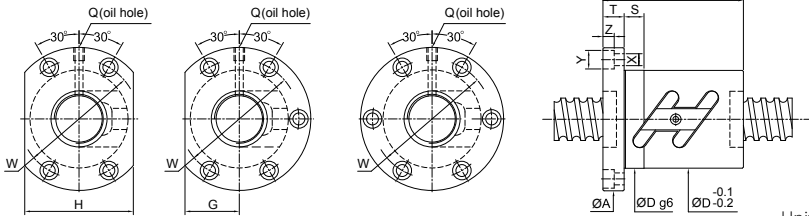
FSWC



Unit: mm

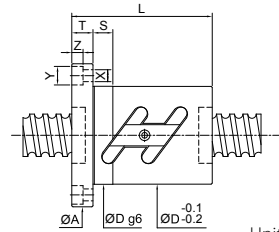
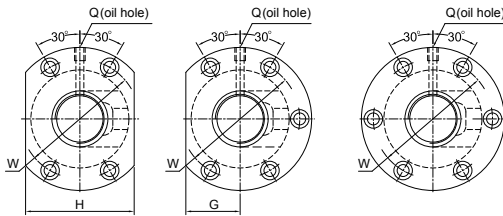
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE				FIT		OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q		
32	4	2.381	2.5×1	565	1750	54	40	81	12	67	32	64	15	6.6	11	6.5	M6×1P		26
			2.5×2	1020	3500		50												
	5	3.175	1.5×2	1180	3410	58	47	85	12	71	32	64	15	6.6	11	6.5	M8×1P		34
			2.5×1	1010	2840		43												
			2.5×2	1830	5680		57												
			2.5×3	2590	8520		72												
	6	3.969	3.5×1	1350	3980	62	47	88	12	75	34	68	15	6.6	11	6.5	M8×1P		29
			1.5×2	1560	4135		57												
			2.5×1	1330	3450		45												
			2.5×2	2410	6900		63												
	8	4.762	3.5×1	1770	4830	66	57	98	15	82	38	76	15	9	14	8.5	M8×1P		35
			1.5×2	2010	5010		64												
			2.5×1	1720	4180		63												
			2.5×2	3120	8360		80												
	10	6.35	3.5×1	2300	5850	74	68	108	15	90	41	82	15	9	14	8.5	M8×1P		30
			1.5×2	3000	6530		78												
			2.5×1	2570	5440		68												
			2.5×2	4660	10880		97												
	12	6.35	3.5×1	3430	7620	74	78	108	18	90	41	82	15	9	14	8.5	M8×1P		59
			1.5×2	3000	6530		88												
			2.5×1	2570	5440		77												
			2.5×2	4660	10880		110												
36	5	3.175	3.5×1	3430	7620	65	91	98	15	82	38	76	15	9	14	8.5	M8×1P		42
			1.5×2	1240	3850		50												
			2.5×2	1920	6420		60												
			2.5×3	2720	9630		75												
	6	3.969	3.5×1	1410	4490	65	50	98	15	82	38	76	15	9	14	8.5	M8×1P		62
			2.5×2	2600	7900		66												
			2.5×3	3680	11850		84												
	10	6.35	1.5×2	3180	7410	75	81	118	18	98	45	90	15	11	17.5	11	M8×1P		44
			2.5×1	2720	6180		71												
			2.5×2	4930	12360		103												
			3.5×1	3630	8650		81												
	12	6.35	2.5×1	2720	6180	75	77	118	18	98	45	90	15	11	17.5	11	M8×1P		35
			2.5×2	4930	12360		110												
			3.5×1	3630	8650		91												

FSWC



Unit: mm

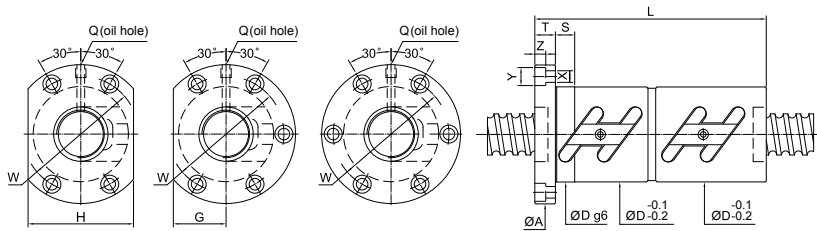
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT	OIL HOLE			BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm
40	5	3.175	1.5×2	1280	4275		50											41
			2.5×1	1090	3560		48											34
			2.5×2	1980	7120	67	60	101	15	83	39	78	15	9	14	8.5	M8×1P	66
			2.5×3	2800	10680		75											98
			3.5×1	1450	4980		50											47
	6	3.969	1.5×2	1750	5300		60											42
			2.5×1	1500	4420		53											35
			2.5×2	2720	8840	70	66	104	15	86	40	80	15	9	14	8.5	PT1/8"	69
			2.5×3	3850	13260		84											101
			3.5×1	2000	6190		60											49
	8	4.762	1.5×2	2220	6320		64											43
			2.5×1	1900	5270		63											36
			2.5×2	3450	10540	74	83	108	15	90	41	82	15	9	14	8.5	PT1/8"	70
			3.5×1	2540	7380		68											50
			2.5×2	3370	8335		81											45
	10	6.35	2.5×1	2880	6950		71											35
			2.5×2	5220	13900	82	103	124	18	102	47	94	20	11	17.5	11	PT1/8"	74
			3.5×1	3840	9730		81											52
			2.5×1	2880	6950		77											38
	12	6.35	2.5×2	5220	13900	86	112	128	18	106	48	96	20	11	17.5	11	PT1/8"	74
			3.5×1	3840	9730		91											52
			2.5×2	5480	15700		101											81
	45	6.35	2.5×3	7760	23550	88	131	132	18	110	50	100	20	11	17.5	11	PT1/8"	119
			2.5×1	3550	8950		84											43
			2.5×2	6440	17900	90	112	132	18	110	50	100	20	11	17.5	11	PT1/8"	82
			2.5×3	9120	26850		148											121



Unit: mm

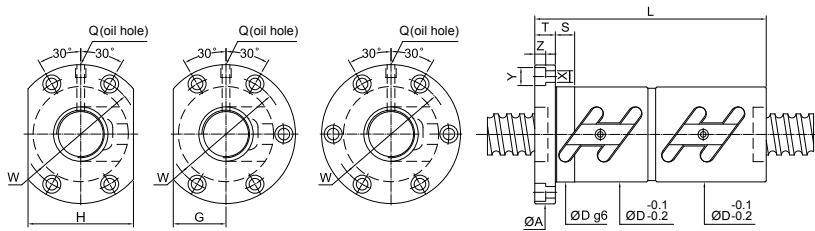
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT		OIL HOLE			BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q		
50	5	3.175	1.5×2	1410	5305	50													49
			1.5×3	2000	7960	60													72
			2.5×2	2190	8840	80	114	15	96	43	86	15	9	14	8.5	PT1/8"	80		
			3.5×1	1610	6190	50												57	
	6	3.969	1.5×2	1920	6600	60													50
			2.5×2	2980	11000	67													82
			2.5×3	4220	16500	84	118	15	100	45	90	15	9	14	8.5	PT1/8"	121		
			3.5×1	2190	7700	60												58	
	8	4.762	1.5×2	2515	7810	68													52
			2.5×2	3900	13020	86													85
			2.5×3	5520	19530	87	128	18	107	49	98	20	11	17.5	11	PT1/8"	125		
			3.5×1	2870	9110	71												60	
	10	6.35	1.5×2	3725	10450	81													54
			2.5×1	3190	8710	71													45
			2.5×2	5790	17420	93	101	135	18	113	51	102	20	11	17.5	11	PT1/8"	88	
			2.5×3	8200	26130	131												130	
	12	7.144	3.5×1	4260	12190	81													63
			2.5×1	3700	10050	88													46
			2.5×2	6710	20100	100	146	22	122	55	110	20	14	20	13	PT1/8"	89		
	55	10	6.35	2.5×2	6005	19540	101												95
				2.5×3	8510	29310	102	144	18	122	54	108	20	11	17.5	11	PT1/8"	140	
	63	10	6.35	2.5×1	3510	11200	75												55
				2.5×2	6370	22400	108	105	154	22	130	58	116	20	14	20	13	PT1/8"	106
2.5×3				9020	33600	135												156	
12		7.938	2.5×1	4770	13780	88												59	
			2.5×2	8650	27560	115	124	161	22	137	61	122	20	14	20	13	PT1/8"	113	
			2.5×3	12250	41340	160												167	
80	10	6.35	2.5×2	7130	28500	105												129	
			2.5×3	10100	42750	130	176	22	152	66	132	20	14	20	13	PT1/8"	190		
	12	7.938	2.5×2	9710	35560	124												137	
			2.5×3	13760	53340	136	182	22	158	68	136	20	14	20	13	PT1/8"	202		
	16	9.525	2.5×2	16450	59280	160													170
			2.5×3	23300	88920	143	204	28	172	77	154	30	18	26	17.5	PT1/8"	250		

FDWC



Unit: mm

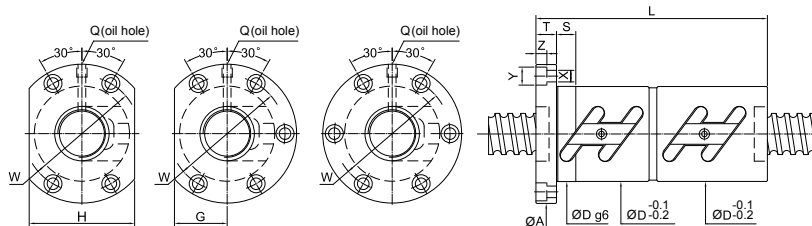
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT	OIL HOLE			BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm
16	4	2.381	1.5×2	490	1010	81												36
			2.5×1	430	850	34	70	57	11	45	17	34	15	5.5	9.5	5.5	M6×1P	30
			3.5×1	560	1180	78												42
	5	3.175	1.5×2	805	1525	90												39
			2.5×1	690	1270	77		63	11	51	20	40	15	5.5	9.5	5.5	M6×1P	33
			2.5×2	1250	2540	105												63
			3.5×1	920	1780	88												45
	6	3.175	1.5×2	805	1525	90												39
			2.5×1	690	1270	40	80	63	11	51	20	40	15	5.5	9.5	5.5	M6×1P	33
			3.5×1	920	1780	90												45
20	4	2.381	1.5×2	530	1270	83												42
			2.5×1	480	1060	67		63	11	51	24	48	15	5.5	9.5	5.5	M6×1P	36
			2.5×2	820	2120	89												69
			3.5×1	600	1480	75												49
	5	3.175	1.5×2	965	2070	99												47
			2.5×1	830	1730	76		67	11	55	26	52	15	5.5	9.5	5.5	M6×1P	40
			2.5×2	1510	3460	105												77
			3.5×1	1110	2420	80												55
	6	3.969	1.5×2	1285	2545	98												49
			2.5×1	1100	2120	48	82	71	11	59	27	54	15	5.5	9.5	5.5	M6×1P	41
			3.5×1	1470	2970	93												45
	8	3.969	1.5×2	1285	2545	108												49
			2.5×2	1100	2120	48	102	75	13	61	28	56	15	6.6	11	6.5	M6×1P	41
			3.5×1	1470	2970	110												56



Unit: mm

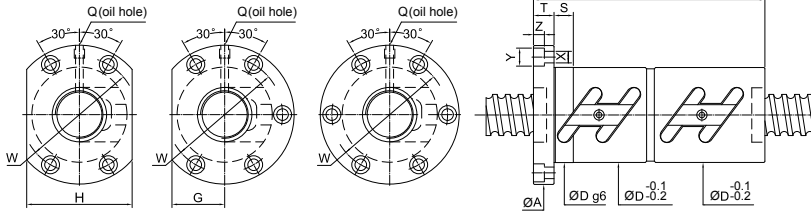
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE				FIT		OIL HOLE			BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	
25	4	2.381	1.5×2	600	1630	83												51
			2.5×1	510	1355	67												43
			2.5×2	930	2710	91												84
			3.5×1	680	1900	75												59
	5	3.175	1.5×2	1065	2575	80												57
			2.5×1	910	2150	77												48
			2.5×2	1650	4300	105												92
			3.5×1	1210	3010	86												65
	6	3.969	1.5×2	1420	3215	91												58
			2.5×1	1210	2680	82												49
			2.5×2	2190	5360	116												94
			3.5×1	1610	3750	93												67
	8	4.762	1.5×2	1820	3840	111												60
			2.5×1	1560	3200	95												50
			3.5×1	2080	4480	111												69
	10	4.762	1.5×2	1820	3840	134												60
			2.5×1	1560	3200	117												50
			3.5×1	2080	4480	138												69
28	5	3.175	1.5×2	1110	2960	86												62
			2.5×1	950	2470	78												52
			2.5×2	1720	4940	106												101
			3.5×1	1270	3460	86												72
	6	3.969	1.5×2	1480	3605	98												63
			2.5×1	1270	3000	89												53
			2.5×2	2300	6000	117												103
			3.5×1	1690	4200	94												73
	8	4.762	1.5×2	1935	4325	113												66
			2.5×1	1650	3600	97												55
			3.5×1	2200	5040	113												76
	10	4.762	1.5×2	1935	4325	134												66
			2.5×1	1635	3600	117												55
			3.5×1	2200	5040	138												76

FDWC



Unit: mm

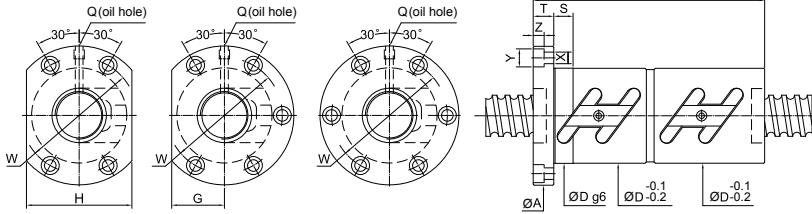
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(<i>kgf</i>)		NUT		FLANGE						FIT	OIL HOLE				BOLT	STIFFNESS <i>kgf/μm</i>
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q			
32	4	2.381	2.5×1	565	1750	54	68	81	12	67	32	64	15	6.6	11	6.5	M6×1P	52		
			2.5×2	1020	3500	90	101													
	5	3.175	1.5×2	1180	3410	82	85	12	71	32	64	15	6.6	11	6.5	M8×1P	69			
			2.5×1	1010	2840	78											58			
			2.5×2	1830	5680	58											105	164		
			2.5×3	2590	8520	136											80			
	6	3.969	3.5×1	1350	3980	82	88	12	75	34	68	15	6.6	11	6.5	M8×1P	70			
			1.5×2	1560	4135	100											59			
			2.5×1	1330	3450	62											87	114		
			2.5×2	2410	6900	123											81			
	8	4.762	3.5×1	1770	4830	100	98	15	82	38	76	15	9	14	8.5	M8×1P	76			
			1.5×2	2010	5010	66											113	64		
			2.5×1	1720	4180	106											123			
			2.5×2	3120	8360	152											88			
	10	6.35	3.5×1	2300	5850	113	108	15	90	41	82	15	9	14	8.5	M8×1P	76			
			1.5×2	3000	6530	74											118	64		
			2.5×1	2570	5440	118											123			
			2.5×2	4660	10880	177											88			
12	6.35	3.5×1	3430	7620	148	108	18	90	41	82	15	9	14	8.5	M8×1P	76				
		1.5×2	3000	6530	74											137	64			
		2.5×1	2570	5440	137											124				
		2.5×2	4660	10880	208											88				
36	5	3.175	3.5×1	3430	7620	160	98	15	82	38	76	15	9	14	8.5	M8×1P	75			
			1.5×2	1240	3850	65											110	123		
			2.5×2	1920	6420	110											139	181		
			2.5×3	2720	9630	139											87			
	6	3.969	3.5×1	1410	4490	90	98	15	82	38	76	15	9	14	8.5	M8×1P	126			
			2.5×2	2600	7900	65											123	187		
			2.5×3	3680	11850	159											129			
			2.5×2	3265	9450	70											153	83		
	8	4.762	2.5×2	3180	7410	141	118	18	98	45	90	15	11	17.5	11	M8×1P	70			
			1.5×2	2720	6180	75											131	136		
			2.5×2	4930	12360	180											96			
			3.5×1	3630	8650	151											70			
10	6.35	2.5×1	2720	6180	137	118	18	98	45	90	15	11	17.5	11	M8×1P	136				
		2.5×2	4930	12360	75											208	97			
		3.5×1	3630	8650	161											70				
		2.5×1	2720	6180	137											136				
12	6.35	2.5×2	4930	12360	208	118	18	98	45	90	15	11	17.5	11	M8×1P	97				
		3.5×1	3630	8650	161											97				



Unit: mm

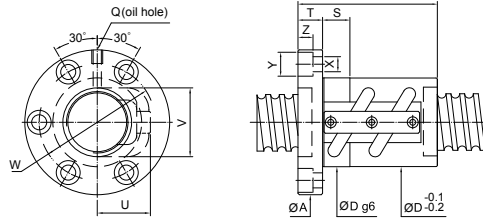
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE						FIT	OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm		
40	5	3.175	1.5×2	1280	4275		88													82
			2.5×1	1090	3560		84													69
			2.5×2	1980	7120	67	108	101	15	83	39	78	15	9	14	8.5	M8×1P		133	
			2.5×3	2800	10680		139												196	
			3.5×1	1450	4980		88												95	
	6	3.969	1.5×2	1750	5300		103													85
			2.5×1	1500	4420		90													71
			2.5×2	2720	8840	70	123	104	15	86	40	80	15	9	14	8.5	PT1/8"		138	
			2.5×3	3850	13260		159												202	
			3.5×1	2000	6190		103												98	
	8	4.762	1.5×2	2220	6320		124													86
			2.5×1	1900	5270		108													73
			2.5×2	3450	10540	74	152	108	15	90	41	82	15	9	14	8.5	PT1/8"		141	
			3.5×1	2540	7380		125												100	
			2.5×2	3370	8335		141													91
	10	6.35	2.5×1	2880	6950		131													71
			2.5×2	5220	13900	82	180	124	18	102	47	94	20	11	17.5	11	PT1/8"		148	
			3.5×1	3840	9730		151												105	
			2.5×1	2880	6950		137													76
	12	6.35	2.5×2	5220	13900	86	208	128	18	106	48	96	20	11	17.5	11	PT1/8"		148	
			3.5×1	3840	9730		161												105	
			2.5×2	2850	9870	80	123													151
45	6	3.969	2.5×3	4035	14800		159	114	15	96	48	96	15	9	14	8.5	PT1/8"		222	
			2.5×2	3650	11780	85	158													155
	8	4.762	2.5×3	5175	17670		206	127	18	105	52	104	20	11	17.5	11	PT1/8"		228	
			2.5×2	5480	15700	88	180													163
	10	6.35	2.5×3	7760	23550		243	132	18	110	50	100	20	11	17.5	11	PT1/8"		239	
			2.5×1	3550	8950		140													85
	12	7.144	2.5×2	6440	17900	90	210	132	18	110	50	100	20	11	17.5	11	PT1/8"		165	

FDWC



Unit: mm

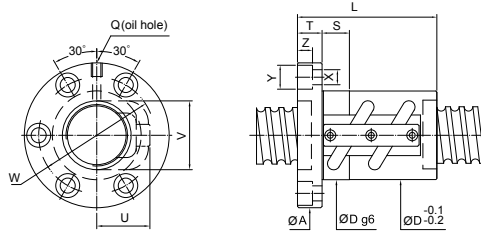
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT	OIL HOLE			BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm
50	5	3.175	1.5×2	1410	5305	108												98
			1.5×3	2000	7960	128												144
			2.5×2	2190	8840	113	114	15	96	43	86	15	9	14	8.5	PT1/8"		159
			3.5×1	1610	6190	108												114
	6	3.969	1.5×2	1920	6600	111												101
			2.5×2	2980	11000	123												164
			2.5×3	4220	16500	159	118	15	100	45	90	15	9	14	8.5	PT1/8"		242
			3.5×1	2190	7700	107												117
	8	4.762	1.5×2	2515	7810	127												104
			2.5×2	3900	13020	156												170
			2.5×3	5520	19530	208	128	18	107	49	98	20	11	17.5	11	PT1/8"		250
			3.5×1	2870	9110	127												121
	10	6.35	1.5×2	3725	10450	151												108
			2.5×1	3190	8710	132												91
			2.5×2	5790	17420	180	135	18	113	51	102	20	11	17.5	11	PT1/8"		177
			2.5×3	8200	26130	243												261
	12	7.144	3.5×1	4260	12190	151												126
			2.5×1	3700	10050	140												92
			2.5×2	6710	20100	210	146	18	122	55	110	20	14	20	13	PT1/8"		179
	55	10	6.35	2.5×2	6005	19540	181											191
				2.5×3	8510	29310	243	144	18	122	54	108	20	11	17.5	11	PT1/8"	
63	10	6.35	2.5×1	3510	11200	136											110	
			2.5×2	6370	22400	189	154	22	130	58	116	20	14	20	13	PT1/8"		213
			2.5×3	9020	33600	249												313
	12	7.938	2.5×1	4760	13820	144											112	
			2.5×2	8650	27560	214	161	22	137	61	122	20	14	20	13	PT1/8"		218
	16	9.525	2.5×1	8050	23100	200											144	
2.5×2			14600	46200	296	178	28	150	69	138	20	18	26	17.5	PT1/8"		280	
80	10	6.35	2.5×2	7130	28500	189											258	
			2.5×3	10100	42750	249	176	22	152	66	132	20	14	20	13	PT1/8"		380
	12	7.938	2.5×2	9710	35560	220											265	
			2.5×3	13760	53340	292	182	22	158	68	136	20	14	20	13	PT1/8"		391
	16	9.525	2.5×2	16450	59280	290											339	
			2.5×3	23300	88920	386	204	28	172	77	154	30	18	26	17.5	PT1/8"		500



Unit: mm

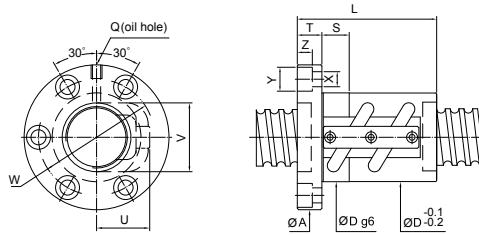
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT		OIL HOLE			RETURN TUBE		BOLT	STIFFNESS					
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q			kgf/um				
14	4	2.381	2.5×1	410	750	25	40	45	10	35	10	5.5	9.5	5.5	19	21	M6×1P	14						
	5	3.175	2.5×1	675	1145	25	42	45	10	35	10	5.5	9.5	5.5	19	21	M6×1P	15						
15	4	2.381	2.5×1	420	800	28.5	40	48	10	38	10	5.5	9.5	5.5	17	22	M6×1P	14						
	5	3.175	2.5×1	680	1210	28.5	42	48	10	38	10	5.5	9.5	5.5	17	22	M6×1P	15						
16	5	3.175	1.5×2	805	1525	31	50	54	12	41	15	5.5	9.5	5.5	20	23	M6×1P	19						
			2.5×1	690	1270		45											16						
			2.5×2	1250	2540		60											31						
			3.5×1	920	1780		50											22						
20	5	3.175	1.5×2	965	2070	35	50	58	12	46	15	5.5	9.5	5.5	22	27	M6×1P	24						
			2.5×1	830	1730		45				20													
			2.5×2	1510	3460		60				39													
			3.5×1	1110	2420		50				26													
	6	3.969	1.5×2	1285	2545	36	66				15							5.5	9.5	5.5	23	28	M6×1P	24
			2.5×1	1100	2120		48				10													20
		3.5×1	1470	2970		66	15								28									
25	6	3.969	1.5×2	1420	3215	42	65	68	12	55	15	5.5	9.5	5.5	28	33	M6×1P	29						
			2.5×1	1210	2680		50											24						
			2.5×2	2190	5360		68											47						
			3.5×1	1610	3750		65											34						
	10	4.762	1.5×2	1820	3840	45	75	72	16	58	15	6.6	11	6.5	29	34	M6×1P	30						
			2.5×1	1560	3200		65											25						
		3.5×1	2080	4480		75											35							
28	5	3.175	1.5×2	1110	2960	44	50	70	12	56	15	6.6	11	6.5	28	34	M6×1P	31						
			2.5×1	950	2470		45											26						
			2.5×2	1720	4940		60											50						
			3.5×1	1270	3460		50											36						
	6	3.969	1.5×2	1480	3605	44	55	70	12	56	15	6.6	11	6.5	28	36	M6×1P	32						
			2.5×1	1270	3000		50											26						
			2.5×2	2300	6000		68											51						
			3.5×1	1690	4200		55											37						

FSVC



Unit: mm

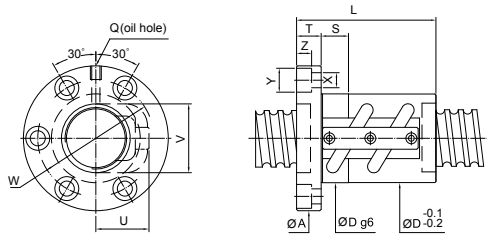
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT		OIL HOLE				RETURN TUBE		BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm		
32	5	3.175	1.5×2	1180	3410	50														34
			2.5×1	1010	2840	45														29
			2.5×2	1830	5680	50	60	76	12	63	15	6.6	11	6.5	30	38	M6×1P			56
			2.5×3	2590	8520	75														82
			3.5×1	1350	3980	50														40
	6	3.969	1.5×2	1560	4135	55														35
			2.5×1	1330	3450	50														29
			2.5×2	2410	6900	52	68	78	12	65	15	6.6	11	6.5	32	39	M6×1P			57
			3.5×1	1770	4830	55														40
	8	4.762	1.5×2	2010	5010	70														36
			2.5×1	1720	4180	62														30
			2.5×2	3120	8360	54	86	88	16	70	15	9	14	8.5	33	40	M6×1P			59
			3.5×1	2300	5850	70														42
	10	6.35	1.5×2	3000	6530	78														38
			2.5×1	2570	5440	68														32
			2.5×2	4660	10880	57	98	91	16	73	15	9	14	8.5	37	44	M8×1P			61
3.5×1			3430	7620	78														44	
36	6	3.969	2.5×1	1430	3950	50													33	
			2.5×2	2600	7900	55	68	82	12	68	15	6.6	11	6.5	32	42	M6×1P			63
	10	6.35	1.5×2	3180	7410	82													41	
			2.5×1	2720	6180	72														35
			2.5×2	4930	12360	62	102	104	18	82	20	11	17.5	11	40	49	M6×1P			68
			3.5×1	3630	8650	82												48		



Unit: mm

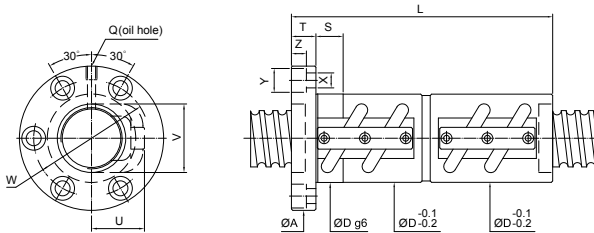
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT		OIL HOLE			RETURN TUBE		BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q		
40	5	3.175	1.5×2	1280	4270	55												M8×1P	41
			2.5×1	1090	3560	50													34
			2.5×2	1980	7120	58	65	92	16	72	15	9	14	8.5	34	46			66
			2.5×3	2800	10680	80													98
			3.5×1	1450	4980	55													47
	6	3.969	1.5×2	1750	5300	60													42
			2.5×1	1500	4420	54													35
			2.5×2	2720	8840	60	72	94	16	76	15	9	14	8.5	36	47		PT1/8"	69
			2.5×3	3850	13260	90													101
			3.5×1	2000	6190	60													49
	8	4.762	1.5×2	2220	6320	70													43
			2.5×1	1900	5270	62	62												36
			2.5×2	3450	10540	86	96	16	78	15	9	14	85	38	48		PT1/8"		70
			3.5×1	2540	7380	70													50
	10	6.35	1.5×2	3370	8335	82													45
			2.5×1	2880	6950	72	72												35
			2.5×2	5220	13900	102	106	18	85	20	11	17.5	11	42	52		PT1/8"		74
			3.5×1	3840	9730	82													52
45	10	6.35	2.5×1	3020	7850	74	74												42
			2.5×2	5480	15700	104	112	18	90	20	11	17.5	11	48	58		PT1/8"		81
	12	7.144	2.5×1	3550	8950	87	87												43
			2.5×2	6440	17900	123	122	18	97	20	14	20	13	49	60		PT1/8"		82

FSVC



Unit: mm

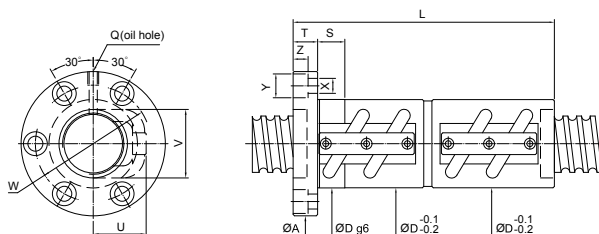
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT		OIL HOLE		RETURN TUBE		BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁵ REV.)	Static	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm
				Ca	Co													
50	5	3.175	1.5×2	1410	5305	63												49
			1.5×3	2000	7960	70	73	104	16	86	15	9	14	8.5	40	56	PT1/8"	72
			3.5×1	1610	6190	63												57
	6	3.969	2.5×2	2980	11000	72	75	106	16	88	15	9	14	8.5	43	57	PT1/8"	82
			2.5×3	4220	16500	93												121
	8	4.762	2.5×2	3900	13020	75	88	116	18	95	20	11	17.5	11	45	59	PT1/8"	85
			2.5×3	5520	19530	112												125
	10	6.35	1.5×2	3725	10450	84												54
			2.5×1	3190	8710	74												45
			2.5×2	5790	17420	78	104	119	18	98	20	11	17.5	11	48	62	PT1/8"	88
			2.5×3	8200	26130	134												130
	12	7.144	3.5×1	4260	12190	84												63
			2.5×1	3700	10050	87	128	22	105	20	14	20	13	52	64	PT1/8"	46	
			2.5×2	6710	20100	123												89
55	10	6.35	2.5×2	6005	19540	84	100	125	18	103	20	11	17.5	11	54	68	PT1/8"	95
			2.5×3	8150	29310	130												140
			2.5×1	3510	11200	77												55
63	10	6.35	2.5×2	6370	22400	90	107	132	20	110	20	11	17.5	11	53	74	PT1/8"	106
			2.5×3	9020	33600	137												156
			2.5×1	4770	13780	88												59
	12	7.938	2.5×2	8650	27560	94	124	142	22	117	20	14	20	13	57	76	PT1/8"	113
			2.5×3	12250	41340	160												167
			2.5×1	8050	23100	105	150	22	123	20	14	20	13	62	78	PT1/8"	72	
80	16	9.525	2.5×2	14600	46200	100	153										140	
			2.5×2	7130	28500	115	109	163	22	137	20	14	20	13	64	91	PT1/8"	129
			2.5×3	10100	42750	139												190
	12	7.938	2.5×2	9710	35560	120	125	169	22	143	25	14	20	13	67	93	PT1/8"	137
			2.5×3	13760	53340	159												202
			2.5×2	16450	59280	125	156	190	28	154	25	18	26	17.5	70	94	PT1/8"	170
			2.5×3	23300	88920	204											250	



Unit: mm

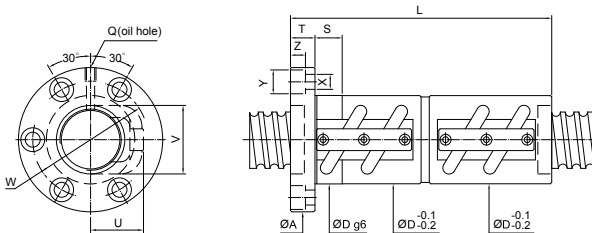
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT		OIL HOLE			RETURN TUBE		BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q		
16	5	3.175	1.5×2	805	1525	31	90	54	12	41	15	5.5	9.5	5.5	20	23	M6×1P	39	
			2.5×1	690	1270		80											33	
			2.5×2	1250	2540		110											63	
			3.5×1	920	1780		90											45	
20	5	3.175	1.5×2	965	2070	35	90	58	12	46	15	5.5	9.5	5.5	22	27	M6×1P	47	
			2.5×1	830	1730		80											40	
			2.5×2	1510	3460		110											77	
			3.5×1	1110	2420		90											55	
25	6	3.969	1.5×2	1285	2545	36	104	60	12	47	15	5.5	9.5	5.5	23	28	M6×1P	49	
			2.5×1	1100	2120		92											41	
			3.5×1	1470	2970		104											56	
			1.5×2	1065	2575		40											90	64
2.5×1	910	2150	80	48															
2.5×2	1650	4300	110	92															
3.5×1	1210	3010	90	65															
25	6	3.969	1.5×2	1420	3215	42	104	68	12	55	15	5.5	9.5	5.5	28	33	M6×1P	58	
			2.5×1	1210	2680		92											49	
			2.5×2	2190	5360		128											94	
			3.5×1	1610	3750		104											67	
28	10	4.762	1.5×2	1820	3840	45	136	72	16	58	15	6.6	11	6.5	29	34	M6×1P	60	
			2.5×1	1560	3200		122											50	
			3.5×1	2080	4480		136											69	
			1.5×2	1110	2960		44											90	70
2.5×1	950	2470	80	52															
2.5×2	1720	4940	110	101															
3.5×1	1270	3460	90	72															
28	6	3.969	1.5×2	1480	3605	44	110	70	12	56	15	6.6	11	6.5	28	36	M6×1P	63	
			2.5×1	1270	3000		98											53	
			2.5×2	2300	6000		134											103	
			3.5×1	1690	4200		110											73	

FDVC



Unit: mm

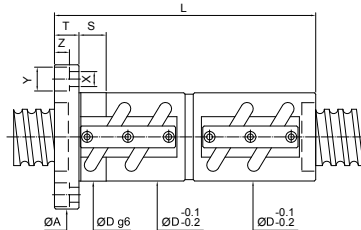
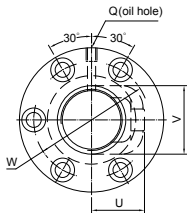
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE		FIT S	OIL HOLE			RETURN TUBE		BOLT Q	STIFFNESS kgf/μm
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	X	Y	Z	U	V		
32	5	3.175	1.5×2	1180	3410	90											69
			2.5×1	1010	2840	80											58
			2.5×2	1830	5680	50	110	76	12	63	15	6.6	11	6.5	30	38	112
			2.5×3	2590	8520	140											164
			3.5×1	1350	3980	90											80
	6	3.969	1.5×2	1560	4135	104											70
			2.5×1	1330	3450	92											59
			2.5×2	2410	6900	52	128	78	12	65	15	6.6	11	6.5	32	39	114
			3.5×1	1770	4830	104											81
	8	4.762	1.5×2	2010	5010	126											73
			2.5×1	1720	4180	110											61
			2.5×2	3120	8360	54	158	88	16	70	15	9	14	8.5	33	40	118
			3.5×1	2300	5850	126											84
	10	6.35	1.5×2	3000	6530	142											76
			2.5×1	2570	5440	122											64
			2.5×2	4660	10880	57	182	91	16	73	15	9	14	8.5	37	44	123
			3.5×1	3430	7620	142											88
36	6	3.969	2.5×1	1430	3950	92											65
			2.5×2	2600	7900	55	128	82	12	68	15	6.6	11	6.5	32	42	126
	10	6.35	1.5×2	3180	7410	144											83
			2.5×1	2720	6180	124											70
			2.5×2	4930	12360	62	184	104	18	82	20	11	17.5	11	40	49	136
			3.5×1	3630	8650	144											90



Unit: mm

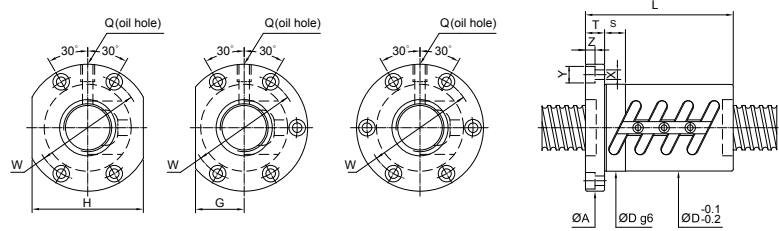
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT		OIL HOLE				RETURN TUBE		BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm		
40	5	3.175	1.5×2	1280	4275	94													M8×1P	82
			2.5×1	1090	3560	84														69
			2.5×2	1980	7120	58	114	92	16	72	15	9	14	8.5	34	46				133
			2.5×3	2800	10680	144														196
			3.5×1	1450	4980	94														95
	6	3.969	1.5×2	1750	5300	108														85
			2.5×1	1500	4420	96														71
			2.5×2	2720	8840	60	132	94	16	76	15	9	14	8.5	36	47			PT1/8"	138
			2.5×3	3850	13260	168														202
			3.5×1	2000	6190	108														98
	8	4.762	1.5×2	2220	6320	126														86
			2.5×1	1900	5270	110														73
			2.5×2	3450	10540	62	158	96	16	78	15	9	14	8.5	38	48			PT1/8"	141
			3.5×1	2540	7380	126														100
	10	6.35	1.5×2	3370	8335	152														91
			2.5×1	2880	6950	65	132	106	18	85	20	11	17.5	11	42	52			PT1/8"	71
			2.5×2	5220	13900	192														148
			3.5×1	3840	9730	152														105
45	10	6.35	2.5×1	3020	7850	70	134	112	18	90	20	11	17.5	11	48	58			84	
			2.5×2	5480	15700	194													PT1/8"	163
	12	7.144	2.5×1	3550	8950	74	158	122	18	97	20	14	20	13	49	60			85	
			2.5×2	6440	17900	230													PT1/8"	165

FDVC



Unit: mm

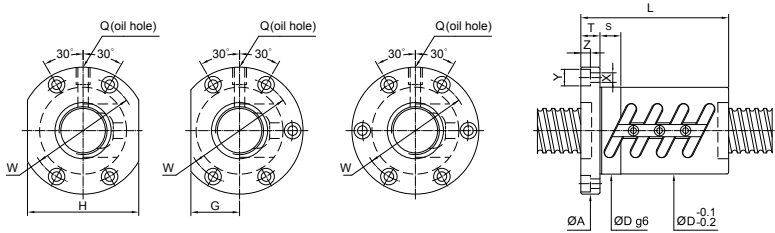
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT		OIL HOLE			RETURN TUBE		BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm	
50	5	3.175	1.5×2	1410	5305	70	107												98
			1.5×3	2000	7960	127	104	16	86	15	9	14	8.5	40	56	PT1/8"	144		
			3.5×1	1610	6190	107												114	
	6	3.969	2.5×2	2980	11000	72	134	106	16	88	15	9	14	8.5	43	57	PT1/8"	164	
			2.5×3	4220	16500	170												242	
	8	4.762	2.5×2	3900	13020	75	160	116	18	95	20	11	17.5	11	45	59	PT1/8"	170	
			2.5×3	5520	19530	208												250	
	10	6.35	1.5×2	3725	10450		154											119	
			2.5×1	3190	8710		134											91	
			2.5×2	5790	17420	78	194	119	18	98	20	11	17.5	11	48	62	PT1/8"	177	
			2.5×3	8200	26130		254											261	
	12	7.144	3.5×1	4260	12190		154											126	
			2.5×1	3700	10050	82	160	128	22	105	20	14	20	13	52	64	PT1/8"	92	
			2.5×2	6710	20100	232												179	
55	10	6.35	2.5×2	6005	19540	84	194	125	18	103	20	11	17.5	11	54	68	PT1/8"	191	
			2.5×3	8510	29310	254												281	
63	10	6.35	2.5×1	3510	11200		136											110	
			2.5×2	6370	22400	90	196	132	20	110	20	11	17.5	11	53	74	PT1/8"	213	
			2.5×3	9020	33600	256												313	
	12	7.938	2.5×1	4760	13820		160											112	
			2.5×2	8650	27560	94	232	142	22	117	20	14	20	13	57	76	PT1/8"	218	
			2.5×3	12250	41340	304												322	
16	9.528	2.5×1	8050	23100	100	200	150	22	123	20	14	20	13	62	78	PT1/8"	144		
		2.5×2	14600	46200	296												280		
80	10	6.35	2.5×2	7130	28500	115	200	163	22	137	20	14	20	13	64	91	PT1/8"	258	
			2.5×3	10100	42750	260												380	
	12	7.938	2.5×2	9710	35560	120	232	169	22	143	25	14	20	13	67	93	PT1/8"	265	
			2.5×3	13760	53340	302												391	
	16	9.525	2.5×2	16450	59280	125	302	190	28	154	25	18	26	17.5	70	94	PT1/8"	339	
			2.5×3	23300	88920	398												500	



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(<i>kgf</i>)		NUT		FLANGE					FIT		OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	<i>kgf/μm</i>		
20	4	2.381	2.5×1×(2) 3.5×1×(2)	450 600	1060 1480	40 60	50 60	63.5	11	51	21	42	10	5.5	9.5	5.5	5.5	M6×1P	32 49	
	5	3.175	2.5×1×(2) 3.5×1×(2)	830 1110	1730 2420	44 65	56 65	67	11	55	26	52	15	5.5	9.5	5.5	5.5	M6×1P	40 55	
	6	3.969	2.5×1×(2)	1100	2120	48	67	71	11	59	27	54	15	5.5	9.5	5.5	5.5	M6×1P	41	
	8	3.969	2.5×1×(2)	1100	2120	48	78	75	13	61	27	54	15	6.6	11	6.5	6.5	M6×1P	41	
25	4	2.381	2.5×1×(2) 2.5×2×(2)	510 930	1355 2710	46 74	50 74	69	11	57	26	52	15	5.5	9.5	5.5	5.5	M6×1P	43 84	
	5	3.175	2.5×1×(2) 2.5×2×(2)	910 1650	2150 4300	50 85	55 85	73	11	61	28	56	15	5.5	9.5	5.5	5.5	M6×1P	48 92	
	6	3.969	2.5×1×(2) 2.5×2×(2)	1210 2190	2680 5360	53 98	62 98	76	11	64	29	58	15	5.5	9.5	5.5	5.5	M6×1P	49 94	
	8	4.762	2.5×1×(2)	1560	3200	58	77	85	13	71	32	64	15	6.6	11	6.5	6.5	M6×1P	50	
	10	4.762	2.5×1×(2)	1560	3200	58	100	85	15	71	32	64	15	6.6	11	6.5	6.5	M6×1P	50	
28	5	3.175	2.5×1×(2) 2.5×2×(2)	950 1720	2470 4940	55 86	56 86	83	12	69	31	62	15	6.6	11	6.5	6.5	M8×1P	52 101	
	6	3.969	2.5×1×(2) 2.5×2×(2)	1270 2300	3000 6000	55 100	63 100	83	12	69	31	62	15	6.6	11	6.5	6.5	M8×1P	53 103	
	10	4.762	1.5×1×(2)	1045	2120	60	74	93	15	76	36	72	15	9	14	8.5	8.5	M8×1P	34	
	12	4.762	1.5×1×(2)	1045	2120	60	74	93	15	76	36	72	15	9	14	8.5	8.5	M8×1P	34	
32	4	2.381	2.5×1×(2) 2.5×2×(2)	565 1020	1750 3500	54 76	50 76	81	12	67	32	64	15	6.6	11	6.5	6.5	M6×1P	52 101	
	5	3.175	2.5×1×(2) 2.5×2×(2)	1010 1830	2840 5680	58 87	57 87	85	12	71	32	64	15	6.6	11	6.5	6.5	M8×1P	58 112	
	6	3.969	2.5×1×(2) 2.5×2×(2)	1330 2410	3450 6900	62 99	63 99	88	12	75	34	68	15	6.6	11	6.5	6.5	M8×1P	59 114	
	8	4.762	1.5×1×(2) 2.5×1×(2)	1110 1720	2510 4180	66 80	64 80	100	15	82	38	76	15	9	14	8.5	8.5	M8×1P	37 61	
	10	6.35	1.5×1×(2) 2.5×1×(2)	1660 2570	3260 5440	74 97	78 97	108	15	90	41	82	15	9	14	8.5	8.5	M6×1P	39 64	
	12	6.35	1.5×1×(2) 2.5×1×(2)	1660 2570	3260 5440	74 110	88 110	108	18	90	41	82	15	9	14	8.5	8.5	M8×1P	39 64	
	14	6.35	1.5×1×(2) 2.5×1×(2)	1660 2570	3260 5440	74 110	88 110	108	18	90	41	82	15	9	14	8.5	8.5	M8×1P	39 64	
	16	6.35	1.5×1×(2) 2.5×1×(2)	1660 2570	3260 5440	74 110	88 110	108	18	90	41	82	15	9	14	8.5	8.5	M8×1P	39 64	

FOWC



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT		OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm		
36	5	3.175	2.5×1×(2)	1060	3210	65	60 90	98	15	82	38	76	15	9	14	8.5	M8×1P		64 123	
			2.5×2×(2)	1920	6420															
	6	3.969	2.5×1×(2)	1430	3950	65	66 102	98	15	82	38	76	15	9	14	8.5	M8×1P		65 126	
			2.5×2×(2)	2600	7900															
	10	6.35	1.5×1×(2)	1750	3710	75	81 103	118	18	98	45	90	15	11	17.5	11	M8×1P		43 70	
			2.5×1×(2)	2720	6180															
40	5	3.175	2.5×1×(2)	1090	3560	67	60 90	101	15	83	39	78	15	9	14	8.5	M8×1P		69 133	
			2.5×2×(2)	1980	7120															
	6	3.969	2.5×1×(2)	1500	4420	70	66 102	104	15	86	40	80	15	9	14	8.5	PT1/8"		71 138	
			2.5×2×(2)	2720	8840															
	8	4.762	2.5×1×(2)	1900	5270	74	83 131	108	15	90	41	82	15	9	14	8.5	PT1/8"		73 141	
			2.5×2×(2)	3450	10540															
	10	6.35	1.5×1×(2)	1860	4710	82	81	103	124	18	102	47	94	20	11	17.5	11	PT1/8"		47 76
			2.5×1×(2)	2880	6950															
	12	6.35	3.5×1×(2)	3850	9730	86	121	112	128	18	106	48	96	20	11	17.5	11	PT1/8"		76 105
			2.5×1×(2)	2880	6950															
45	10	6.35	2.5×1×(2)	3020	7850	88	101	132	18	110	50	100	20	11	17.5	11	PT1/8"		84	
	12	7.144	2.5×1×(2)	3550	8950	90	112	132	18	110	50	100	20	11	17.5	11	PT1/8"		85	
	5	3.175	2.5×1×(2)	1210	4420	80	60	114	15	96	43	86	15	9	14	8.5	PT1/8"		83	
50	6	3.969	2.5×2×(2)	2980	11000	84	103	118	15	100	45	90	15	9	14	8.5	PT1/8"		164	
	8	4.762	2.5×2×(2)	3900	13020	87	134	129	18	107	49	98	20	11	17.5	11	PT1/8"		170	
	10	6.35	2.5×1×(2)	3190	8710	93	101	161	135	18	113	51	102	20	11	17.5	11	PT1/8"		91 177
			2.5×2×(2)	5790	17420															
	12	7.144	3.5×1×(2)	4260	12190	100	121	116	146	22	122	55	110	20	14	20	13	PT1/8"		126 92
			2.5×1×(2)	3700	10050															
55	10	6.35	2.5×1×(2)	3310	9770	102	101 161	144	18	122	54	108	20	11	17.5	11	PT1/8"		98 191	
			2.5×2×(2)	6005	19540															
63	10	6.35	2.5×1×(2)	3510	11200	108	105 165	154	22	130	58	116	20	14	20	13	PT1/8"		110 213	
			2.5×2×(2)	6370	22400															
	12	7.938	2.5×1×(2)	4770	13780	115	124	161	22	137	61	122	20	14	20	13	PT1/8"		113	

13.4 High Lead Ballscrews

High-lead Ballscrews are essential elements and parts for high-speed machine tools of next century.

Features:

It is important for a High-lead Ballscrew to be with characteristics of high rigidity, low noise and thermal control. *PMI*'s designs and treatments are taken for following:

High DN Value

The DN value can be 130,000 in normal case. For some special cases, for example in a fixed ends case, the DN value can be as high as 140,000. Please contact our engineers for this special application.

High Speed

PMI's High-speed Ballscrews provide 100 *m/min* and even higher traverse speed for machine tools for high performance cutting.

High Rigidity

Both the screw and ballnut are surface hardened to a specific hardness and case depth to maintain high rigidity and durability.

Multiple thread starts are available to make more steel balls loaded in the ballnut for higher rigidity and durability.

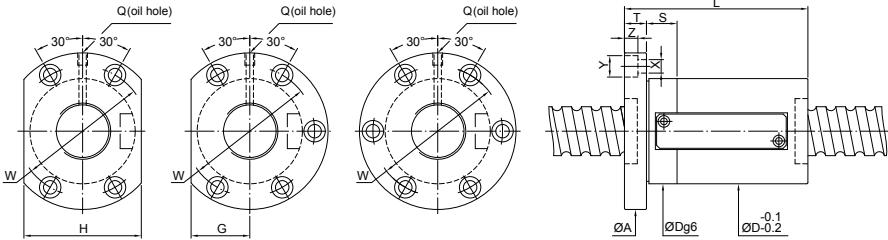
Low Noise

Special design of ball circulation tubes offer smooth ball circulation inside the ballnut. It also makes safe ball fast running into the tubes without damaging the tubes.

Accurate ball circle diameter (BCD) through whole threads for consistent drag torque and low noise.



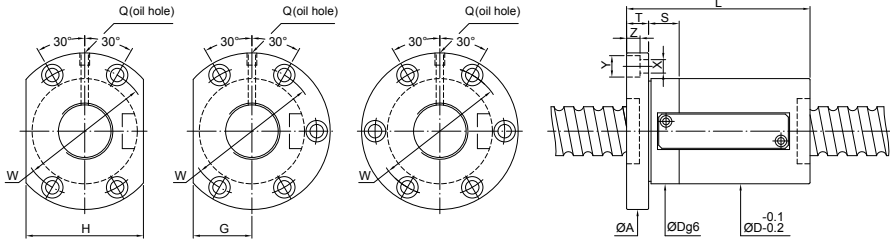
FSWE



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit x row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT		OIL HOLE			BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1x10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm	
12	10	2.381	2.5x1	420	720	30	50	50	10	40	16	32	10	4.5	8	4.4	M6x1P	20	
20	10	3.969	2.5x1 3.5x1	1210 1580	2380 3230	46	63 73	73.5	13	59	25	50	10	5.5	9.5	5.5	M6x1P	34 45	
	16	3.969	1.5x1 2.5x1	830 1210	1530 2380	46	63 79	73.5	13	59	25	50	10	5.5	9.5	5.5	M6x1P	24 34	
	20	3.969	1.5x1	830	1530	46	70	73	13	59	25	50	10	5.5	9.5	5.5	M6x1P	24	
	25	4.762	1.5x1 2.5x1 3.5x1	920 1340 1710 2220	1930 3000 3580 4860	54 62 58	62 78 94 114	76	15	64	32	64	15	6.6	11	6.5	M6x1P	28 40 42 55	
32	16	3.969	1.5x1	1010	2480		63											33	
			2.5x1	1470	3860	62	79	88	15	75	34	68	15	6.6	11	6.5	M8x1P	48	
			3.5x1	1910	5240		95											63	
			5x1	2340	6620		111											77	
	16	6.35	2.5x1	2830	6090		92											54	
			3.5x1	3680	8270	74	108	108	18	90	41	82	15	11	17.5	11	M8x1P	69	
			5x1	4490	10450		124											85	
	20	3.969	1.5x1	1010	2480		70											33	
			2.5x1	1470	3860	62	90	88	15	75	34	68	15	6.6	11	6.5	M8x1P	48	
			3.5x1	1910	5240		110											63	
			5x1	2350	6610		130											77	
	20	6.35	2.5x1	2830	6090		104											54	
3.5x1			3680	8270	74	124	108	18	90	41	82	15	11	17.5	11	M8x1P	69		
5x1			4490	10450		144											85		

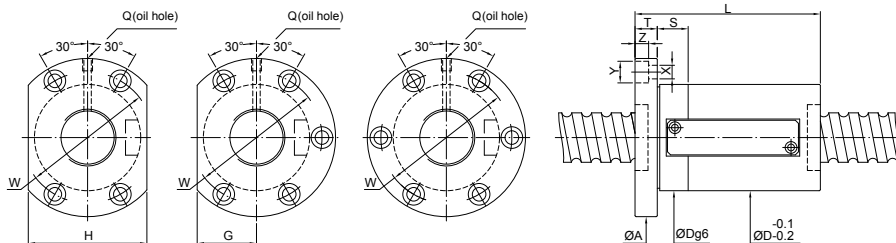
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Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD (kgf)		NUT		FLANGE					FIT		OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm		
36	10	6.35	3.5×1	3890	9390	75	84 94	118	18	98	45	90	15	11	17.5	11	M8×1P	76		
			5×1	4750	11860													93		
	12	6.35	2.5×1	2990	6920	75	85	118	18	98	45	90	15	11	17.5	11	M8×1P	58		
			3.5×1	3890	9390													97	76	
			5×1	4750	11860	109											93			
	16	6.35	2.5×1	2990	6920	75	91	118	18	98	45	90	15	11	17.5	11	M8×1P	58		
			3.5×1	3890	9390													107	76	
			5×1	4750	11860	123												93		
	20	6.35	1.5×1	2050	4450	75	91	118	18	98	45	90	15	11	17.5	11	PT1/8"	41		
			2.5×1	2990	6920													111	58	
3.5×1			3890	9390	131													76		
5×1			4750	11860	151													93		
40	10	6.35	3.5×1	4130	10560	86	86 96	128	18	106	49	98	15	11	17.5	11	PT1/8"	82		
			5×1	5050	13340													101		
	12	6.35	2.5×1	3180	7780	86	86	128	18	106	49	98	15	11	17.5	11	PT1/8"	63		
			3.5×1	4130	10560													98	82	
			5×1	5050	13340	110										101				
	16	6.35	2.5×1	3180	7780	86	93	128	18	106	49	98	15	11	17.5	11	PT1/8"	63		
			3.5×1	4130	10560													109	82	
			5×1	5050	13340	125											101			
	16	7.144	2.5×1	3740	8790	86	92	128	18	106	49	98	15	11	17.5	11	PT1/8"	65		
			3.5×1	4870	11930													108	84	
			5×1	5950	15070	124											103			
	20	6.35	1.5×1	2180	5000	86	84	128	18	106	49	98	15	11	17.5	11	PT1/8"	43		
			2.5×1	3180	7780													104	63	
			3.5×1	4130	10560													124	82	
5×1			5050	13340	144													101		
40	6.35	1.5×1	2180	5000	86	130	128	18	106	49	98	15	11	17.5	11	PT1/8"	43			

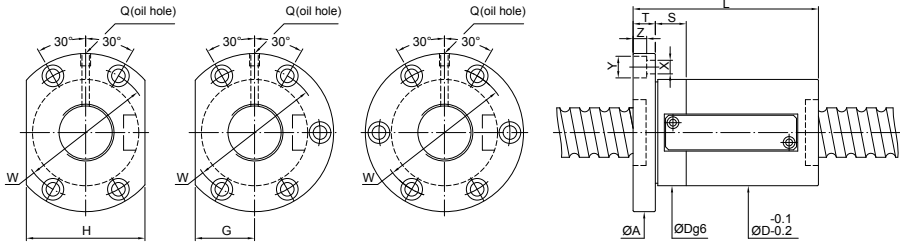
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Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT	OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm	
50	10	6.35	3.5×1 5×1	4560 5580	13230 16710	93	85 95	135	18	113	51	102	20	11	17.5	11	PT1/8"	97 119	
	12	6.35	2.5×1	3510	9750		80											74	
			3.5×1 5×1	4560 5580	13230 16710	93 104	135	18	113	51	102	20	11	17.5	11	PT1/8"	97 119		
	12	7.144	2.5×1	4080	11260		93											75	
			3.5×1 5×1	5300 6480	15280 19300	100 117	105	146	25	122	55	110	20	14	20	13	PT1/8"	99 121	
	16	6.35	2.5×1	3510	9750		94											74	
			3.5×1 5×1	4560 5580	13230 16710	93 126	110	135	18	113	51	102	20	11	17.5	11	PT1/8"	97 119	
	16	7.144	2.5×1	4080	11260		100												75
			3.5×1 5×1	5300 6480	15280 19300	100 132	116	146	25	122	55	110	20	14	20	13	PT1/8"	99 121	
	20	7.144	1.5×1	2790	7240		98												52
			2.5×1	4080	11260		118												75
			3.5×1	5300	15280		138												99
			5×1	6480	19300		158												121
	20	7.938	2.5×1	4750	12090		119												78
			3.5×1 5×1	6180 7550	16400 20720	105 159	139	152	25	128	58	116	20	14	20	13	PT1/8"	101 124	
	50	7.938	1.5×1	3250	7770	105	115	152	25	128	58	116	20	14	20	13	PT1/8"	53	

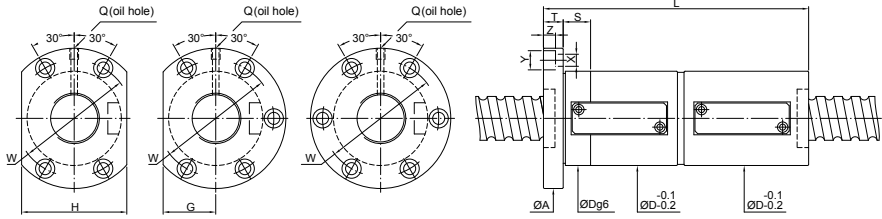
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Unit: mm

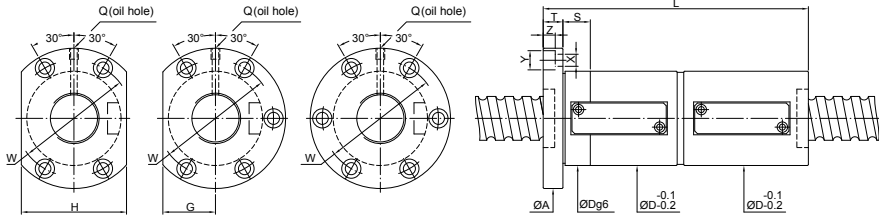
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT	OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm	
63	10	6.35	3.5×1	5030	17020	108	86	154	22	130	58	116	20	14	20	13	PT1/8"	115	
			5×1	6150	21500		96											141	
	12	6.35	2.5×1	3870	12540	108	84	154	22	130	58	116	20	14	20	13	PT1/8"	87	
			3.5×1	5030	17020		96											115	
	12	7.144	5×1	6150	21500	115	108	161	22	137	61	122	20	14	20	13	PT1/8"	141	
			2.5×1	4540	14460		90											89	
	16	7.144	3.5×1	5900	19620	115	102	161	22	137	61	122	20	14	20	13	PT1/8"	117	
			5×1	7210	24780		114											145	
	16	7.938	2.5×1	4540	14460	115	97	161	22	137	61	122	20	14	20	13	PT1/8"	89	
			3.5×1	5900	19620		113											117	
	20	6.35	5×1	7210	24780	120	129	180	28	150	72	144	25	18	26	17.5	PT1/8"	145	
			2.5×1	5260	15430		112											91	
	20	9.525	3.5×1	6840	20940	122	128	180	28	150	72	144	25	18	26	17.5	PT1/8"	120	
5×1			8360	26450	144		147												
20	9.525	2.5×1	3870	12540	108	104	154	22	130	58	116	20	14	20	13	PT1/8"	87		
		3.5×1	5030	17020		124											115		
20	9.525	5×1	6150	21500	122	144	182	28	150	72	144	25	18	26	17.5	PT1/8"	141		
		2.5×1	8870	25870		120											105		
20	9.525	3.5×1	11530	35110	140	182	28	150	72	144	25	18	26	17.5	PT1/8"		136		
		5×1	14090	44350		160											167		
80	10	6.35	3.5×1	5630	21660	130	90	176	22	152	66	132	20	14	20	13	PT1/8"	133	
			5×1	6880	27360		100											164	
	12	7.938	3.5×1	7670	27030	136	101	182	22	158	68	136	20	14	20	13	PT1/8"	143	
			5×1	9380	34140		113											177	
	16	9.525	2.5×1	9400	33100	143	108	204	28	172	77	154	30	18	26	17.5	PT1/8"	124	
			3.5×1	12220	44920		124											162	
	20	9.525	5×1	14940	56740	143	140	204	28	172	77	154	30	18	26	17.5	PT1/8"	201	
			2.5×1	9400	33100		120											124	
20	9.525	3.5×1	12220	44920	143	140	204	28	172	77	154	30	18	26	17.5	PT1/8"	162		
		5×1	14940	56740		160											201		
100	16	9.525	2.5×1	9990	33200	170	115	243	32	205	91	182	30	22	32	21.5	PT1/8"	139	
			3.5×1	12990	45050		131											182	
			5×1	15880	71320		147											226	
	20	9.525	2.5×1	9990	33200	170	128	243	32	205	91	182	30	22	32	21.5	PT1/8"	139	
			3.5×1	12990	45050		148											182	
			5×1	15880	71320		168											226	

FDWE



Unit: mm

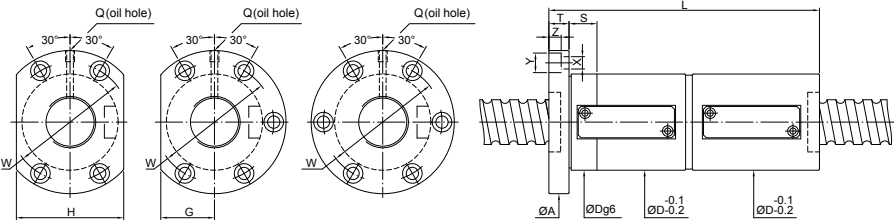
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE		NUT		FLANGE						FIT		OIL HOLE			BOLT		STIFFNESS
O.D.	LEAD			LOAD(kgf)		Dg6	L	A	T	W	G	H	S	X	Y	Z	Q				
				Dynamic (1×10 ⁶ REV.) Ca	Static Co													kgf/μm			
12	10	2.381	2.5×1	420	720	30	102	50	10	40	16	32	10	4.5	8	4.4	M6×1P	30			
20	10	3.969	2.5×1 3.5×1	1210 1580	2380 3230	46	113 133	73.5	13	59	25	50	10	5.5	9.5	5.5	M6×1P	51 68			
	16	3.969	1.5×1 2.5×1	830 1210	1530 2380	46	128 160	73.5	13	59	25	50	10	5.5	9.5	5.5	M6×1P	35 51			
	20	3.969	1.5×1	830	1530	46	130	73	13	59	25	50	10	5.5	9.5	5.5	M6×1P	35			
	16	3.969	1.5×1 2.5×1	920 1340	1930 3000	54	126 158	76	15	64	32	64	15	6.6	11	6.5	M6×1P	41 61			
25	20	4.762	1.5×1 2.5×1 3.5×1	1170 1710 2220	2300 3580 4860	58	154 194 234	85	15	71	32	64	15	6.6	11	6.5	M6×1P	43 63 83			
	16	3.969	1.5×1	1010	2480		130											49			
			2.5×1	1470	3860	62	162	88	15	75	34	68	15	6.6	11	6.5	M8×1P	73			
3.5×1			1910	5240		194											96				
5×1			2340	6620		226											120				
32	16	6.35	2.5×1	2830	6090		173											80			
			3.5×1	3680	8270	74	205	108	18	90	41	82	15	11	17.5	11	M8×1P	105			
			5×1	4490	10450		237											131			
	20	3.969	1.5×1	1010	2480		93											49			
			2.5×1	1470	3860	62	133	88	15	75	34	68	15	6.6	11	6.5	M8×1P	73			
			3.5×1	1910	5240		173											96			
			5×1	2350	6610		213											120			
	20	6.35	2.5×1	2830	6090		204											80			
3.5×1			3680	8270	74	244	108	18	90	41	82	15	11	17.5	11	M8×1P	105				
5×1			4490	10450		284											131				



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE					FIT		OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm		
36	10	6.35	3.5×1	3890	9390	75	155	118	18	98	45	90	15	11	17.5	11	M8×1P	115		
			5×1	4750	11860		175											143		
	12	6.35	2.5×1	2990	6920	75	140	164	118	18	98	45	90	15	11	17.5	11	M8×1P	88	
			3.5×1	3890	9390		204												115	
			5×1	4750	11860		188												143	
	16	6.35	2.5×1	2990	6920	75	171	203	118	18	98	45	90	15	11	17.5	11	M8×1P	88	
			3.5×1	3890	9390		235												115	
			5×1	4750	11860		284												143	
	20	6.35	1.5×1	2050	4450	75	164	118	18	98	45	90	15	11	17.5	11	PT1/8"	59		
			2.5×1	2990	6920		204											88		
			3.5×1	3890	9390		244											115		
			5×1	4750	11860		284											143		
40	10	6.35	3.5×1	4130	10560	86	155	128	18	106	49	98	15	11	17.5	11	PT1/8"	125		
			5×1	5050	13340		175											155		
	12	6.35	2.5×1	3180	7780	86	141	165	128	18	106	49	98	15	11	17.5	11	PT1/8"	95	
			3.5×1	4130	10560		189												125	
			5×1	5050	13340		237												155	
	16	6.35	2.5×1	3180	7780	86	173	205	128	18	106	49	98	15	11	17.5	11	PT1/8"	95	
			3.5×1	4130	10560		237												125	
			5×1	5050	13340		284												155	
	16	7.144	2.5×1	3740	8790	86	173	205	128	18	106	49	98	15	11	17.5	11	PT1/8"	98	
			3.5×1	4870	11930		237												128	
			5×1	5950	15070		284												159	
	20	6.35	1.5×1	2180	5000	86	164	128	18	106	49	98	15	11	17.5	11	PT1/8"	64		
			2.5×1	3180	7780		204											95		
			3.5×1	4130	10560		244											125		
			5×1	5050	13340		284											155		
	40	6.35	1.5×1	2180	5000	86	242	128	18	106	49	98	15	11	17.5	11	PT1/8"	64		

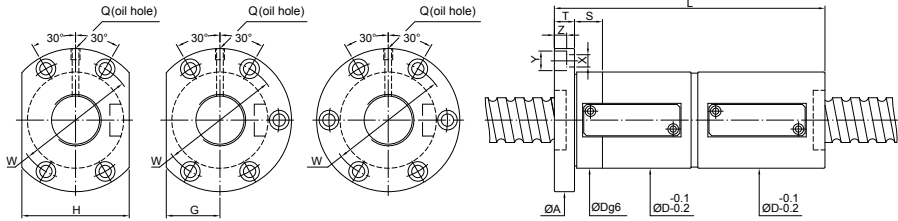
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Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit x row	BASIC RATE		NUT		FLANGE						FIT	OIL HOLE			BOLT	STIFFNESS
O.D.	LEAD			LOAD/(kgf)		Dg6	L	A	T	W	G	H	S	X	Y	Z	Q	kgf/μm	
				Dynamic (1×10 ⁶ REV.) Ca	Static Co														
50	10	6.35	3.5×1	4560	13230	155	93	135	18	113	51	102	20	11	17.5	11	PT1/8"	149	
			5×1	5580	16710	175												185	
	12	6.35	2.5×1	3510	9750	141	93	165	135	18	113	51	102	20	11	17.5	11	PT1/8"	112
			3.5×1	4560	13230	165													149
			5×1	5580	16710	189	100	185	146	25	122	55	110	20	14	20	13	PT1/8"	185
			2.5×1	4080	11260	161													114
			3.5×1	5300	15280	209	100	185	146	25	122	55	110	20	14	20	13	PT1/8"	151
			5×1	6480	19300	209													187
			2.5×1	3510	9750	174	93	206	135	18	113	51	102	20	11	17.5	11	PT1/8"	112
			3.5×1	4560	13230	206													149
			5×1	5580	16710	238	100	212	146	25	122	55	110	20	14	20	13	PT1/8"	185
			2.5×1	4080	11260	180													114
			3.5×1	5300	15280	244	100	219	146	25	122	55	110	20	14	20	13	PT1/8"	151
			5×1	6480	19300	244													187
			1.5×1	2790	7240	179	100	219	146	25	122	55	110	20	14	20	13	PT1/8"	77
			2.5×1	4080	11260	219													114
		3.5×1	5300	15280	259	105	259	152	25	128	58	116	20	14	20	13	PT1/8"	151	
		5×1	6480	19300	299													187	
		2.5×1	4750	12090	219	105	259	152	25	128	58	116	20	14	20	13	PT1/8"	117	
		3.5×1	6180	16400	259													154	
		5×1	7550	20720	299	105	305	152	25	128	58	116	20	14	20	13	PT1/8"	191	
		1.5×1	3250	7770	105													79	

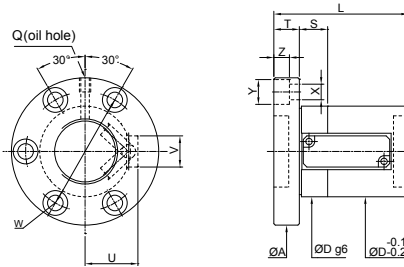
FDWE



Unit: mm

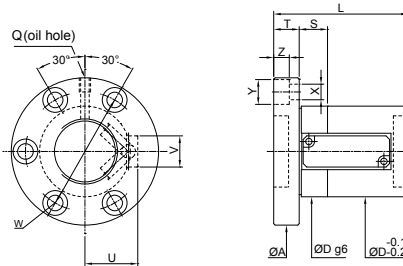
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD/(kgf)		NUT		FLANGE					FIT	OIL HOLE				BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	G	H	S	X	Y	Z	Q		
63	10	6.35	3.5×1	5030	17020	108	155	154	22	130	58	116	20	14	20	13	PT1/8"	178	220
			5×1	6150	21500		175												
	12	6.35	2.5×1	3870	12540		153	154	22	130	58	116	20	14	20	13	PT1/8"	134	178
			3.5×1	5030	17020	108	177												
			5×1	6150	21500		201												
	12	7.144	2.5×1	4540	14460		158	161	22	137	61	122	20	14	20	13	PT1/8"	136	180
			3.5×1	5900	19620	115	182												
			5×1	7210	24780		206												
	16	7.144	2.5×1	4540	14460		177	161	22	137	61	122	20	14	20	13	PT1/8"	136	180
			3.5×1	5900	19620	115	209												
			5×1	7210	24780		241												
	16	7.938	2.5×1	5260	15430		207	180	28	150	72	144	25	18	26	17.5	PT1/8"	139	184
			3.5×1	6840	20940	120	239												
80			5×1	8360	26450		271	180	28	150	72	144	25	18	26	17.5	PT1/8"	228	228
			2.5×1	3870	12540		205												
	20	6.35	3.5×1	5030	17020	108	245	154	22	130	58	116	20	14	20	13	PT1/8"	178	220
			5×1	6150	21500		285												
	20	9.525	2.5×1	8870	25870		219	182	28	150	72	144	25	18	26	17.5	PT1/8"	158	208
			3.5×1	11530	35110	122	259												
			5×1	14090	44350		299												
	10	6.35	3.5×1	5630	21660	130	159	176	22	152	66	132	20	14	20	13	PT1/8"	207	256
			5×1	6880	27360		179												
	12	7.938	3.5×1	7670	27030		184	182	22	158	68	136	20	14	20	13	PT1/8"	222	275
			5×1	9380	34140	136	208												
100			2.5×1	9400	33100		188	204	28	172	77	154	30	18	26	17.5	PT1/8"	189	251
			3.5×1	12220	44920	143	220												
	16	9.525	5×1	14940	56740		252												
			2.5×1	9400	33100		220	204	28	172	77	154	30	18	26	17.5	PT1/8"	189	251
	20	9.525	3.5×1	12220	44920	143	260												
			5×1	14940	56740		300												
	16	9.525	2.5×1	9990	33200		211	243	32	205	91	182	30	22	32	21.5	PT1/8"	213	283
			3.5×1	12990	45050	170	243												
			5×1	15880	71320		259	243	32	205	91	182	30	22	32	21.5	PT1/8"	351	213
			2.5×1	9990	33200		228												
	20	9.525	3.5×1	12990	45050	170	268	243	32	205	91	182	30	22	32	21.5	PT1/8"	283	351
			5×1	15880	71320		308												

FSVE



Unit: mm

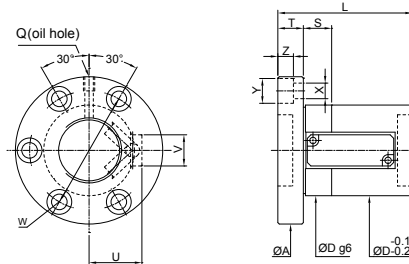
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT		OIL HOLE			RETURN TUBE		BOLT	STIFFNESS									
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm										
12	10	2.381	2.5×1	420	720	25	50	48	10	36	10	4.5	8	4.4	14	12	M6×1P	20										
20	10	3.969	2.5×1 3.5×1	1210 1580	2380 3230	38	63 73	62	13	50	10	5.5	9.5	5.5	23	15	M6×1P	34 45										
	16	3.969	1.5×1 2.5×1	830 1210	1530 2380	38	63 79	62	13	50	10	5.5	9.5	5.5	23	15	M6×1P	24 34										
	20	3.969	1.5×1	830	1530	38	70	62	13	50	10	5.5	9.5	5.5	23	15	M6×1P	24										
	16	3.969	1.5×1 2.5×1	920 1340	1930 3000	42	62 78	68	15	55	15	6.6	11	6.6	26	14	M6×1P	28 40										
25	20	4.762	1.5×1 2.5×1 3.5×1	1170 1710 2220	2300 3580 4860	44	74 94 114	72	15	59	15	6.6	11	6.5	27	16	M6×1P	29 42 55										
	32	16	3.969	1.5×1 2.5×1 3.5×1 5×1	1010 1470 1910 2340	2480 3860 5240 6610	49	63 79 95 111	78	15	63	15	6.6	11	6.6	29	15	M8×1P	33 48 63 77									
2.5×1			2830	8200	92	54																						
6.35			3.5×1 5×1	3680 4490	11120 14050	57	108	98											18	77	20	11	17.5	11	34	22	M8×1P	69 85
20			3.969	1.5×1 2.5×1 3.5×1 5×1	1010 1470 1910 2350	2480 3860 5240 6610	49	70 90 110 130											78	15	63	15	6.6	11	6.6	29	15	M8×1P
20		6.35	2.5×1 3.5×1 5×1	2830 3680 4490	8200 11120 14050	57	124	98	18	77	20	11	17.5	11	34	22	M8×1P	54 69 85										



Unit: mm

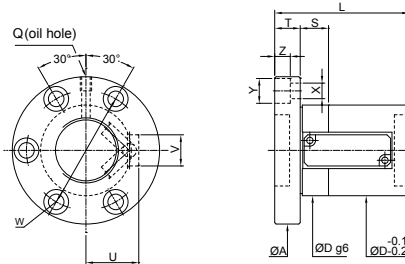
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT	OIL HOLE				RETURN TUBE		BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm	
36	10	6.35	3.5×1	3890	9390	60	84	100	18	80	20	11	17.5	11	36	22	M8×1P	76	
			5×1	4750	11860		94											93	
	12	6.35	2.5×1	2990	6920	60	85	100	18	80	20	11	17.5	11	36	22	M8×1P	58	
			3.5×1	3890	9390		97											76	
			5×1	4750	11860		109											93	
	16	6.35	2.5×1	2990	6920	60	91	100	18	80	20	11	17.5	11	36	22	M8×1P	58	
			3.5×1	3890	9390		107											76	
			5×1	4750	11860		123												93
	20	6.35	1.5×1	2050	4450	60	91	100	18	80	20	11	17.5	11	36	22	M8×1P	41	
			2.5×1	2990	6920		111											58	
			3.5×1	3890	9390		131											76	
			5×1	4750	11860		151											93	
40	10	6.35	3.5×1	4130	10560	64	84	104	18	84	20	11	17.5	11	38	22	PT1/8"	82	
			5×1	5050	13340		96											101	
	12	6.35	2.5×1	3180	7780	64	86	104	18	84	20	11	17.5	11	38	22	PT1/8"	63	
			3.5×1	4130	10560		98											82	
			5×1	5050	13340		110											101	
	16	6.35	2.5×1	3180	7780	64	93	104	18	84	20	11	17.5	11	38	22	PT1/8"	63	
			3.5×1	4130	10560		109											82	
			5×1	5050	13340		125												101
	16	7.144	2.5×1	3740	8790	64	92	108	104	18	84	15	11	17.5	11	38	22	PT1/8"	65
			3.5×1	4870	11930		108												84
			5×1	5950	15070		124												103
	20	6.35	1.5×1	2180	5000	64	84	104	18	84	20	11	17.5	11	38	22	PT1/8"	43	
			2.5×1	3180	7780		104											63	
			3.5×1	4130	10560		124											82	
			5×1	5050	13340		144											101	
	40	6.35	1.5×1	2180	5000	64	130	104	18	84	20	11	17.5	11	38	22	PT1/8"	43	

FSVE



Unit: mm

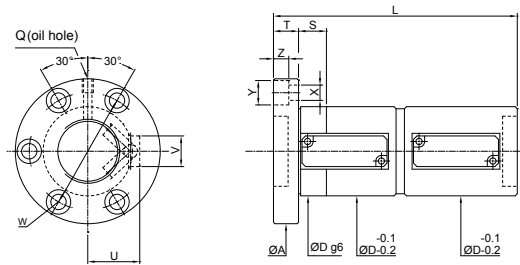
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT		OIL HOLE				RETURN TUBE		BOLT	STIFFNESS									
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm											
50	10	6.35	3.5×1	4560	13230	73	85	118	18	96	20	11	17.5	11	43	22	PT1/8"	97											
			5×1	5580	16710		95											119											
	12	6.35	2.5×1	3510	9750	73	82	118	18	96	20	11	17.5	11	43	22	PT1/8"	74											
			3.5×1	4560	13230		94											97											
	12	7.144	5×1	5580	16710	75	106	122	20	98	15	14	20	13	44	24	PT1/8"	119											
			2.5×1	4080	11260		93											75											
			3.5×1	5300	15280		105											99											
			5×1	6480	19300		117											121											
	16	6.35	2.5×1	3510	9750	73	94	110	118	18	96	20	11	17.5	11	43	22	PT1/8"	74										
			3.5×1	4560	13230		110												97										
			5×1	5580	16710		126												119										
			2.5×1	4080	11260		100												75										
	16	7.144	3.5×1	5300	15280	75	116	122	20	98	15	14	20	13	44	24	PT1/8"	99											
			5×1	6480	19300		132											121											
			1.5×1	2790	7240		75											98	122	20	98	15	14	20	13	44	20	PT1/8"	52
			2.5×1	4080	11260													118											75
3.5×1	5300	15280	138	99																									
20	7.144	5×1	6480	19300	75	158	122	20	98	15	14	20	13	44	20	PT1/8"	121												
		2.5×1	4750	12090		119											78												
		3.5×1	6180	16400		76											139	123	25	99	20	14	20	13	46	25	PT1/8"	101	
		5×1	7550	20720													159											124	
50	7.938	1.5×1	3250	7770	76	115	123	25	99	20	14	20	13	46	25	PT1/8"	53												



Unit: mm

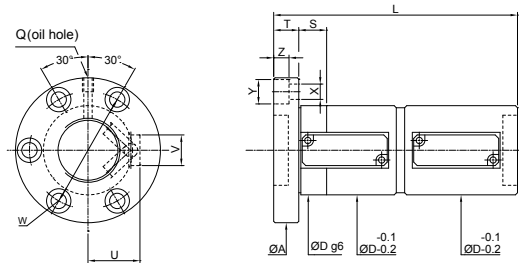
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT	OIL HOLE			RETURN TUBE		BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm
63	10	6.35	3.5×1	5030	17020	86	86	133	22	108	20	14	20	13	49	24	PT1/8"	115
			5×1	6150	1500	86	96											141
	12	6.35	2.5×1	3870	12540	84												87
			3.5×1	5030	17020	86	96	133	22	108	20	14	20	13	49	24	PT1/8"	115
	12	7.144	5×1	6150	1500	108												141
			2.5×1	4540	14460	90												89
	12	7.144	3.5×1	5900	7210	87	102	134	22	110	20	14	20	13	50	25	PT1/8"	117
			5×1	7210	24780	114												145
	16	7.144	2.5×1	4540	14460	97												89
			3.5×1	5900	7210	87	113	134	22	110	20	14	20	13	50	25	PT1/8"	117
	16	7.938	5×1	7210	24780	129												145
			2.5×1	5260	15430	112												91
80	10	6.35	3.5×1	6840	20940	89	128	148	28	118	25	18	26	17.5	52	25	PT1/8"	120
			5×1	8360	26450	144												147
	12	6.35	2.5×1	3870	12540	104												87
			3.5×1	5030	17020	86	124	133	22	108	20	14	20	13	49	24	PT1/8"	115
	12	6.35	5×1	6150	1500	144												141
			2.5×1	5260	15430	120												91
	12	7.938	3.5×1	6840	20940	89	140	148	28	118	25	18	26	17.5	52	25	PT1/8"	120
			5×1	8360	26450	160												147
	20	9.525	2.5×1	8870	25870	120												105
			3.5×1	11530	35110	93	140	152	28	122	25	18	26	17.5	54	28	PT1/8"	136
	20	9.525	5×1	14090	44350	160												167
			3.5×1	5030	17020	90												133
100	10	6.35	5×1	6150	1500	100												164
			3.5×1	7670	27030	101												143
	12	7.938	5×1	9380	34140	123	101	170	22	146	20	14	20	13	66	28	PT1/8"	177
			2.5×1	9400	33100	108												124
	16	9.525	3.5×1	12220	44920	126	124	185	28	155	30	18	26	17.5	70	28	PT1/8"	162
			5×1	14940	56740	140												201
	20	9.525	2.5×1	9400	33100	120												124
			3.5×1	12220	44920	126	140	185	28	155	30	18	26	17.5	70	28	PT1/8"	162
	20	9.525	5×1	14940	56740	160												201
	16	9.525	2.5×1	9990	33200	115												139
			3.5×1	12990	45050	146	131	217	32	181	30	22	32	21.5	82	35	PT1/8"	182
	20	9.525	5×1	15880	71320	147												226
			2.5×1	9990	33200	128												139
100	20	9.525	3.5×1	12990	45050	146	148	217	32	181	30	22	32	21.5	82	35	PT1/8"	182
			5×1	15880	71320	168												226

FDVE



Unit: mm

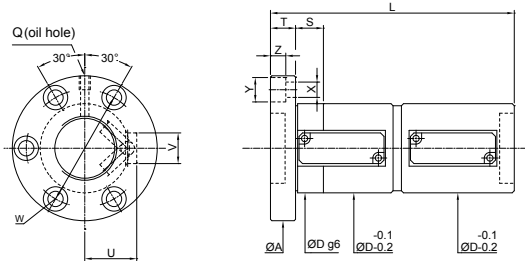
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE		FIT	OIL HOLE			RETURN TUBE		BOLT	STIFFNESS	
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm
12	10	2.381	2.5×1	420	720	25	102	48	10	36	10	4.5	8	4.4	14	12	M6×1P	30
20	10	3.969	2.5×1 3.5×1	1210 1580	2380 3230	38	113 133	62	13	50	10	5.5	9.5	5.5	23	15	M6×1P	51 68
	16	3.969	1.5×1 2.5×1	830 1210	1530 2380	38	128 160	62	13	50	10	5.5	9.5	5.5	23	15	M6×1P	35 51
	20	3.969	1.5×1	830	1530	38	130	62	13	50	10	5.5	9.5	5.5	23	15	M6×1P	35
	25	4.762	1.5×1 2.5×1 3.5×1	920 1340 1710 2220	1930 3000 3580 4860	42 44	126 158 194 234	68	15	55 59	15	6.6 6.6	11 11	6.6 6.5	26 27	14 16	M6×1P	41 61 63 83
32	16	3.969	1.5×1 2.5×1 3.5×1 5×1	1010 1470 1910 2340	2480 3860 5240 6610	49	130 162 194 226	78	15	63	15	6.6	11	6.6	29	15	M8×1P	49 73 96 120
	16	6.35	2.5×1 3.5×1 5×1	2830 3680 4490	8200 11120 14050	57	173 205 237	98	18	77	20	11	17.5	11	34	22	M8×1P	80 105 131
	20	3.969	1.5×1 2.5×1 3.5×1 5×1	1010 1470 1910 2350	2480 3860 5240 6610	49	133 173 213 253	78	15	63	15	6.6	11	6.6	29	15	M8×1P	49 73 96 120
	20	6.35	2.5×1 3.5×1 5×1	2830 3680 4490	8200 11120 14050	57	204 244 284	98	18	77	20	11	17.5	11	34	22	M8×1P	80 105 131



Unit: mm

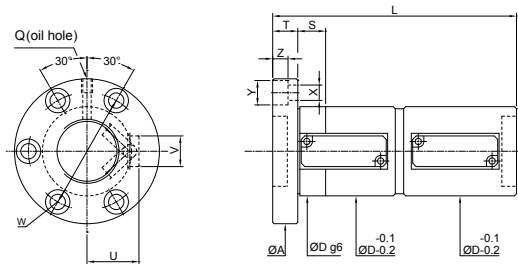
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD (kgf)		NUT		FLANGE			FIT		OIL HOLE		RETURN TUBE		BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm
36	10	6.35	3.5×1	3890	9390	60	155	100	18	80	20	11	17.5	11	36	22	M8×1P	115
			5×1	4750	11860		175											143
	12	6.35	2.5×1	2990	6920	60	152	100	18	80	20	11	17.5	11	36	22	M8×1P	88
			3.5×1	3890	9390		176											115
			5×1	4750	11860	60	200	100	18	80	20	11	17.5	11	36	22	M8×1P	143
			2.5×1	2990	6920		173											88
	16	6.35	3.5×1	3890	9390	60	205	100	18	80	20	11	17.5	11	36	22	M8×1P	115
			5×1	4750	11860		237											143
	20	6.35	1.5×1	2050	4450	60	164	100	18	80	20	11	17.5	11	36	22	M8×1P	59
			2.5×1	2990	6920		204											88
			3.5×1	3890	9390		244											115
			5×1	4750	11860		284											143
40	10	6.35	3.5×1	4130	10560	64	155	104	18	84	20	11	17.5	11	38	22	PT1/8"	125
			5×1	5050	13340		175											155
			2.5×1	3180	7780	64	141	104	18	84	20	11	17.5	11	38	22	PT1/8"	95
			3.5×1	4130	10560		165											125
			5×1	5050	13340	64	189	104	18	84	20	11	17.5	11	38	22	PT1/8"	155
			2.5×1	3180	7780		173											95
	16	6.35	3.5×1	4130	10560	64	205	104	18	84	20	11	17.5	11	38	22	PT1/8"	125
			5×1	5050	13340		237											155
	16	7.144	2.5×1	3740	8790	64	173	104	18	84	15	11	17.5	11	38	22	PT1/8"	98
			3.5×1	4870	11930		205											128
			5×1	5950	15070		237											159
			1.5×1	2180	5000		164											64
	20	6.35	2.5×1	3180	7780	64	204	104	18	84	20	11	17.5	11	38	22	PT1/8"	95
			3.5×1	4130	10560		244											125
			5×1	5050	13340		284											155
			1.5×1	2180	5000		164											64
	40	6.35	1.5×1	2180	5000	64	242	104	18	84	20	11	17.5	11	38	22	PT1/8"	64

FDVE



Unit: mm

SCREW SIZE		BALL	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE		FIT	OIL HOLE		RETURN TUBE		BOLT	STIFFNESS			
O.D.	LEAD	DIA.		Dynamic (1×10 ⁶ REV.) Ca	Static 13230 Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	kgf/μm	
50	10	6.35	3.5×1	4560	13230	73	155	118	18	96	20	11	17.5	11	43	22	PT1/8"	149	
			5×1	5580	16710		175											185	
	12	6.35	2.5×1	3510	9750	152	73	176	118	18	96	20	11	17.5	11	43	22	PT1/8"	112
			3.5×1	4560	13230	200													149
			5×1	5580	16710													185	
	12	7.144	2.5×1	4080	11260	161	75	185	122	20	98	15	14	20	13	44	24	PT1/8"	114
			3.5×1	5300	15280	209													151
			5×1	6480	19300														187
	16	6.35	2.5×1	3510	9750	174	73	206	118	18	96	20	11	17.5	11	43	22	PT1/8"	112
			3.5×1	4560	13230	238													149
			5×1	5580	16710														185
	16	7.144	2.5×1	4080	11260	180	75	212	122	20	98	15	14	20	13	44	24	PT1/8"	114
			3.5×1	5300	15280	244													151
			5×1	6480	19300														187
	20	7.144	1.5×1	2790	7240	179	75	219	122	20	98	15	14	20	13	44	20	PT1/8"	77
			2.5×1	4080	11260	259													114
			3.5×1	5300	15280	299													151
			5×1	6480	19300														187
20	7.938	2.5×1	4750	12090	219	76	259	123	25	99	20	14	20	13	46	25	PT1/8"	117	
		3.5×1	6180	16400	299													154	
		5×1	7550	20720														191	
50	7.938	1.5×1	3250	7770	76	305	123	25	99	20	14	20	13	46	25	PT1/8"	79		



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT	OIL HOLE			RETURN TUBE		BOLT	STIFFNESS
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	X	Y	Z	U	V	Q	
63	10	6.35	3.5×1	5030	17020	86	155	133	22	108	20	14	20	13	49	24	PT1/8"	178
			5×1	6150	1500		175											220
	12	6.35	2.5×1	3870	12540		153											134
			3.5×1	5030	17020	86	177	133	22	108	20	14	20	13	49	24	PT1/8"	178
			5×1	6150	1500		201											220
	12	7.144	2.5×1	4540	14460		158											136
			3.5×1	5900	7210	87	182	134	22	110	20	14	20	13	50	25	PT1/8"	180
			5×1	7210	24780		206											224
	16	7.144	2.5×1	4540	14460		177											139
			3.5×1	5900	7210	87	209	134	22	110	20	14	20	13	50	25	PT1/8"	184
			5×1	7210	24780		241											228
	16	7.938	2.5×1	5260	15430		207											134
			3.5×1	6840	20940	89	239	148	28	118	25	18	26	17.5	52	25	PT1/8"	178
			5×1	8360	26450		271											220
	20	6.35	2.5×1	3870	12540		205											134
			3.5×1	5030	17020	86	245	133	22	108	20	14	20	13	49	24	PT1/8"	178
			5×1	6150	1500		285											220
80			2.5×1	5260	15430		221											139
			3.5×1	6840	20940	89	261	148	28	118	25	18	26	17.5	52	25	PT1/8"	184
			5×1	8360	26450		301											228
	20	9.525	2.5×1	8870	25870		219											158
			3.5×1	11530	35110	93	259	152	28	122	25	18	26	17.5	54	28	PT1/8"	208
			5×1	14090	44350		299											258
	10	6.35	3.5×1	5030	17020	103	159	150	22	126	20	14	20	13	58	25	PT1/8"	207
			5×1	6150	1500		179											256
	12	7.938	3.5×1	7670	27030		184											222
			5×1	9380	34140	123	208	170	22	146	20	14	20	13	66	28	PT1/8"	275
			2.5×1	9400	33100		188											189
	16	9.525	3.5×1	12220	44920	126	220	185	28	155	30	18	26	17.5	70	28	PT1/8"	251
			5×1	14940	56740		252											311
			2.5×1	9400	33100		220											189
	20	9.525	3.5×1	12220	44920	126	260	185	28	155	30	18	26	17.5	70	28	PT1/8"	251
			5×1	14940	56740		300											311
100	16	9.525	2.5×1	9990	33200		211											213
			3.5×1	12990	45050	146	243	217	32	181	30	22	32	21.5	82	35	PT1/8"	283
			5×1	15880	71320		259											351
	20	9.525	2.5×1	9990	33200		228											213
			3.5×1	12990	45050	146	268	217	32	181	30	22	32	21.5	82	35	PT1/8"	283
			5×1	15880	71320		308											351

13.5 Ballscrews For Heavy Load

Features

Focused on improvements of contact points of balls and thread grooves, ball diameter and circulation system for new type, FSVH. The rated dynamic load has been increased to as two times as that of conventional type, F SVC.

Long Life

Structure of the newly developed circulation system is designed to distribute the load uniformly to the load balls and it also increases the life of ballscrews.

On conventional circulation system, F SVC, the returning tube is inserted into the holes on ballnut perpendicularly which forms an advancing angle. While ball moves into returning tube, it will hit tube end area and then move into returning tube.

New circulation system, FSVH, ball will move into returning tube smoothly by tangent line as the same direction as lead angle. It can increase the life of circulation system structure.

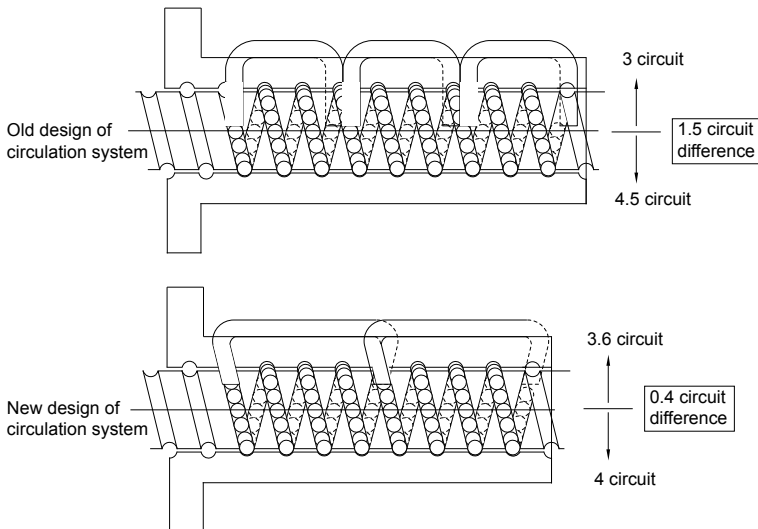


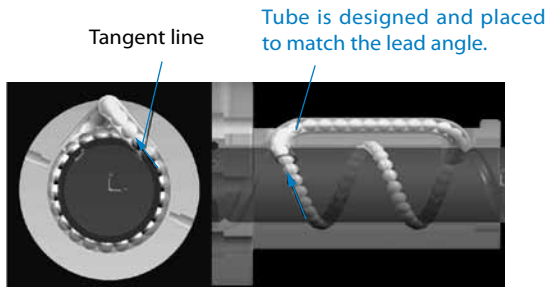
Fig.13.4 Circuit difference for heavy load ballscrew

High DN Value

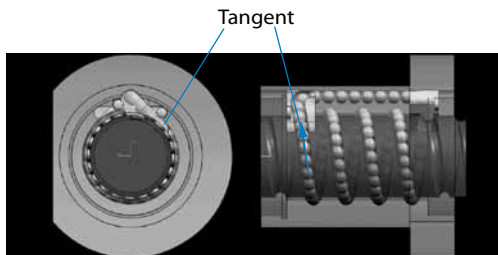
With the newly developed circulation system, ballscrews can meet the demands of high speed running with high DN value.

Low Noise

To use tangential circulation system structure, it can eliminate the noise while balls run into the returning tube.

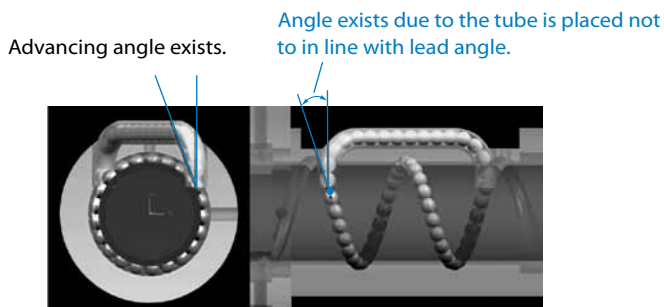


FSVH circulation system structure(NEW)



FSDH circulation system structure (NEW)

Fig.13.5 Circulation system structure for FSVH and FSDH



FSVC circulation system structure

Fig.13.6 Circulation systwm structure for FSV

Various Specifications Combination

PMI can supply various ballscrews with diameter 40~120mm and lead 10mm to 60mm (Please contact *PMI* for your specific design requirement)

Recommend mounting direction of heavy load ball screws

In order to support equal load distribution for shaft and nut, recommend mounting direction of ball screws allow fig. 13.4. This mounting direction can avoided vibration as axial load uneven distribution for ball screws, therefore increase service life efficient.

Application

Plastic Injection Machines / Press and Forging Machines
Semi-conductor Equipments / General Machines

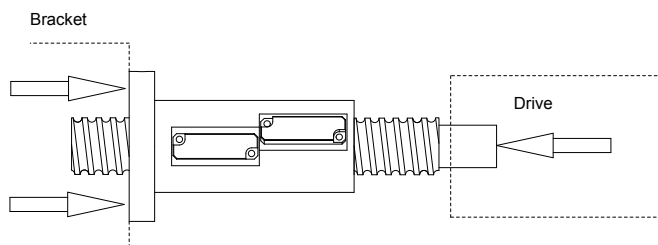


Fig.13.7 Recommend mounion direction of heavy load ballscrew

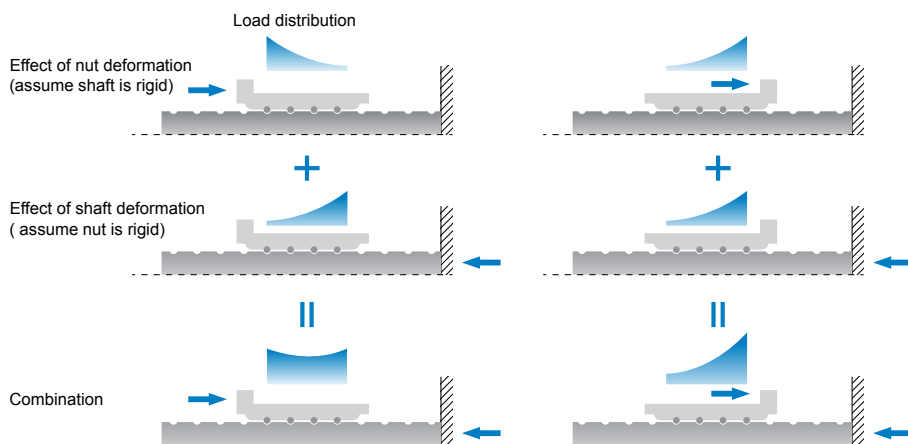
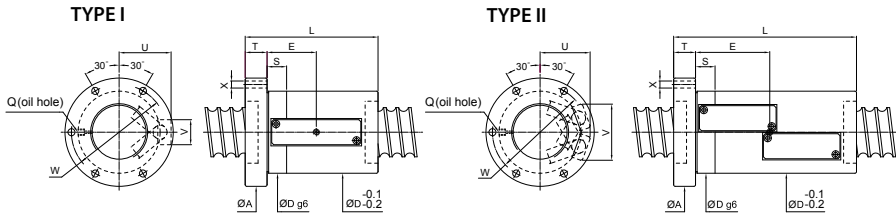


Fig.13.8 Load distribution

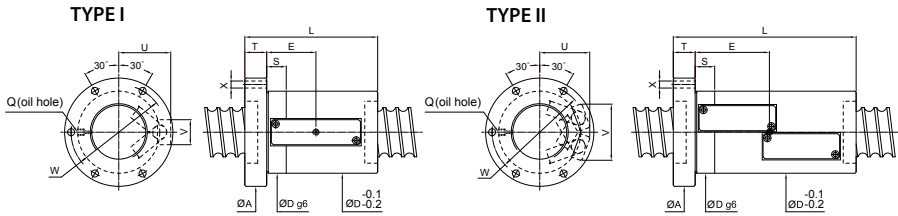
FSVH



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE		NUT		FLANGE			FIT	OIL HOLE		BOLT	RETURN TUB		Type
O.D.	LEAD			LOAD(kgf)													
						Dg6	L	A	T	W	S	Q	E	X	V	U	
40	10	7.938	3.5×2	15000	41800	66	124	98	18	83	20	M6x1P	50.75	9	51	43	II
	12	9.525	3.5×2	18600	48200	70	156	93	18	86	20	M6x1P	58	9	55	45	II
45	10	7.938	3.5×2	15900	47300	70	134	104	18	87	20	M6x1P	54.2	9	54	45	II
50	10	7.938	3.5×2	16700	52900	77	133	109	18	92	20	M6x1P	53.7	9	60	48	II
	16	12.7	6×1	24800	63700	95	168	128	28	112	20	PT1/8"	70.5	9	32	60	I
	12.7	3.5×2	31200	83500	200		128	28	112	20	86		9	72	62	II	
	20	12.7	3.5×2	31200	84800	95	235	128	28	112	20	PT1/8"	97	9	72	62	II
55	10	7.938	3.5×2	17500	58500	80	153	114	28	97	20	PT1/8"	62.1	9	61	49	II
	16	12.7	6×1	25800	71800	100	168	133	28	115	20	PT1/8"	69.5	9	32	63	I
			3.5×2	32600	94000	100	200	133	28	115	20		84.5	9	77	64	II
63	16	12.7	6×1	27800	81700	105	168	138	28	122	25	PT1/8"	65.25	9	32	66	I
			3.5×2	35000	107000	105	202	138	28	122	25		82.25	9	80	67	II
			6×2	50300	164000	105	266	138	28	122	25		114.25	9	80	67	II
	20	15.875	2.5×2	35900	99300	117	210	157	32	137	25	PT1/8"	96	11	88	74	II
			3.5×2	46600	134700	117	246	157	32	137	25		105.5	11	88	74	II
	25	15.875	2.5×2	35900	99300	117	235	157	32	137	25	PT1/8"	91	11	86	75	II
80	16	12.7	6×1	30900	104400	120	172	158	32	139	25	PT1/8"	66	9	36	73	I
			3.5×2	39000	136700	120	205	158	32	139	25		84	9	89	74	II
			6×2	56000	208700	120	275	158	32	139	25		122	9	89	74	II
	20	15.875	2.5×2	40100	127000	130	210	168	32	150	25	PT1/8"	87.5	11	90	83	II
			3.5×2	52100	172400	130	250	168	32	150	25		107.5	11	90	83	II
			6×2	75000	263200	130	330	168	32	150	30		147.5	11	90	83	II
	25	19.05	3.5×2	67700	206100	145	305	188	40	165	25	PT1/8"	119	11	108	94	II
			6×2	97200	314600	145	402	188	40	165	30		169	11	108	94	II

FSVH

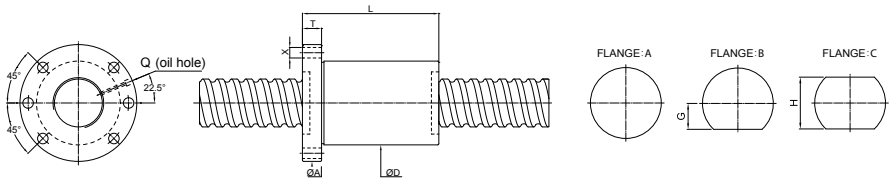


Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		NUT		FLANGE			FIT	OIL HOLE		BOLT	RETURN TUB		Type
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	Dg6	L	A	T	W	S	Q	E	X	V	U	
100	16	12.7	6×1	34200	133200	145	172	185	32	165	25		63.5	11	38	85	I
			3.5×2	43200	174500	145	205	185	32	165	25	PT1/8"	79.5	11	98	85	II
			6×2	62000	266300	145	275	185	32	165	25		117.5	11	98	85	II
	20	15.875	2.5×2	44800	160900	150	205	194	32	172	30		82	11	107	92	II
			3.5×2	58300	218400	150	245	194	32	172	30	PT1/8"	102	11	107	92	II
			6×2	83800	333300	150	330	194	32	172	30		147	11	107	92	II
120	16	12.7	3.5×2	74900	260200	165	305	218	40	190	30	PT1/8"	122	11	111	102	II
			6×2	107700	397100	165	410	218	40	190	30		177	11	111	102	II
	20	15.875	6×1	34100	130200	173	205	213	40	193	30		84	11	38	93	I
			3.5×2	43000	170700	173	230	213	40	193	30	PT1/8"	101	11	108	94	II
			6×1	46000	160800	173	222	213	40	193	30		95	11	54	100	I
			3.5×2	58100	210700	173	260	213	40	193	30	PT1/8"	116	11	121	104	II
	25	19.0	6×1	59200	194500	173	261	213	40	193	30		109.5	11	50	106	I
			3.5×2	74700	254800	173	314	213	40	193	30	PT1/8"	135.5	11	129	109	II

13.6 Heavy Load Series of End Deflector

FSDH

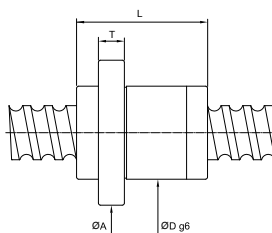
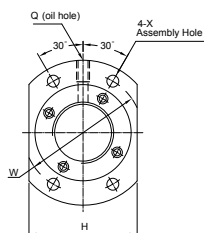


Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × number of thread	BASIC RATE LOAD(kgf)		NUT		FLANGE					OIL HOLE	BOLT
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	D6	L	A	T	W	G		Q	X
45	12	9.525	5×1	13600	35400	84	98	128	24	106	57		PT1/8"	14
	16	9.525	5×1	13500	35300	84	122	128	24	106	57		PT1/8"	14
	20	9.525	4×1	11000	27900	84	122	128	24	106	57		PT1/8"	14
50	16	12.7	5×1	21100	53700	102	125	146	28	124	65		PT1/8"	14
	20	12.7	4×1	17200	42400	102	124	146	28	124	65		PT1/8"	14
	40	12.7	3×2	23400	61200	102	163	146	28	124	65		PT1/8"	14
63	32	15.875	4×1	25500	66000	126	176	182	32	154	81		PT1/8"	18
	40	15.875	3×2	35300	96600	126	169	182	32	154	81		PT1/8"	18
80	50	19.05	4×2	66600	204000	155	255	224	40	190	100		PT1/8"	22
100	60	19.05	4×2	73400	251500	175	295	244	40	210	100		PT1/8"	22

13.7 End Cap Series

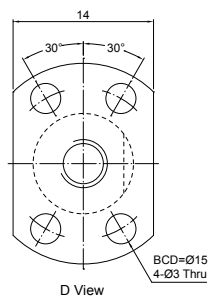
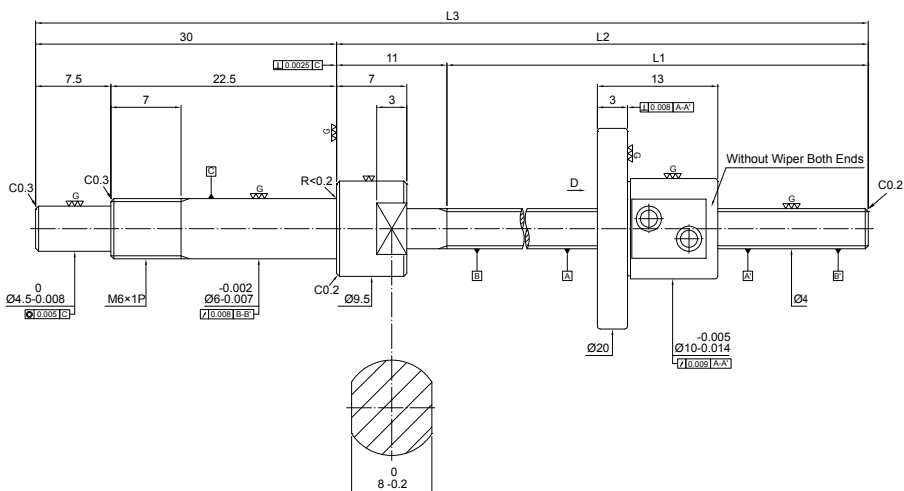
FSKC



Unit: mm

SCREW SIZE		BALL DIA	EFFECTIVE TURNS circuit × number of thread	BASIC RATE LOAD(kgf)		BALLNUT DIMENSION								
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	NUT		FLANGE				BOLT X	OIL HOLE Q	STIFFNESS kgf/μm
						Dg6	L	A	T	H	W			
15	10	3.715	2.8×2	1410	2800	34	44	57	10	40	45	5.5	M6×1P	34
16	16	3.175	1.8×2	700	1400	32	38	53	10	38	42	4.5	M6×1P	18
20	20	3.175	1.8×2	1100	2500	39	52	62	10	46	50	5.5	M6×1P	29
25	25	3.969	1.8×2	1650	3900	47	62	74	12	56	60	6.6	M6×1P	35
			1.8×4	2830	7800									69
32	32	4.762	1.8×2	2360	5940	58	78	92	15	68	74	9	M6×1P	44
			1.8×4	4280	11800									87
36	24	7.144	2.8×2	6450	15220	75	94	115	18	86	94	11	M6×1P	77
40	40	6.35	1.8×2	3860	9900	73	95	114	17	84	93	11	M6×1P	55
			1.8×4	7000	19880									108
50	50	7.938	1.8×2	5800	15800	90	120	135	20	104	112	14	M6×1P	68
			1.8×4	10520	31600									135

13.8 Miniature Series

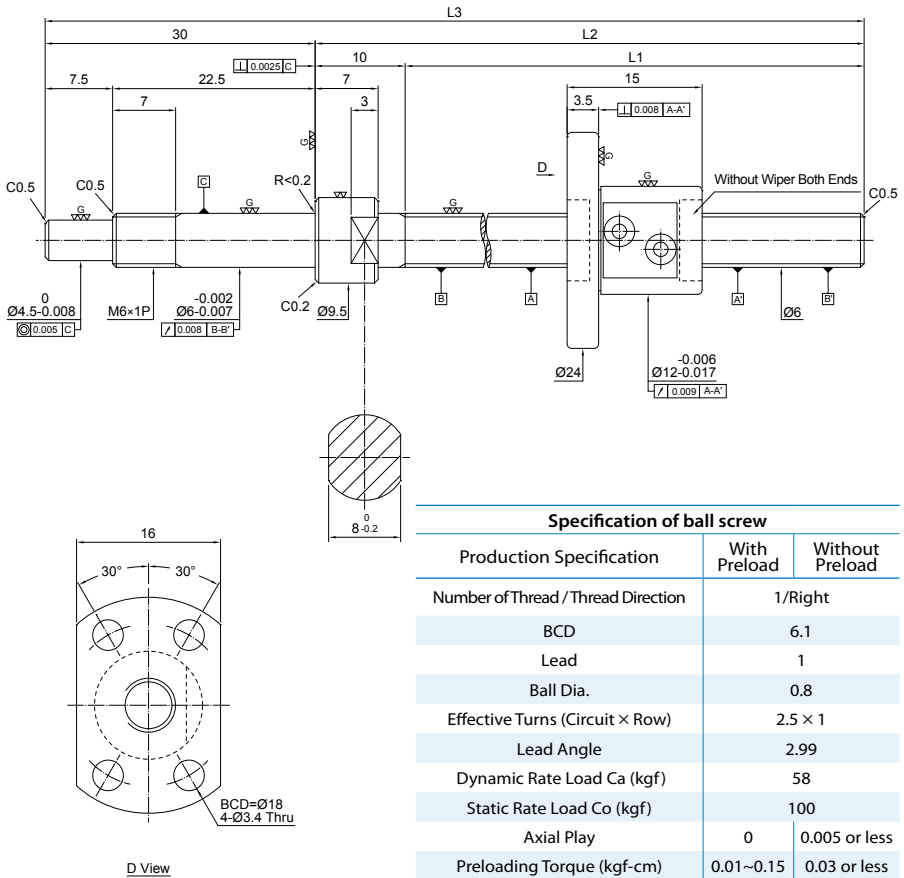


Specification of ball screw

Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	4.1	
Lead	1	
Ball Dia.	0.8	
Effective Turns (Circuit × Row)	2.5 × 1	
Lead Angle	4.44	
Dynamic Rate Load Ca (kgf)	49	
Static Rate Load Co (kgf)	70	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.01~0.1	0.03 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length			Accuracy Grade	Lead Accuracy		
	L1	L2	L3		Specified Travel (T)	Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
FSM0401-C3-1R-0085	44	55	85	3	0	0.012	0.008
FSM0401-C3-1R-0105	64	75	105	3	0	0.012	0.008
FSM0401-C3-1R-0135	94	105	135	3	0	0.012	0.008

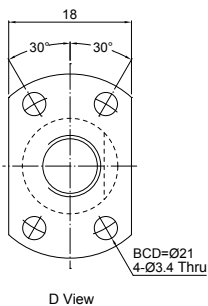
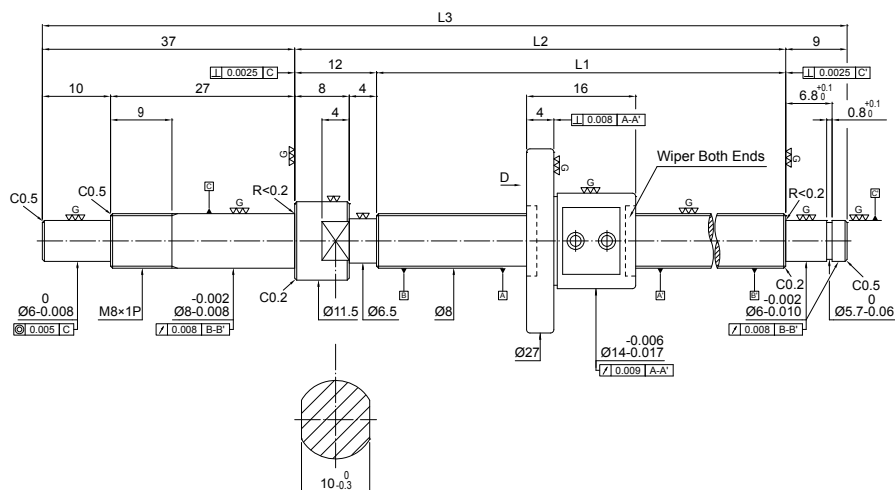


Unit: mm

Model No.	Screw Spindle (Shaft) Length			Accuracy Grade	Lead Accuracy		
	L1	L2	L3		Specified Travel (T)	Accumulated reference lead deviation E	Lead Derivation in random 300mm E_{300}
FSM0601-C3-1R-0105	65	75	105	3	0	0.012	0.008
FSM0601-C3-1R-0135	95	105	135	3	0	0.012	0.008
FSM0601-C3-1R-0165	125	135	165	3	0	0.012	0.008

FSMC Miniature Ballscrews

Screw Dia.Ø8 Lead01

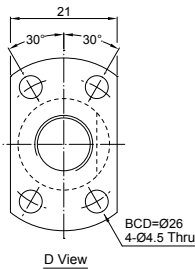
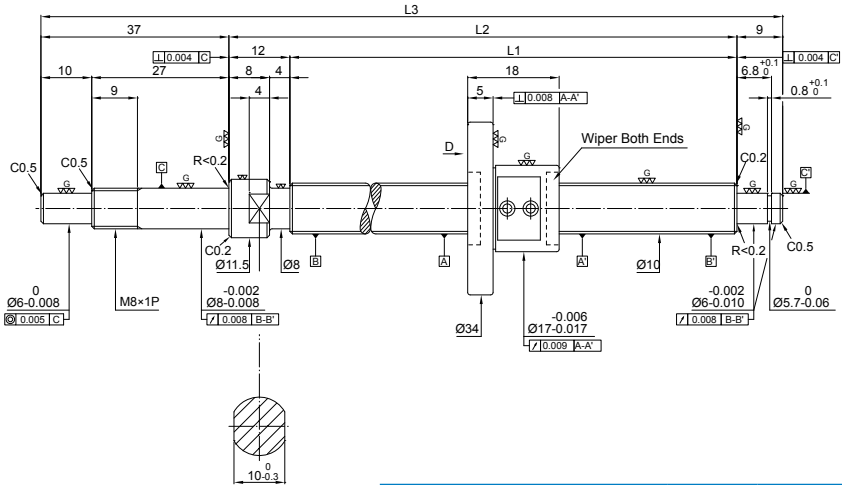


Specification of ball screw

Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	8.1	
Lead	1	
Ball Dia.	0.8	
Effective Turns (Circuit × Row)	2.5 × 1	
Lead Angle	2.25	
Dynamic Rate Load Ca (kgf)	66	
Static Rate Load Co (kgf)	140	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.01~0.2	0.05 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length			Accuracy Grade	Lead Accuracy		
	L1	L2	L3		Specified Travel (T)	Accumulated reference lead deviation E	Lead Derivation in random 300mm e_{300}
FSM0801-C3-1R-0138	80	92	138	3	0	0.012	0.008
FSM0801-C3-1R-0168	110	122	168	3	0	0.012	0.008
FSM0801-C3-1R-0198	140	152	198	3	0	0.012	0.008
FSM0801-C3-1R-0248	190	202	248	3	0	0.012	0.008



Specification of ball screw

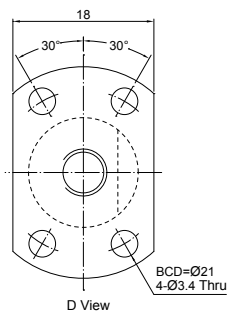
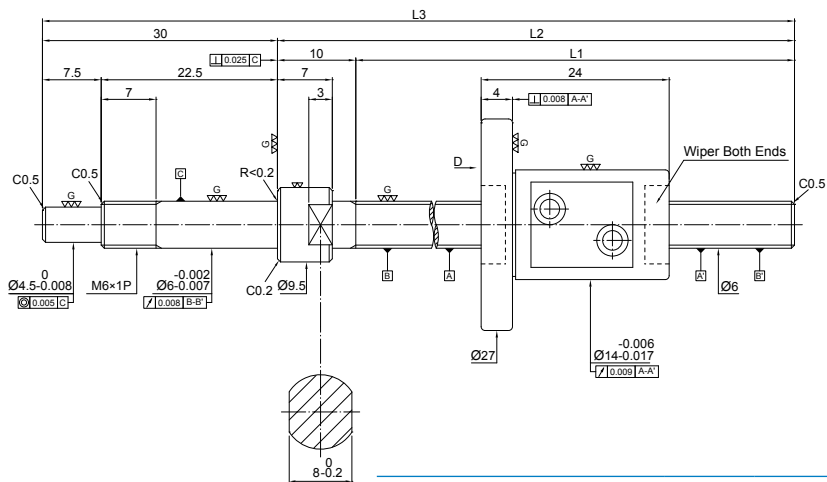
Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	10.1	
Lead	1	
Ball Dia.	0.8	
Effective Turns (Circuit × Row)	2.5 × 1	
Lead Angle	1.8	
Dynamic Rate Load Ca (kgf)	73	
Static Rate Load Co (kgf)	180	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.01~0.3	0.05 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length			Accuracy Grade	Lead Accuracy		
	L1	L2	L3		Specified Travel (T)	Accumulated reference lead deviation E	Lead Derivation in random 300mm e_{300}
FSM1001-C3-1R-0168	110	122	168	3	0	0.012	0.008
FSM1001-C3-1R-0218	160	172	218	3	0	0.012	0.008
FSM1001-C3-1R-0268	210	222	268	3	0	0.012	0.008
FSM1001-C3-1R-0318	260	272	318	3	0	0.012	0.008
FSM1001-C3-1R-0368	310	322	368	3	0	0.013	0.008

FSMC

Miniature Ballscrews
Screw Dia.Ø6 Lead02

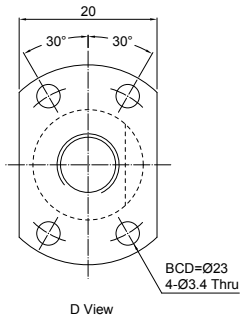
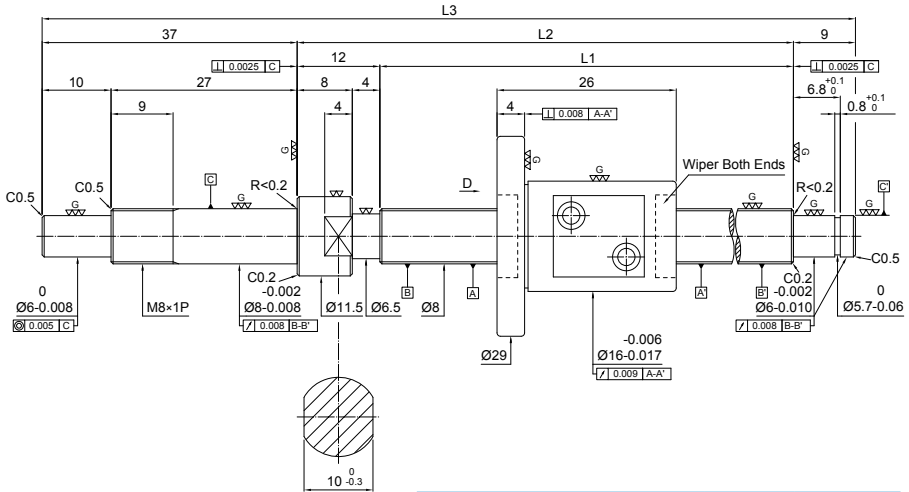


Specification of ball screw

Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	6.3	
Lead	2	
Ball Dia.	1.588	
Effective Turns (Circuit × Row)	2.5 × 1	
Lead Angle	5.77	
Dynamic Rate Load Ca (kgf)	160	
Static Rate Load Co (kgf)	210	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.01~0.2	0.05 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length			Accuracy Grade	Lead Accuracy		
	L1	L2	L3		Specified Travel (T)	Accumulated reference lead deviation E	Lead Derivation in random 300mm e_{300}
FSM0602-C3-1R-0105	65	75	105	3	0	0.012	0.008
FSM0602-C3-1R-0135	95	105	135	3	0	0.012	0.008
FSM0602-C3-1R-0165	125	135	165	3	0	0.012	0.008

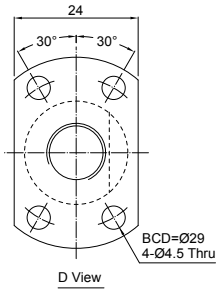
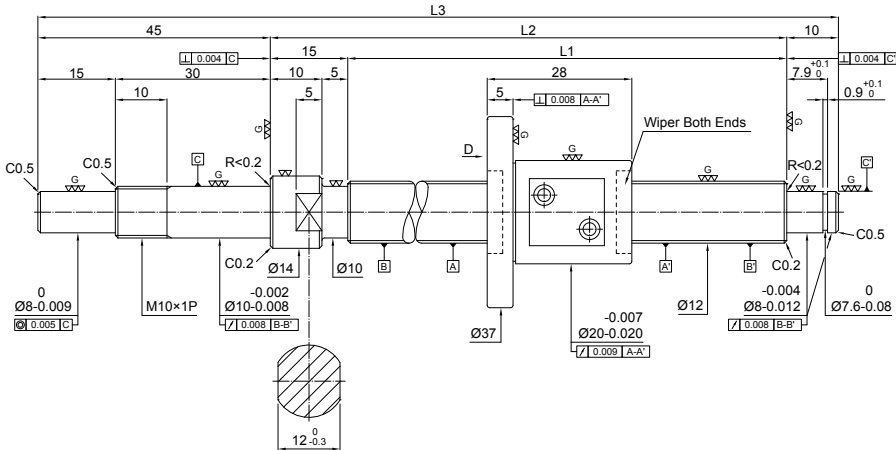


Specification of ball screw

Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	8.3	
Lead	2	
Ball Dia.	1.588	
Effective Turns (Circuit × Row)	2.5 × 1	
Lead Angle	4.39	
Dynamic Rate Load Ca (kgf)	190	
Static Rate Load Co (kgf)	290	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.01~0.2	0.05 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length			Accuracy Grade	Lead Accuracy		
	L1	L2	L3		Specified Travel (T)	Accumulated reference lead deviation E	Lead Derivation in random 300mm e_{300}
FSM0802-C3-1R-0138	80	92	138	3	0	0.012	0.008
FSM0802-C3-1R-0168	110	122	168	3	0	0.012	0.008
FSM0802-C3-1R-0198	140	152	198	3	0	0.012	0.008
FSM0802-C3-1R-0248	190	202	248	3	0	0.012	0.008



Specification of ball screw

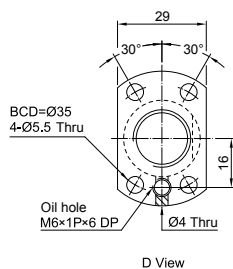
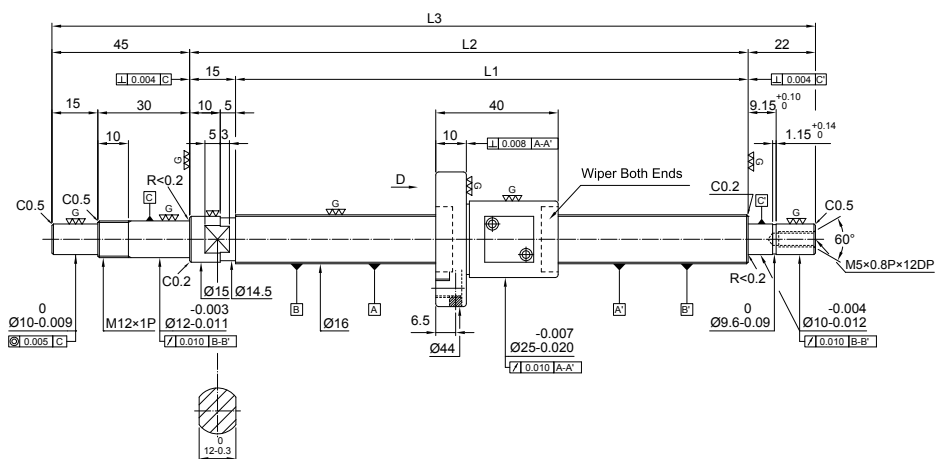
Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	12.3	
Lead	2	
Ball Dia.	1.588	
Effective Turns (Circuit × Row)	2.5 × 1	
Lead Angle	2.96	
Dynamic Rate Load Ca (kgf)	240	
Static Rate Load Co (kgf)	450	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.04~0.4	0.1 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length			Accuracy Grade	Lead Accuracy		
	L1	L2	L3		Specified Travel (T)	Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
FSM1202-C3-1R-0180	110	125	180	3	0	0.012	0.008
FSM1202-C3-1R-0230	160	175	230	3	0	0.012	0.008
FSM1202-C3-1R-0280	210	225	280	3	0	0.012	0.008
FSM1202-C3-1R-0330	260	275	330	3	0	0.012	0.008
FSM1202-C3-1R-0380	310	325	380	3	0	0.012	0.008

FSMC Miniature Ballscrews

Screw Dia.Ø16 Lead02

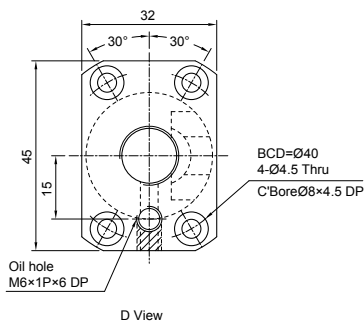


Specification of ball screw

Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	16.3	
Lead	2	
Ball Dia.	1.588	
Effective Turns (Circuit × Row)	3.5 × 1	
Lead Angle	2.24	
Dynamic Rate Load Ca (kgf)	360	
Static Rate Load Co (kgf)	850	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.05~0.5	0.15 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length			Accuracy Grade	Lead Accuracy		
	L1	L2	L3		Specified Travel (T)	Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
FSM1602-C3-1R-0221	139	154	221	3	0	0.012	0.008
FSM1602-C3-1R-0271	189	204	271	3	0	0.012	0.008
FSM1602-C3-1R-0321	239	254	321	3	0	0.012	0.008
FSM1602-C3-1R-0371	289	304	371	3	0	0.012	0.008
FSM1602-C3-1R-0471	389	404	471	3	0	0.013	0.008



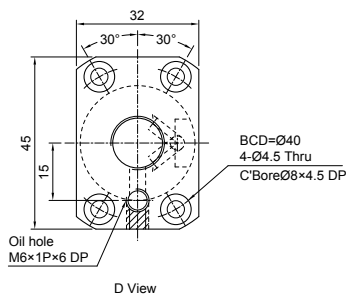
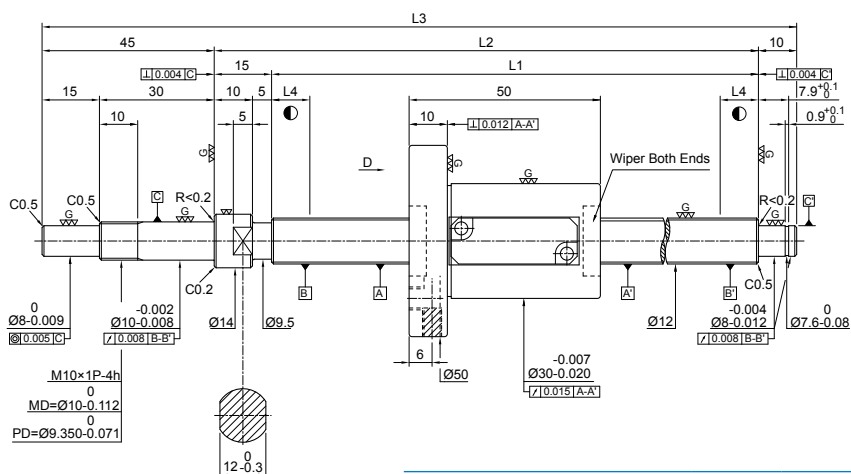
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Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	12.4	
Lead	5	
Ball Dia.	2.381	
Effective Turns (Circuit × Row)	2.5 × 1	
Lead Angle	7.31	
Dynamic Rate Load Ca (kgf)	380	
Static Rate Load Co (kgf)	640	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.01~0.45	0.1 or less

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R12-05B1-FSWC-110-180-0.008	110	125	180	10	3	0.012	0.008
1R12-05B1-FSWC-160-230-0.008	160	175	230	10	3	0.012	0.008
1R12-05B1-FSWC-210-280-0.008	210	225	280	10	3	0.012	0.008
1R12-05B1-FSWC-260-330-0.008	260	275	330	10	3	0.012	0.008
1R12-05B1-FSWC-310-380-0.008	310	325	380	10	3	0.012	0.008
1R12-05B1-FSWC-410-480-0.008	410	425	480	15	3	0.013	0.008
1R12-05B1-FSWC-510-580-0.008	510	525	580	15	3	0.015	0.008

FSWE

Standard ballscrews
Screw Dia. Ø12 Lead 10

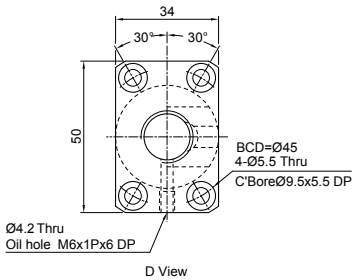


Specification of ball screw

Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	12.4	
Lead	10	
Ball Dia.	2.381	
Effective Turns (Circuit × Row)	2.5 × 1	
Lead Angle	14.4	
Dynamic Rate Load Ca (kgf)	420	
Static Rate Load Co (kgf)	720	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.1~0.5	0.1 or less

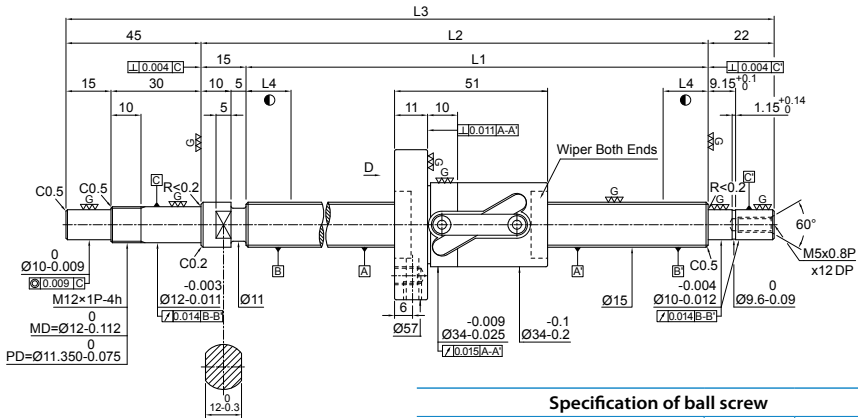
Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
1R12-10B1-FSWE-160-230-0.008	160	175	230	10	3	0.012	0.008
1R12-10B1-FSWE-210-280-0.008	210	225	280	10	3	0.012	0.008
1R12-10B1-FSWE-310-380-0.008	310	325	380	15	3	0.012	0.008
1R12-10B1-FSWE-410-480-0.008	410	425	480	15	3	0.013	0.008
1R12-10B1-FSWE-510-580-0.008	510	525	580	15	3	0.015	0.008



Specification of ball screw		
Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	14.6	
Lead	5	
Ball Dia.	3.175	
Effective Turns (Circuit × Row)	2.5 × 1	
Lead Angle	6.22	
Dynamic Rate Load Ca (kgf)	675	
Static Rate Load Co (kgf)	1145	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.15~0.7	0.2 or less

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R14-05B1-FSWC-189-271-0.008	189	204	271	10	3	0.012	0.008
1R14-05B1-FSWC-239-321-0.008	239	254	321	10	3	0.012	0.008
1R14-05B1-FSWC-339-421-0.008	339	954	421	15	3	0.012	0.008
1R14-05B1-FSWC-439-521-0.008	439	454	521	15	3	0.012	0.008
1R14-05B1-FSWC-539-621-0.008	539	554	621	15	3	0.012	0.008
1R14-05B1-FSWC-689-771-0.008	689	704	771	15	3	0.013	0.008



Specification of ball screw

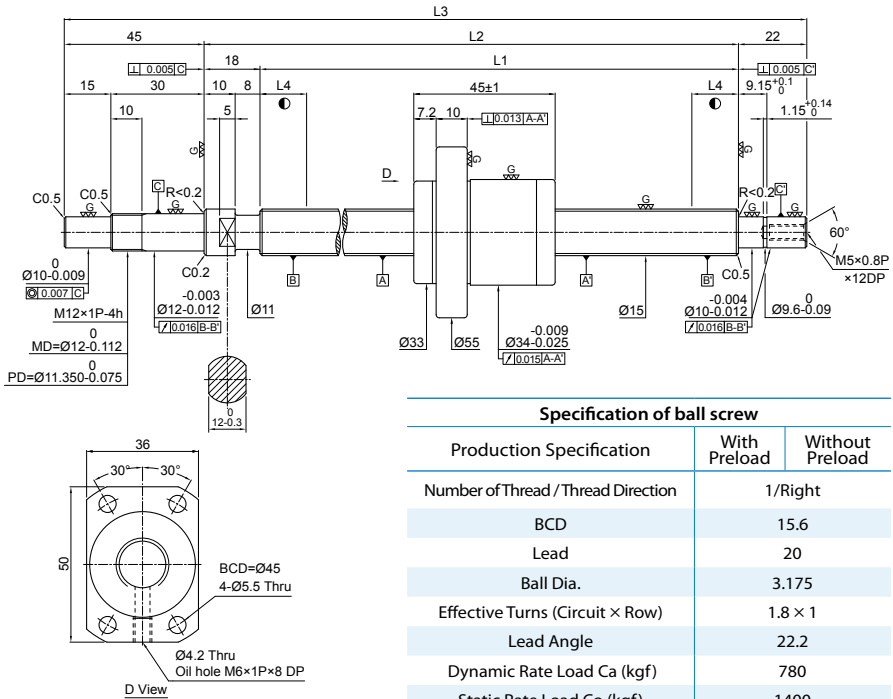
Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	15.6	
Lead	10	
Ball Dia.	3.175	
Effective Turns (Circuit $\times$ Row)	2.5 $\times$ 1	
Lead Angle	11.53	
Dynamic Rate Load Ca (kgf)	680	
Static Rate Load Co (kgf)	1210	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.1~0.79	0.24 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm E_{300}
1R15-10B1-FSWC-539-621-0.018	539	554	621	15	5	0.027	0.018
1R15-10B1-FSWC-589-671-0.018	589	604	671	15	5	0.030	0.018
1R15-10B1-FSWC-639-721-0.018	639	654	721	15	5	0.030	0.018
1R15-10B1-FSWC-689-771-0.018	689	704	771	15	5	0.035	0.018
1R15-10B1-FSWC-789-871-0.018	789	804	871	15	5	0.035	0.018
1R15-10B1-FSWC-889-971-0.018	889	904	971	15	5	0.040	0.018
1R15-10B1-FSWC-1089-1171-0.018	1089	1104	1171	15	5	0.046	0.018

FSKC

Standard ballscrews
Screw Dia. Ø15 Lead 20

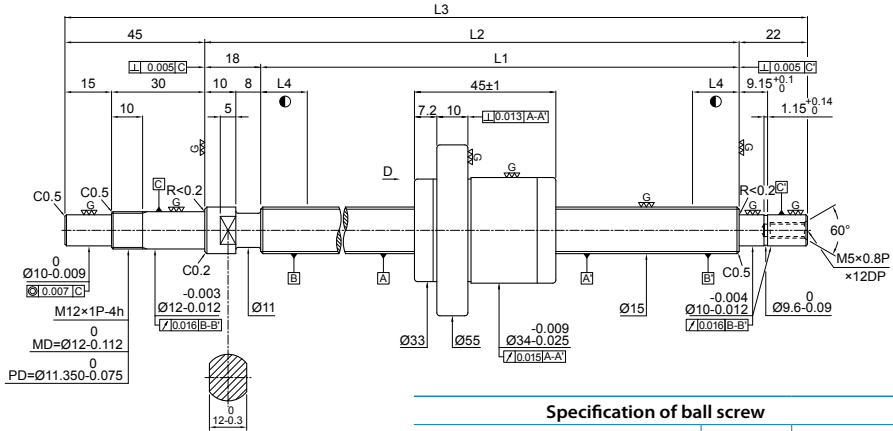


Specification of ball screw

Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	15.6	
Lead	20	
Ball Dia.	3.175	
Effective Turns (Circuit × Row)	1.8 × 1	
Lead Angle	22.2	
Dynamic Rate Load Ca (kgf)	780	
Static Rate Load Co (kgf)	1400	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.15~0.8	0.24 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
1R15-20A1-FSKC-186-271-0.018	186	204	271	10	5	0.023	0.018
1R15-20A1-FSKC-236-321-0.018	236	254	321	10	5	0.023	0.018
1R15-20A1-FSKC-286-371-0.018	286	304	371	15	5	0.023	0.018
1R15-20A1-FSKC-336-421-0.018	336	354	421	15	5	0.023	0.018
1R15-20A1-FSKC-386-471-0.018	386	404	471	15	5	0.025	0.018
1R15-20A1-FSKC-436-521-0.018	436	454	521	15	5	0.025	0.018
1R15-20A1-FSKC-486-571-0.018	486	504	571	15	5	0.027	0.018



Specification of ball screw

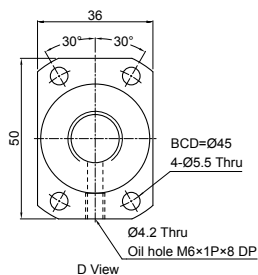
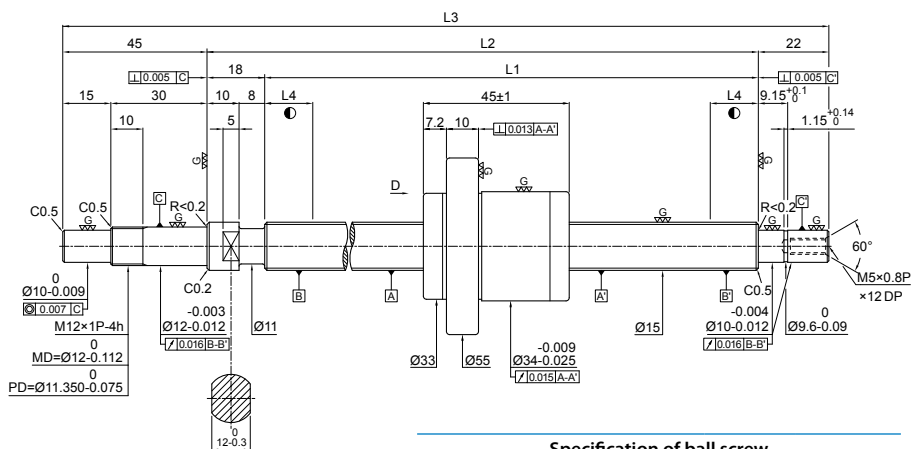
Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	15.6	
Lead	20	
Ball Dia.	3.175	
Effective Turns (Circuit × Row)	1.8 × 1	
Lead Angle	22.2	
Dynamic Rate Load Ca (kgf)	780	
Static Rate Load Co (kgf)	1400	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.15~0.8	0.24 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R15-20A1-FSKC-536-621-0.018	536	554	621	15	5	0.027	0.018
1R15-20A1-FSKC-586-671-0.018	586	604	671	15	5	0.030	0.018
1R15-20A1-FSKC-636-721-0.018	636	654	721	15	5	0.030	0.018
1R15-20A1-FSKC-686-771-0.018	686	704	771	15	5	0.030	0.018
1R15-20A1-FSKC-786-871-0.018	786	804	871	15	5	0.035	0.018
1R15-20A1-FSKC-886-971-0.018	889	904	971	15	5	0.040	0.018
1R15-20A1-FSKC-1086-1171-0.018	1089	1104	1171	15	5	0.046	0.018

FSKC

Standard ballscrews
Screw Dia.Ø15 Lead20



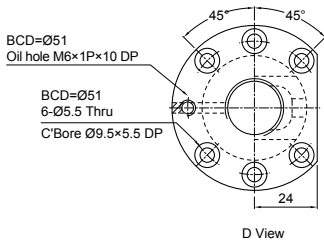
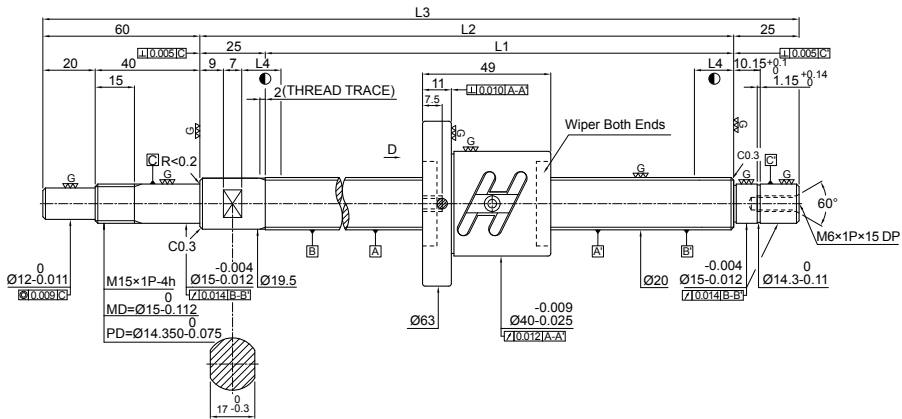
Specification of ball screw

Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	2/Right	
BCD	15.6	
Lead	20	
Ball Dia.	3.175	
Effective Turns (Circuit $\times$ Row)	1.8×2	
Lead Angle	22.2	
Dynamic Rate Load C_a (kgf)	1400	
Static Rate Load C_o (kgf)	2800	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.2~0.9	-

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
2R15-20A1-FSKC-236-321-0.018	236	254	321	10	5	0.023	0.018
2R15-20A1-FSKC-286-371-0.018	286	304	371	10	5	0.023	0.018
2R15-20A1-FSKC-336-421-0.018	336	354	421	15	5	0.023	0.018
2R15-20A1-FSKC-386-471-0.018	386	404	471	15	5	0.025	0.018
2R15-20A1-FSKC-436-521-0.018	436	454	521	15	5	0.025	0.018
2R15-20A1-FSKC-486-571-0.018	486	504	571	15	5	0.027	0.018

Standard ballscrews
Screw Dia. $\varnothing 20$ Lead 04 **FSWC**



Specification of ball screw

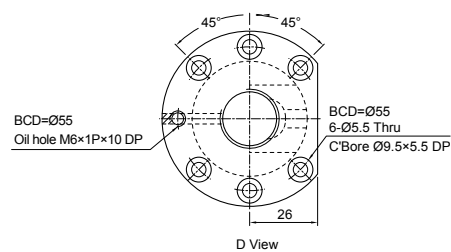
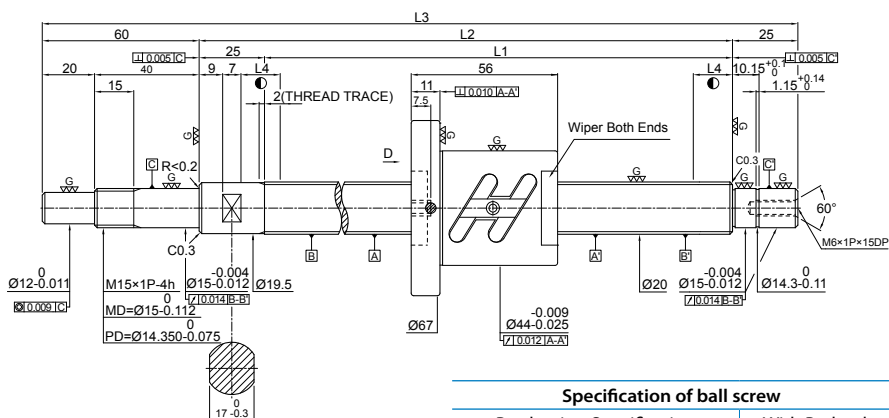
Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	20.4
Lead	4
Ball Dia.	2.381
Effective Turns (Circuit × Row)	2.5 × 2
Lead Angle	3.57
Dynamic Rate Load Ca (kgf)	820
Static Rate Load Co (kgf)	2110
Axial Play	0
Preloading Torque (kgf-cm)	0.12~0.68

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
1R20-04B2-FSWC-225-335-0.018	225	250	335	10	5	0.023	0.018
1R20-04B2-FSWC-275-385-0.018	275	300	385	10	5	0.023	0.018
1R20-04B2-FSWC-375-485-0.018	375	400	485	15	5	0.025	0.018
1R20-04B2-FSWC-475-585-0.018	475	500	585	15	5	0.027	0.018
1R20-04B2-FSWC-575-685-0.018	575	600	685	15	5	0.030	0.018
1R20-04B2-FSWC-675-785-0.018	675	700	785	15	5	0.035	0.018

FSWC

Standard ballscrews
Screw Dia. Ø20 Lead05

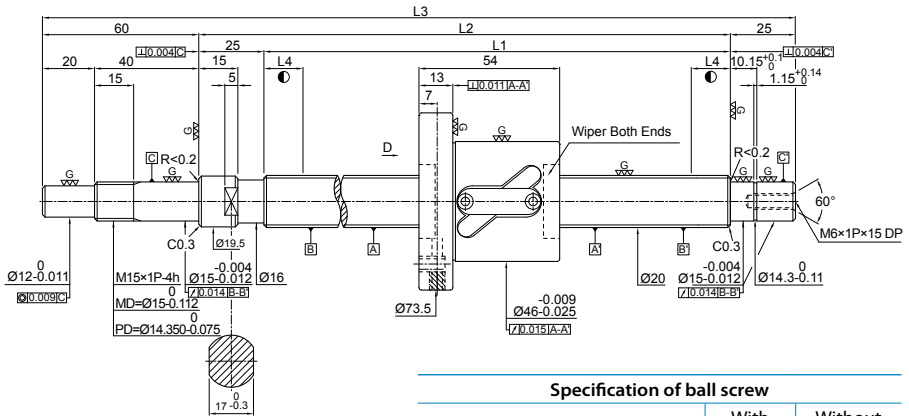


Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	20.6
Lead	5
Ball Dia.	3.175
Effective Turns (Circuit × Row)	2.5 × 2
Lead Angle	4.42
Dynamic Rate Load Ca (kgf)	1510
Static Rate Load Co (kgf)	3460
Axial Play	0
Preloading Torque (kgf-cm)	0.28~1.32

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm ϵ_{300}
1R20-05B2-FSWC-225-335-0.018	225	250	335	10	5	0.023	0.018
1R20-05B2-FSWC-275-385-0.018	275	300	385	10	5	0.023	0.018
1R20-05B2-FSWC-375-485-0.018	375	400	485	15	5	0.025	0.018
1R20-05B2-FSWC-475-585-0.018	475	500	585	15	5	0.027	0.018
1R20-05B2-FSWC-575-685-0.018	575	600	685	15	5	0.030	0.018
1R20-05B2-FSWC-775-885-0.018	775	800	885	10	5	0.035	0.018



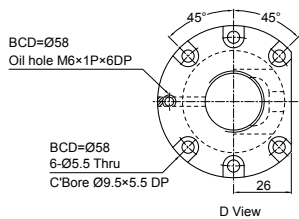
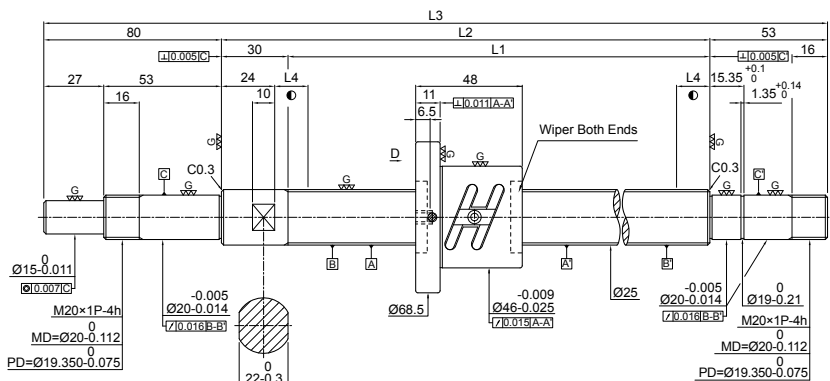
Specification of ball screw

Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	20.7	
Lead	10	
Ball Dia.	3.969	
Effective Turns (Circuit × Row)	2.5 × 1	
Lead Angle	8.78	
Dynamic Rate Load Ca (kgf)	1100	
Static Rate Load Co (kgf)	2120	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.2~0.1.2	0.3or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm ϵ_{300}
1R20-10B1-FSWC-289-399-0.018	289	314	399	10	5	0.023	0.018
1R20-10B1-FSWC-389-499-0.018	389	414	499	10	5	0.025	0.018
1R20-10B1-FSWC-489-599-0.018	489	514	599	15	5	0.027	0.018
1R20-10B1-FSWC-589-699-0.018	589	614	699	15	5	0.030	0.018
1R20-10B1-FSWC-689-799-0.018	689	714	799	15	5	0.035	0.018
1R20-10B1-FSWC-789-899-0.018	789	814	899	15	5	0.035	0.018
1R20-10B1-FSWC-889-999-0.018	889	914	999	15	5	0.040	0.018
1R20-10B1-FSWC-989-1099-0.018	989	1014	1099	15	5	0.040	0.018
1R20-10B1-FSWC-1089-1199-0.018	1089	1114	1199	15	5	0.046	0.018
1R20-10B1-FSWC-1189-1299-0.018	1189	1214	1299	15	5	0.046	0.018
1R20-10B1-FSWC-1289-1399-0.018	1289	1314	1399	15	5	0.046	0.018

FSWC Standard ballscrews
Screw Dia.Ø25 Lead04

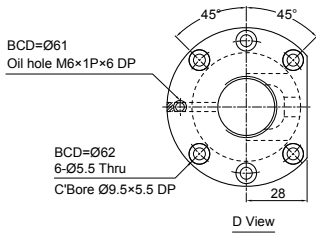
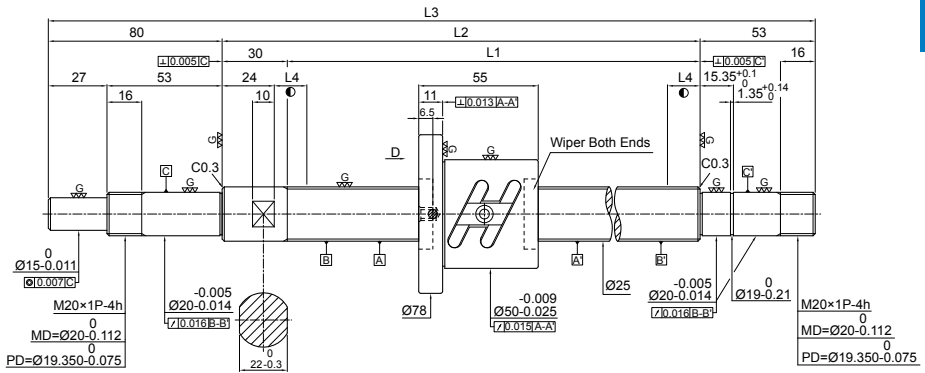


Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	25.4
Lead	4
Ball Dia.	2.381
Effective Turns (Circuit × Row)	2.5 × 2
Lead Angle	2.87
Dynamic Rate Load Ca (kgf)	930
Static Rate Load Co (kgf)	2710
Axial Play	0
Preloading Torque (kgf-cm)	0.15~0.85

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R25-04B2-FSWC-220-383-0.018	220	250	383	10	5	0.023	0.018
1R25-04B2-FSWC-270-433-0.018	270	300	433	10	5	0.023	0.018
1R25-04B2-FSWC-370-533-0.018	370	400	533	15	5	0.025	0.018
1R25-04B2-FSWC-470-633-0.018	470	500	633	15	5	0.027	0.018
1R25-04B2-FSWC-570-733-0.018	570	600	733	15	5	0.030	0.018
1R25-04B2-FSWC-770-933-0.018	770	800	933	10	5	0.035	0.018

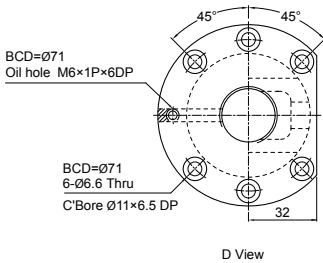
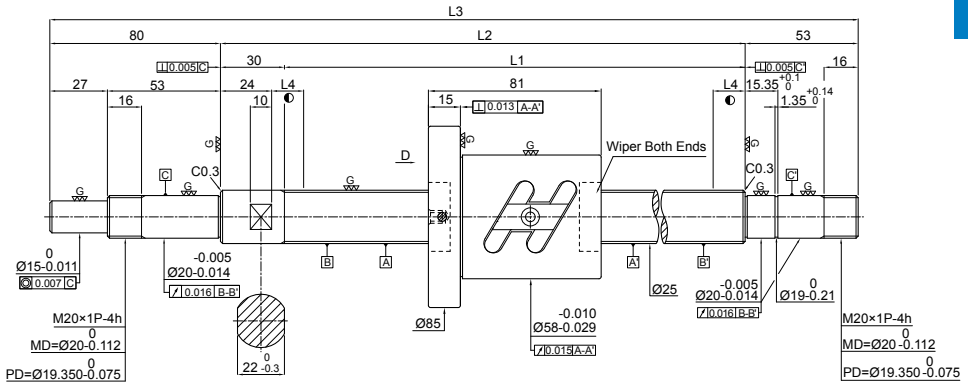


Specification of ball screw

Production Specification	With Preload	Without Preload
Number of Thread / Thread Direction	1/Right	
BCD	20.7	
Lead	10	
Ball Dia.	3.969	
Effective Turns (Circuit × Row)	2.5 × 2	
Lead Angle	8.78	
Dynamic Rate Load Ca (kgf)	1100	
Static Rate Load Co (kgf)	2120	
Axial Play	0	0.005 or less
Preloading Torque (kgf-cm)	0.2~0.1.2	0.3 or less

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm E ₃₀₀
1R25-05B2-FSWC-220-383-0.018	220	250	383	10	5	0.023	0.018
1R25-05B2-FSWC-270-433-0.018	270	300	433	10	5	0.023	0.018
1R25-05B2-FSWC-370-533-0.018	370	400	533	15	5	0.025	0.018
1R25-05B2-FSWC-470-633-0.018	470	500	633	15	5	0.027	0.018
1R25-05B2-FSWC-570-733-0.018	570	600	733	15	5	0.030	0.018
1R25-05B2-FSWC-670-833-0.018	670	700	833	15	5	0.030	0.018
1R25-05B2-FSWC-770-933-0.018	770	800	933	15	5	0.035	0.018
1R25-05B2-FSWC-970-1133-0.018	970	1000	1133	15	5	0.040	0.018
1R25-05B2-FSWC-1170-1333-0.018	1170	1200	1333	15	5	0.046	0.018



Specification of ball screw

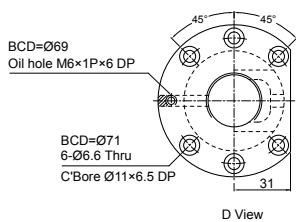
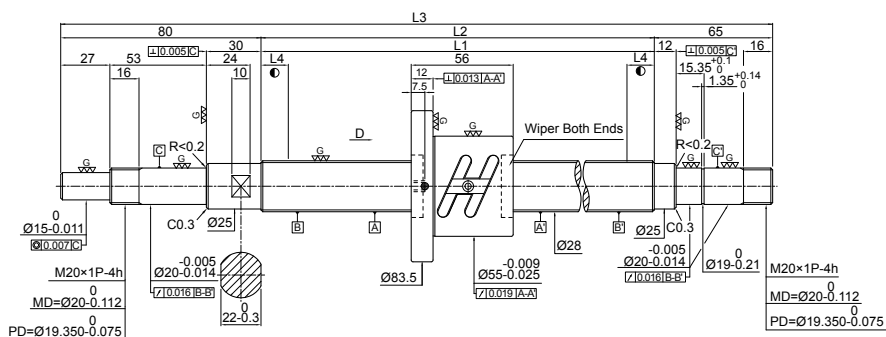
Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	26
Lead	10
Ball Dia.	4.762
Effective Turns (Circuit × Row)	1.5 × 2
Lead Angle	6.98
Dynamic Rate Load Ca (kgf)	1820
Static Rate Load Co (kgf)	3840
Axial Play	0
Preloading Torque (kgf-cm)	0.42~2.4

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
1R25-10A2-FSWC-370-533-0.018	370	400	533	10	5	0.025	0.018
1R25-10A2-FSWC-570-733-0.018	570	600	733	10	5	0.030	0.018
1R25-10A2-FSWC-770-933-0.018	770	800	933	15	5	0.035	0.018
1R25-10A2-FSWC-970-1133-0.018	970	1000	1133	15	5	0.040	0.018
1R25-10A2-FSWC-1170-1333-0.018	1170	1200	1333	15	5	0.046	0.018
1R25-10A2-FSWC-1470-1600-0.018	1470	1500	1633	15	5	0.054	0.018

FSWC

Standard ballscrews
Screw Dia.Ø28 Lead05

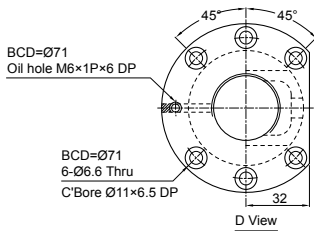
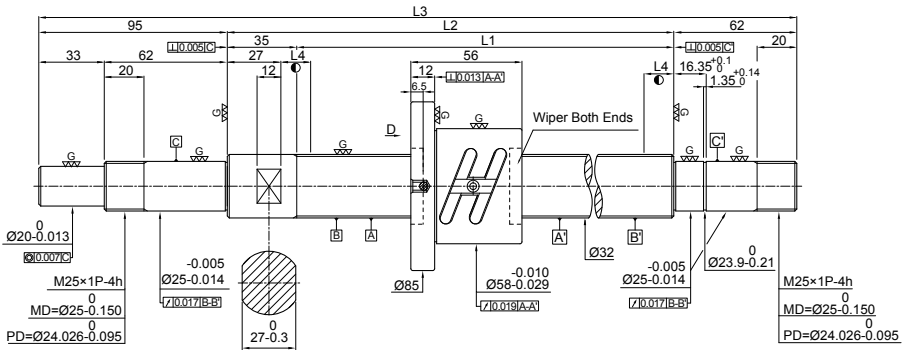


Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	28.6
Lead	5
Ball Dia.	3.175
Effective Turns (Circuit × Row)	2.5 × 2
Lead Angle	3.19
Dynamic Rate Load Ca (kgf)	1720
Static Rate Load Co (kgf)	4940
Axial Play	0
Preloading Torque (kgf-cm)	0.3~1.7

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
1R28-05B2-FSWC-270-445-0.018	270	300	445	10	5	0.023	0.018
1R28-05B2-FSWC-370-545-0.018	370	400	545	15	5	0.023	0.018
1R28-05B2-FSWC-470-645-0.018	470	500	645	15	5	0.023	0.018
1R28-05B2-FSWC-558-733-0.018	558	588	733	15	5	0.023	0.018
1R28-05B2-FSWC-758-933-0.018	758	788	933	15	5	0.025	0.018
1R28-05B2-FSWC-958-1133-0.018	958	988	1133	15	5	0.025	0.018
1R28-05B2-FSWC-1158-1333-0.018	1158	1188	1333	15	5	0.027	0.018

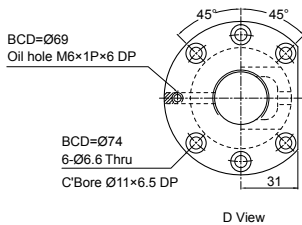


Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	32.6
Lead	5
Ball Dia.	3.175
Effective Turns (Circuit × Row)	2.5 × 2
Lead Angle	2.79
Dynamic Rate Load Ca (kgf)	1830
Static Rate Load Co (kgf)	5680
Axial Play	0
Preloading Torque (kgf-cm)	0.48~1.92

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
1R32-05B2-FSWC-265-457-0.018	265	300	457	10	5	0.023	0.018
1R32-05B2-FSWC-365-557-0.018	365	400	557	15	5	0.025	0.018
1R32-05B2-FSWC-465-657-0.018	465	500	657	15	5	0.027	0.018
1R32-05B2-FSWC-565-757-0.018	565	600	757	15	5	0.030	0.018
1R32-05B2-FSWC-665-857-0.018	665	700	857	15	5	0.030	0.018
1R32-05B2-FSWC-765-957-0.018	765	800	957	15	5	0.035	0.018
1R32-05B2-FSWC-965-1157-0.018	965	1000	1157	15	5	0.040	0.018
1R32-05B2-FSWC-1165-1357-0.018	1165	1200	1357	15	5	0.046	0.018
1R32-05B2-FSWC-1465-1657-0.018	1465	1500	1657	15	5	0.054	0.018



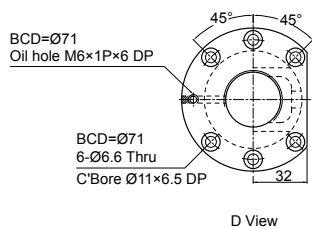
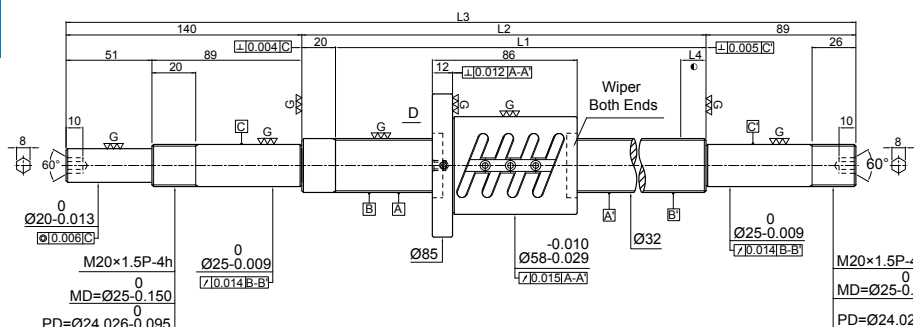
Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	28.6
Lead	5
Ball Dia.	3.175
Effective Turns (Circuit × Row)	2.5 × 2(2)
Lead Angle	3.19
Dynamic Rate Load Ca (kgf)	1720
Static Rate Load Co (kgf)	4940
Axial Play	0
Preloading Torque (kgf-cm)	1.1~3.3

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R28-05B1-FOWC-270-445-0.018	270	312	445	10	5	0.023	0.018
1R28-05B1-FOWC-370-545-0.018	370	412	545	15	5	0.025	0.018
1R28-05B1-FOWC-470-645-0.018	470	512	645	15	5	0.027	0.018
1R28-05B1-FOWC-558-733-0.018	558	600	733	15	5	0.030	0.018
1R28-05B1-FOWC-758-933-0.018	758	800	933	15	5	0.035	0.018
1R28-05B1-FOWC-958-1133-0.018	958	1000	1133	15	5	0.040	0.018
1R28-05B1-FOWC-1158-1333-0.018	1158	1200	1333	15	5	0.046	0.018

FOWC

Standard ballscrews

Screw Dia.Ø32 Lead05

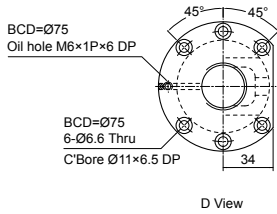
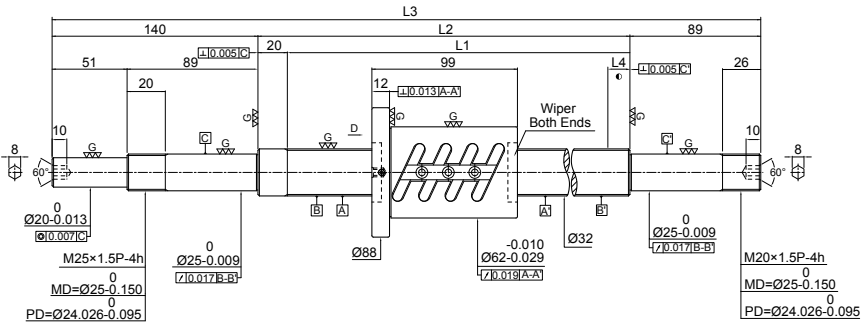


Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	32.6
Lead	5
Ball Dia.	3.175
Effective Turns (Circuit × Row)	2.5 × 2(2)
Lead Angle	2.79
Dynamic Rate Load Ca (kgf)	1830
Static Rate Load Co (kgf)	5680
Axial Play	0
Preloading Torque (kgf-cm)	1.2~3.6

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R32-05B1-FOWC-280-529-0.018	280	300	529	10	5	0.023	0.018
1R32-05B1-FOWC-380-629-0.018	380	400	629	15	5	0.025	0.018
1R32-05B1-FOWC-480-729-0.018	480	500	729	15	5	0.027	0.018
1R32-05B1-FOWC-580-829-0.018	580	600	829	15	5	0.030	0.018
1R32-05B1-FOWC-680-929-0.018	680	700	929	15	5	0.035	0.018
1R32-05B1-FOWC-780-1029-0.018	780	800	1029	15	5	0.035	0.018
1R32-05B1-FOWC-980-1229-0.018	980	1000	1229	15	5	0.040	0.018
1R32-05B1-FOWC-1180-1429-0.018	1180	1200	1429	15	5	0.046	0.018
1R32-05B1-FOWC-1480-1729-0.018	1480	1500	1729	15	5	0.054	0.018

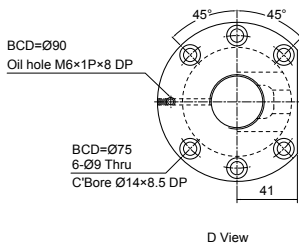
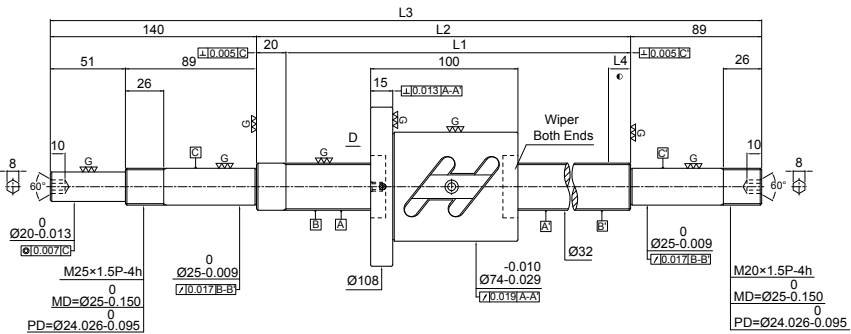


Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	32.7
Lead	6
Ball Dia.	3.969
Effective Turns (Circuit × Row)	2.5 × 2(2)
Lead Angle	3.34
Dynamic Rate Load Ca (kgf)	2410
Static Rate Load Co (kgf)	6900
Axial Play	0
Preloading Torque (kgf-cm)	2.32~4.82

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R32-06B1-FOWC-380-629-0.018	380	400	629	15	5	0.025	0.018
1R32-06B1-FOWC-580-829-0.018	580	600	829	15	5	0.030	0.018
1R32-06B1-FOWC-780-1029-0.018	780	800	1029	15	5	0.035	0.018
1R32-06B1-FOWC-980-1229-0.018	980	1000	1229	15	5	0.040	0.018
1R32-06B1-FOWC-1180-1429-0.018	1180	1200	1429	15	5	0.046	0.018
1R32-06B1-FOWC-1480-1729-0.018	1480	1500	1729	15	5	0.054	0.018



Specification of ball screw

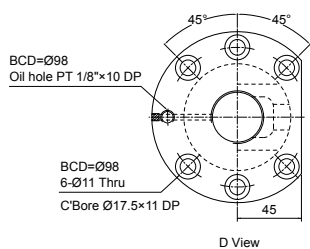
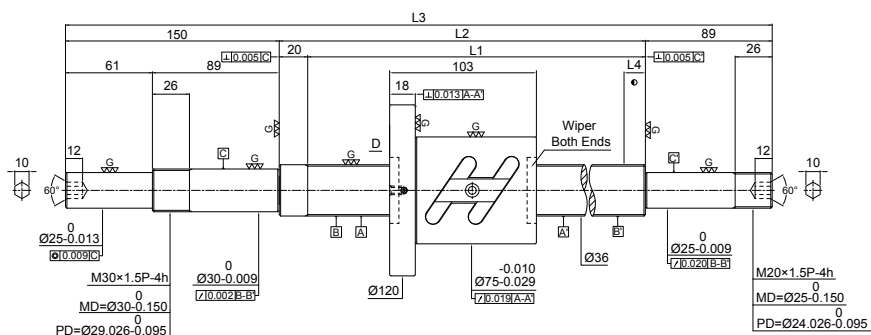
Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	33.4
Lead	10
Ball Dia.	6.35
Effective Turns (Circuit × Row)	2.5 × 1 (2)
Lead Angle	5.44
Dynamic Rate Load Ca (kgf)	2570
Static Rate Load Co (kgf)	5440
Axial Play	0
Preloading Torque (kgf-cm)	3.58~7.44

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R32-10B1-FOWC-380-629-0.018	380	400	629	15	5	0.025	0.018
1R32-10B1-FOWC-480-729-0.018	480	500	729	15	5	0.027	0.018
1R32-10B1-FOWC-580-829-0.018	580	600	829	15	5	0.030	0.018
1R32-10B1-FOWC-680-929-0.018	680	700	929	15	5	0.030	0.018
1R32-10B1-FOWC-780-1029-0.018	780	800	1029	15	5	0.035	0.018
1R32-10B1-FOWC-980-1229-0.018	980	1000	1229	15	5	0.040	0.018
1R32-10B1-FOWC-1180-1429-0.018	1180	1200	1429	15	5	0.046	0.018
1R32-10B1-FOWC-1480-1729-0.018	1480	1500	1729	15	5	0.054	0.018
1R32-10B1-FOWC-1780-2029-0.018	1780	1800	2029	15	5	0.065	0.018

FOWC

Standard ballscrews
Screw Dia. Ø36 Lead10



Specification of ball screw

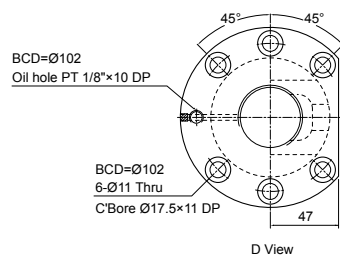
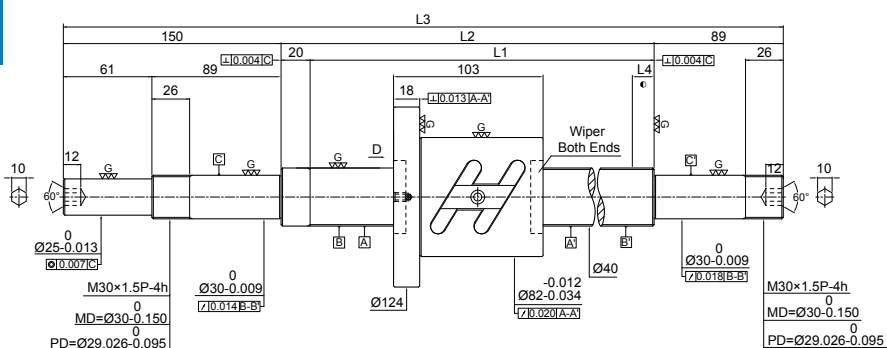
Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	37.4
Lead	10
Ball Dia.	6.35
Effective Turns (Circuit × Row)	2.5 × 1(2)
Lead Angle	4.86
Dynamic Rate Load Ca (kgf)	2720
Static Rate Load Co (kgf)	6180
Axial Play	0
Preloading Torque (kgf-cm)	3.91~8.13

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
1R36-10B1-FOWC-480-739-0.018	480	500	739	15	5	0.027	0.018
1R36-10B1-FOWC-680-939-0.018	680	700	939	15	5	0.030	0.018
1R36-10B1-FOWC-980-1239-0.018	980	1000	1239	15	5	0.040	0.018
1R36-10B1-FOWC-1380-1639-0.018	1380	1400	1639	15	5	0.054	0.018
1R36-10B1-FOWC-1780-2039-0.018	1780	1800	2039	15	5	0.065	0.018

FOWC

Standard ballscrews
Screw Dia. $\varnothing 40$ Lead 10

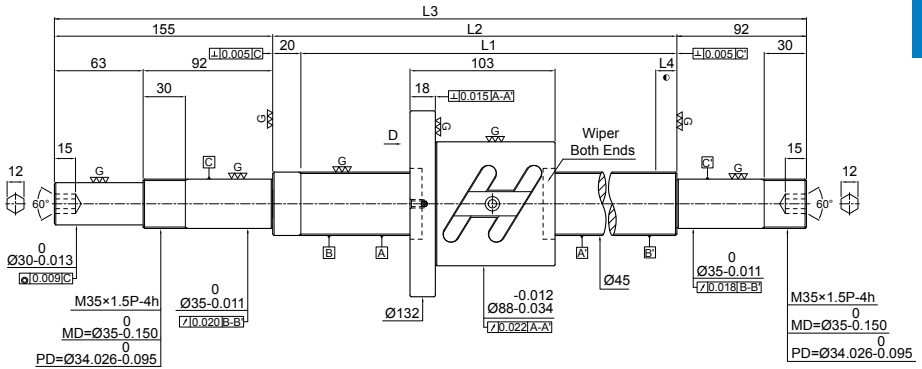


Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	41.4
Lead	10
Ball Dia.	6.35
Effective Turns (Circuit × Row)	2.5 × 1(2)
Lead Angle	4.4
Dynamic Rate Load Ca (kgf)	2880
Static Rate Load Co (kgf)	6950
Axial Play	0
Preloading Torque (kgf-cm)	4.57~8.49

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
1R40-10B1-FOWC-480-739-0.018	480	500	739	15	5	0.027	0.018
1R40-10B1-FOWC-580-839-0.018	580	600	839	15	5	0.030	0.018
1R40-10B1-FOWC-680-939-0.018	680	700	939	15	5	0.030	0.018
1R40-10B1-FOWC-780-1039-0.018	780	800	1039	15	5	0.035	0.018
1R40-10B1-FOWC-980-1239-0.018	980	1000	1239	15	5	0.040	0.018
1R40-10B1-FOWC-1180-1439-0.018	1180	1200	1439	15	5	0.046	0.018
1R40-10B1-FOWC-1380-1639-0.018	1380	1400	1639	15	5	0.054	0.018
1R40-10B1-FOWC-1580-1839-0.018	1580	1600	1839	15	5	0.054	0.018
1R40-10B1-FOWC-1780-2039-0.018	1780	1800	2039	15	5	0.065	0.018
1R40-10B1-FOWC-2380-2639-0.018	2380	2400	2639	15	5	0.077	0.018



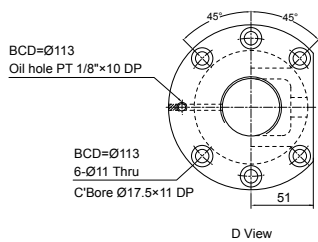
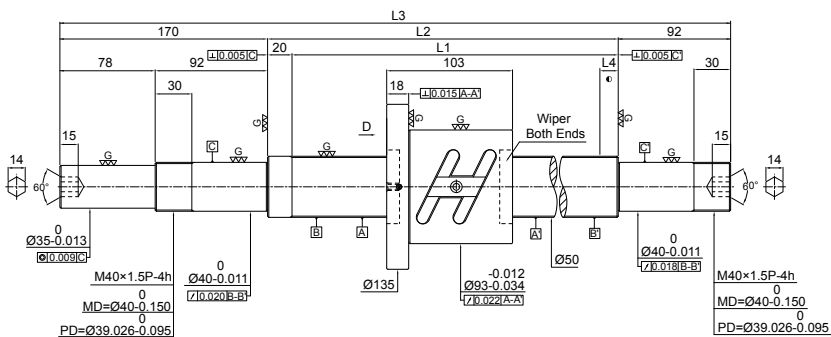
Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	46.4
Lead	10
Ball Dia.	6.35
Effective Turns (Circuit × Row)	2.5 × 1(2)
Lead Angle	4.4
Dynamic Rate Load Ca (kgf)	3020
Static Rate Load Co (kgf)	7850
Axial Play	0
Preloading Torque (kgf-cm)	4.58~9.5

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
1R45-10B1-1FOWC-680-947-0.018	680	700	947	15	5	0.035	0.018
1R45-10B1-1FOWC-980-1247-0.018	980	1000	1247	15	5	0.04	0.018
1R45-10B1-1FOWC-1380-1647-0.018	1380	1400	1647	15	5	0.054	0.018
1R45-10B1-1FOWC-1780-2047-0.018	1780	1800	2047	15	5	0.065	0.018
1R45-10B1-1FOWC-2480-2747-0.018	2480	2500	2747	15	5	0.077	0.018

FOWC Standard ballscrews
Screw Dia.Ø50 Lea

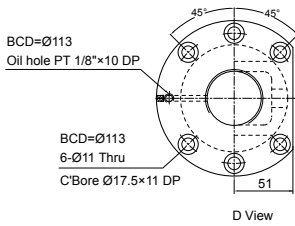
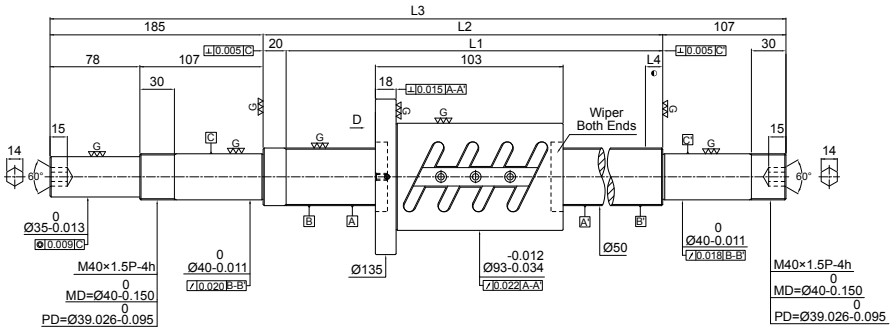


Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	51.4
Lead	10
Ball Dia.	6.35
Effective Turns (Circuit × Row)	2.5 × 1 (2)
Lead Angle	3.54
Dynamic Rate Load Ca (kgf)	3190
Static Rate Load Co (kgf)	8710
Axial Play	0
Preloading Torque (kgf-cm)	4.84~11.28

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R50-10B1-FOWC-580-892-0.018	580	600	892	15	5	0.030	0.018
1R50-10B1-FOWC-780-1092-0.018	780	800	1092	15	5	0.035	0.018
1R50-10B1-FOWC-980-1292-0.018	980	1000	1292	15	5	0.040	0.018
1R50-10B1-FOWC-1180-1492-0.018	1180	1200	1492	15	5	0.046	0.018
1R50-10B1-FOWC-1480-1792-0.018	1480	1500	1792	15	5	0.054	0.018
1R50-10B1-FOWC-1980-2292-0.018	1980	2000	2292	15	5	0.065	0.018
1R50-10B1-FOWC-2580-2892-0.018	2580	2600	2892	15	5	0.093	0.018



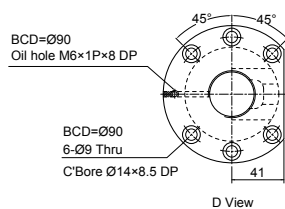
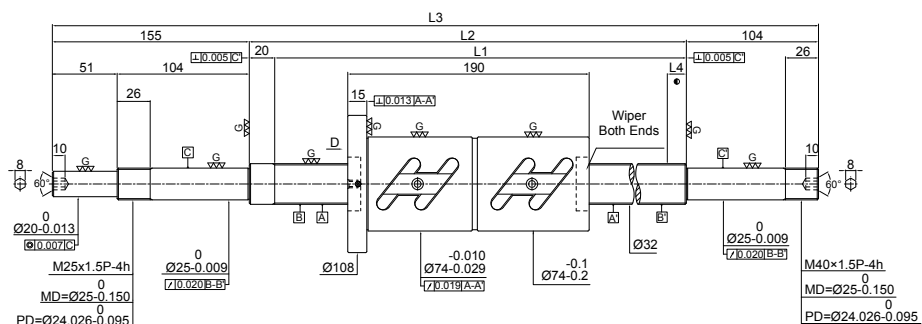
Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	51.4
Lead	10
Ball Dia.	6.35
Effective Turns (Circuit × Row)	2.5 × 2(2)
Lead Angle	3.54
Dynamic Rate Load Ca (kgf)	5790
Static Rate Load Co (kgf)	17420
Axial Play	0
Preloading Torque (kgf-cm)	10.48~17.48

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R50-10B2-FOWC-580-892-0.018	580	600	892	15	5	0.030	0.018
1R50-10B2-FOWC-780-1092-0.018	780	800	1092	15	5	0.035	0.018
1R50-10B2-FOWC-980-1292-0.018	980	1000	1292	15	5	0.040	0.018
1R50-10B2-FOWC-1180-1492-0.018	1180	1200	1492	15	5	0.046	0.018
1R50-10B2-FOWC-1480-1792-0.018	1480	1500	1792	15	5	0.054	0.018
1R50-10B2-FOWC-1980-2292-0.018	1980	2000	2292	15	5	0.065	0.018
1R50-10B2-FOWC-2580-2892-0.018	2580	2600	2892	15	5	0.093	0.018

FDWC Standard ballscrews
Screw Dia.Ø32 Lead10



Specification of ball screw

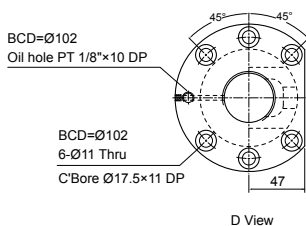
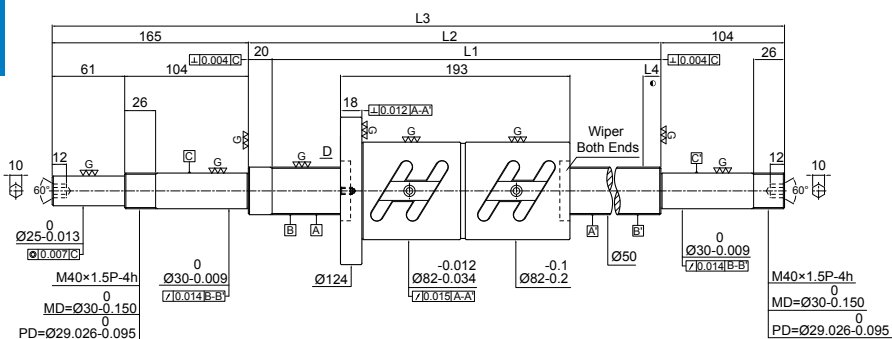
Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	33.4
Lead	10
Ball Dia.	6.35
Effective Turns (Circuit × Row)	2.5 × 2
Lead Angle	5.44
Dynamic Rate Load Ca (kgf)	4660
Static Rate Load Co (kgf)	10880
Axial Play	0
Preloading Torque (kgf-cm)	5.51~11.43

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e ₃₀₀
1R32-10B2-FDWC-380-659-0.018	380	400	659	15	5	0.025	0.018
1R32-10B2-FDWC-480-759-0.018	480	500	759	15	5	0.027	0.018
1R32-10B2-FDWC-580-859-0.018	580	600	859	15	5	0.030	0.018
1R32-10B2-FDWC-680-959-0.018	680	700	959	15	5	0.030	0.018
1R32-10B2-FDWC-780-1059-0.018	780	800	1059	15	5	0.035	0.018
1R32-10B2-FDWC-980-1259-0.018	980	1000	1259	15	5	0.040	0.018
1R32-10B2-FDWC-1180-1459-0.018	1180	1200	1459	15	5	0.046	0.018
1R32-10B2-FDWC-1480-1759-0.018	1480	1500	1759	15	5	0.054	0.018
1R32-10B2-FDWC-1780-2059-0.018	1780	1800	2059	15	5	0.065	0.018

FDWC

Standard ballscrews
Screw Dia. Ø40 Lead10



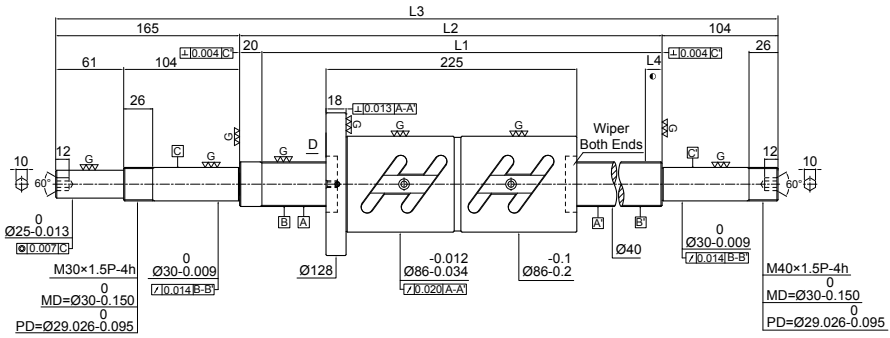
D View

Specification of ball screw

Production Specification	With Preload
Number of Thread / Thread Direction	1/Right
BCD	41.4
Lead	10
Ball Dia.	6.35
Effective Turns (Circuit × Row)	2.5 × 2
Lead Angle	4.4
Dynamic Rate Load C_a (kgf)	5220
Static Rate Load C_o (kgf)	13900
Axial Play	0
Preloading Torque (kgf-cm)	8.26~13.78

Unit: mm

Model No.	Screw Spindle (Shaft) Length				Accuracy Grade	Lead Accuracy	
	L1	L2	L3	L4		Accumulated reference lead deviation E	Lead Deriation in random 300mm e_{300}
1R40-10B2-FDWC-480-769-0.018	480	500	769	15	5	0.027	0.018
1R40-10B2-FDWC-580-869-0.018	580	600	869	15	5	0.030	0.018
1R40-10B2-FDWC-680-969-0.018	680	700	969	15	5	0.030	0.018
1R40-10B2-FDWC-780-1069-0.018	780	800	1069	15	5	0.035	0.018
1R40-10B2-FDWC-980-1269-0.018	980	1000	1269	15	5	0.040	0.018
1R40-10B2-FDWC-1180-1469-0.018	1180	1200	1469	15	5	0.046	0.018
1R40-10B2-FDWC-1380-1669-0.018	1380	1400	1669	15	5	0.054	0.018
1R40-10B2-FDWC-1580-1869-0.018	1580	1600	1869	15	5	0.054	0.018
1R40-10B2-FDWC-1780-2069-0.018	1780	1800	2069	15	5	0.065	0.018
1R40-10B2-FDWC-2380-2269-0.018	2380	2400	2269	15	5	0.077	0.018



14 *PMI* Rolled BallScrews

14.1 Introduction to Rolled Ballscrew

The production of the *PMI* rolled ballscrews has adopted a manufacturing process and equipment unlike other manufacturers. Combining advanced skills and the Bad Düben digital electric screw thread rolling machine, we adhere to a strict quality control policy at every stage of production, from the selection of ballscrew material and rolled processing to induction hardening heat treatment and post production. We are committed to providing clients with products of the best quality.

The combination of rolled ballscrews and ground nuts has replaced the traditional ACME screws and trapezoidal screws. This makes for a smoother operation while lowering friction and backlash. Moreover, the new technology has the advantage of faster production speed and lower prices.

Besides differences in the definition of lead deviation and geometric tolerance, rolled and ground ballscrews can both eliminate axial play by preloading. Please contact us for related technical information.



We employ the most advanced digital electric screw thread rolling machine. During the manufacturing process, the oil cylinders on the two axes of the thread rolling dies employ a servo hydraulic system for the correction of oil pressure and positioning precision.



We employ Germany-imported Bad Düben roller in order to maintain the stability of the thread rolling machine and the quality of the rolled product.

14.2 Features of the *PMI* Rolled Ballscrew

C7, C8, and C10 Screws have been Standardized

The lead accuracy of our rolled ballscrews is in accordance with JIS B1192 -1997, and our C7, C8, and C10 products have been standardized

Lead Accuracy Up to Grade C5

Lead accuracy grade can be as good as JIS Grade C5 and C6. Please contact us if you have need for such high accuracy grades.

High Precision Rolled Nuts

The manufacturing process of rolled nuts is identical to that of ground nuts. Surface hardening treatment and internal thread grinding ensure durability and smoothness.

Nuts are Interchangeable

Without preload and within the maximum permissible axial play, different types of nuts can be used on the same screw.

14.3 Lead Accuracy of Rolled Screws (e_{300})

According to JIS B1192 -1997, the definition of lead accuracy for *PMI* rolled ballscrews is as follows: Within the effective thread length, the permissible value of accumulated lead deviation in random 300mm. As shown in table 14.1:

Table 14.1 Lead Accuracy

e_{300} (Within the effective thread length, the permissible value of accumulated lead deviation in random 300mm)

Unit: μm

Grade	C5	C6	C7	C8	C10
ISO, DIN	23		52		210
JIS	18		50		210
<i>PMI</i>	18	25	50	100	210

ep(Within the effective thread length, the permissible value of accumulated lead deviation)

Unit: μm

Grade	C5	C6	C7	C8	C10
PMI	$ep = \pm(lu/300) \times e_{300}$ lu: Effective thread length (Unit: mm)				

Unit: μm

e_{300} \ Grade Measured length	C5	C6	C7	C8	C10
0~100	15	20	44	84	178
101~200	16	22	48	92	194
201~315	18	25	50	100	210

P.S. Please contact us for PMI C5 and C6 requirements.

14.4 Reference Table of the Nominal Outer diameter and Lead of the *PMI*'s Rolled screw shaft

PMI rolled ballscrews offer a variety of specifications, lead accuracies, and maximum rolling length, as shown in table 14.2~14.3:

Table 14.2 Specifications of Rolled Ballscrews

Screw nominal outer diameter $\varnothing$	Lead										Maximum rolled ballscrew length
	4	5	5.08	6	10	16	20	25	32	40	
12	●	●									1400
14	●	●									2800
15					●						4400
16	●	●			●	●					3600
20	●	●			●		●				4400
25	●	●/○	●/○		●			●			4400
28		●		●							4400
32		●/○	●/○		●		●		●		5700
36					●						5700
40		●			●		●			●	5400
50					●						5200

● : right-hand thread ○ : left-hand thread

P.S. Rolled ballscrews are limited in length and accuracy, please contact us for other requirements.

Table 14.3 Lead Accuracy and Maximum Rolled Length

Screw nominal outer diameter $\varnothing(mm)$	Lead Accuracy Grade (e ₃₀₀) Maximum Rolling Length (mm)				
	C5	C6	C7	C8	C10
12	Please contact our sales representatives		1400	1400	1400
14			2800	2800	2800
15			4400	4400	4400
16			3600	3600	3600
20			4400	4400	4400
25~28			4400	4400	4400
32			5700	5700	5700
36			5700	5700	5700
40			5400	5400	5400
50			5200	5200	5200

14.5 Axial Play

The maximum axial play under normal non-preload condition, as shown in table 14.4

Table 14.4 Maximum Axial Play

Screw O.D. $\varnothing d$ (mm)	6~12	14~28	30~32	36~45	50
Maximum Axial Play (mm)	0.05	0.10	0.14	0.17	0.20

PMI rolled ballscrews can eliminate axial play by preloading. Please contact our sales representatives if preloading is required.

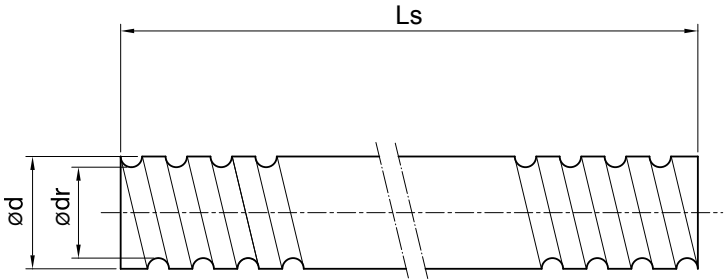
14.6 Materials and Hardness

Standard material and surface hardness for **PMI** rolled screw, as shown in table 14.5

Table 14.5

Denomination	Material	Heat Treatment	Hardness (HRC)
Rolled screw	S55C	Induction hardening	58~62
Nuts	SCM420H	Carburized hardening	58~62

14.7 Types and Dimensions of Rolled screw shaft



Unit:mm

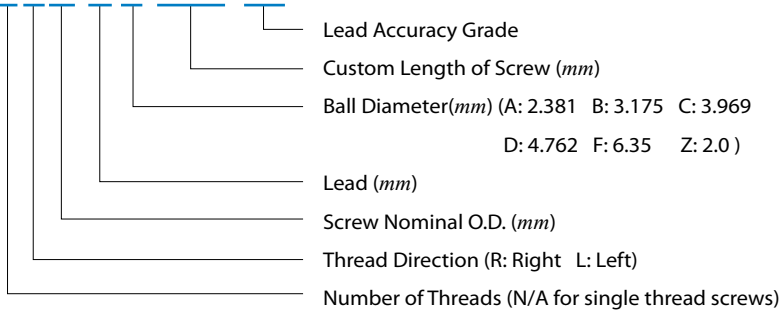
SCREW SIZE			Lead Accuracy Grade	Thread Direction	Number of Threads	Maximum Rolling Length	Screw Number
O.D.	LEAD	BALL DIA.		L: Left / R: Right			
12	4	2.381	C7, C8, C10	R	1	1400	R1204A
	5	2.000		R	1		R1205Z
14	4	2.381		R	1	2800	R1404A
	5	3.175		R	1		R1405B
15	10	3.175		R	2	4400	2R1510B
16	4	2.381		R	1	3600	R1604A
	5	3.175		R	1		R1605B
	10	3.175		R	2		2R1610B
	16	3.175		R	2		2R1616B

Unit:mm

SCREW SIZE			Lead Accuracy Grade	Thread Direction	Number of Threads	Maximum Rolling Length	Screw Number
O.D.	LEAD	BALL DIA.		L: Left / R: Right			
20	4	2.381	C7, C8, C10	R	1	4400	R2004A
	5	3.175		R	1		R2005B
	10	4.762		R	1		R2010D
	20	3.175		R	2		2R2020B
25	4	2.381		R	1		R2504A
	5	3.175		R/L	1		R(L)2505B
	5.08	3.175		R/L	1		R(L)2515B
	10	4.762		R	1		R2510D
	10	6.350		R	1		R2510F
	25	3.969		R	4		4R2525C
28	5	3.175		R	1	5700	R2805B
	6	3.175		R	1		R2806B
32	5	3.175		R/L	1		R(L)3205B
	5.08	3.175		R/L	1		R(L)3215B
	10	6.350		R	1		R3210F
	20	6.350		R	2		2R3220F
	32	4.762		R	4		4R3232D
36	10	6.350		R	1	5700	R3610F
40	5	3.175		R	1	5400	R4005B
	10	6.350		R	1		R4010F
	20	6.350		R	2		2R4020F
	40	6.350		R	4		4R4040F
50	10	6.350		R	1	5200	R5010F

Order Code:

4 R 15 10 A -1500 -C7



14.8 Nut Types of Rolled Ballscrew

Standard Models:

FSIN



FSIW



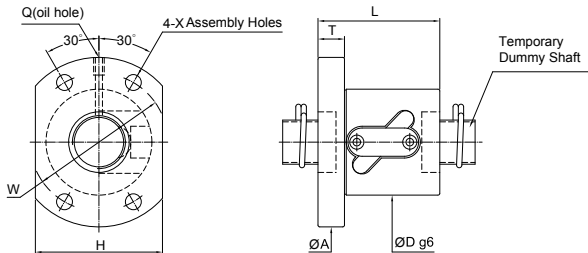
FSKW



FSDW



FSWW



Unit: mm

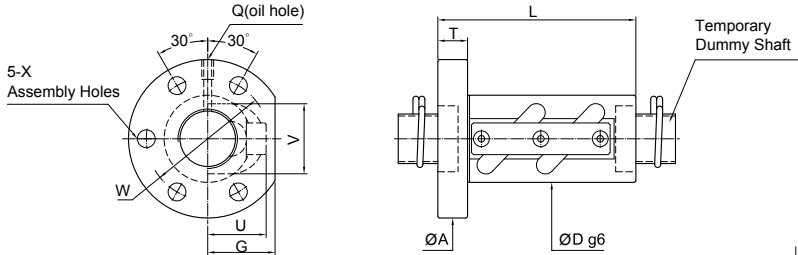
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit x row	BASIC RATE LOAD(kgf)		BALLNUT DIMENSION										
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	O.D. D	Length L	Flange A T W H				Assembly Hole X	Oil Hole Q	STIFFNESS kgf/μm	Nut Model NO.	
12	4	2.381	2.5×1	285	533	30	40	52	10	40	31	4.5	M6×1P	9	FSWW1204-2.5P	
	5	2.000	2.5×1	270	350	26	40	47	10	37	30	4.5	M6×1P	8.2	FSWW1205-2.5P	
14	4	2.381	3.5×1	500	1100	35	42	57	10	45	40	4.5	M6×1P	15	FSWW1404-3.5P	
	5	3.175	2.5×1	515	990	40	40	57	10	45	40	4.5	M6×1P	11	FSWW1405-2.5P	
20	5	3.175	2.5×1	625	1450	44	41	67	10	55	52	5.5	M6×1P	15	FSWW2005-2.5P	
	10	4.762	2.5×1	1100	2200	52	61	82	12	67	64	6.6	M6×1P	16	FSWW2010-2.5P	
25	5	3.175	2.5×1	720	1830	50	41	73	11	61	56	6.6	M6×1P	18	FSWW2505-2.5P	
			2.5×2	1120	3710		56							37	FSWW2505-5.0P	
	10	6.350	2.5×1	1720	3590	60	69	96	15	78	72	9	M6×1P	21	FSWW2510-2.5P	
			2.5×2	3200	7170		97							40	FSWW2510-5.0P	
32	10	6.350	2.5×1	1930	4680	67	69	103	15	85	78	9	M6×1P	25	FSWW3210-2.5P	
			2.5×2	3130	9410		97							49	FSWW3210-5.0P	
36	10	6.350	2.5×2	3370	10800	70	99	110	17	90	82	11	M6×1P	29	FSWW3610-5.0P	
40	10	6.350	2.5×2	3520	12000	76	100	116	17	96	88	11	M6×1P	59	FSWW4010-5.0P	
50	10	6.350	2.5×2	3900	15000	88	101	128	18	108	100	11	M6×1P	72	FSWW5010-5.0P	
			3.5×2	4940	21000		126							98	FSWW5010-7.0P	

Note:

Stiffness of nut:

Stiffness values listed above are derived from theoretical formula to the elastic deformation between thread grooves and balls while axial load is 30% dynamic load rating.

FSVW



Unit: mm

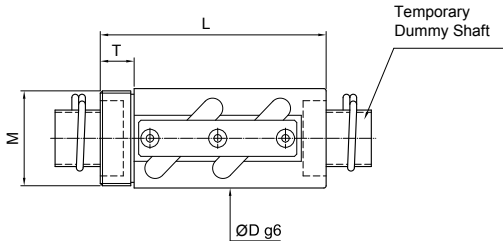
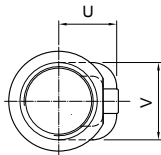
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit X row	BASIC RATE LOAD/(kgf)		BALLNUT DIMENSION														STIFFNESS kgf/μm	Nut Model NO.
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	O.D. D	Length L	Flange A T W H				Return tube U V		Assembly Hole X	Oil Hole Q						
14	4	2.381	3.5×1	500	1100	25	42	55	10	40	19	19	21	4.5	M6×1P	15	FSVW1404-3.5P				
	5	3.175	2.5×1	515	990	30	43	50	10	40	22	22	21	4.5	M6×1P	11	FSVW1405-2.5P				
16	5	3.175	2.5×1	550	1140	34	43	54	10	44	24	20	22	4.5	M6×1P	13	FSVW1605-2.5P				
20	5	3.175	2.5×1	625	1450	40	43	60	12	50	28	28	27	4.5	M6×1P	15	FSVW2005-2.5P				
	10	4.762	2.5×1	1100	2200	40	60	67	12	53	30	30	30	6.6	M6×1P	16	FSVW2010-2.5P				
25	5	3.175	2.5×1	720	1830	42	45	71	12	57	28	28	32	6.6	M6×1P	18	FSVW2505-2.5P				
			2.5×2	1120	3710		60									37	FSVW2505-5.0P				
	10	6.350	2.5×1	1720	3590	44	68	79	15	62	34	34	37	9.0	M6×1P	21	FSVW2510-2.5P				
			2.5×2	3200	7170		98									40	FSVW2510-5.0P				
32	10	6.350	2.5×1	1930	4680	55	72	97	18	75	39	39	44	11	M6×1P	25	FSVW3210-2.5P				
			2.5×2	3130	9410		101									49	FSVW3210-5.0P				
36	10	6.350	2.5×1	1860	5400	70	70	105	17	80	42	35	49	11	M6×1P	29	FSVW3610-2.5P				
			2.5×2	3370	10800		98									55	FSVW3610-5.0P				
40	10	6.350	3.5×2	4450	16800	65	123	114	20	90	44	44	52	14	M6×1P	81	FSVW4010-7.0P				
50	10	6.350	3.5×2	4940	21000	80	125	138	22	110	52	52	62	18	M6×1P	98	FSVW5010-7.0P				

Note:

Stiffness of nut:

Stiffness values listed above are derived from theoretical formula to the elastic deformation between thread grooves and balls while axial load is 30% dynamic load rating.

RSVW



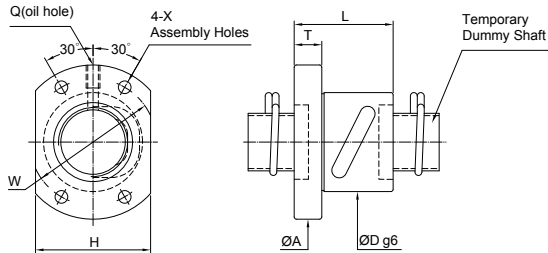
Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD (kgf)		BALLNUT DIMENSION								
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	O.D.	Length	Flange		Return tube		STIFFNESS	Nut Model NO.	
						D	L	M	T	U	V	kgf/μm		
14	4	2.381	3.5×1	500	1100	25	42	M24×1.0P	10	19	21	15	RSVW1404-3.5P	
	5	3.175	2.5×1	515	990	30	43	M26×1.5P	10	22	21	11	RSVW1405-2.5P	
20	5	3.175	2.5×1	625	1450	40	43	M36×1.5P	12	28	27	15	RSVW1605-2.5P	
25	5	3.175	2.5×1	720	1830	42	48	M40×1.5P	15	28	32	18	RSVW2505-2.5P	
			2.5×2	1120	3710		63					37	RSVW2505-5.0P	
	10	6.350	2.5×1	1720	3590	44	68	M42×1.5P	15	34	37	21	RSVW2510-2.5P	
			2.5×2	3200	7170		98					40	RSVW2510-5.0P	
32	10	6.350	2.5×1	1930	4680	55	72	M50×1.5P	18	39	44	25	RSVW3210-2.5P	
			2.5×2	3130	9410		101					49	RSVW3210-5.0P	
40	10	6.350	3.5×2	4450	16800	65	128	M60×2.0P	25	44	52	81	RSVW4010-7.0P	
50	10	6.350	3.5×2	4940	21000	80	143	M75×2.0P	40	52	62	98	RSVW5010-7.0P	

Note:

Stiffness of nut:

Stiffness values listed above are derived from theoretical formula to the elastic deformation between thread grooves and balls while axial load is 30% dynamic load rating.



Unit: mm

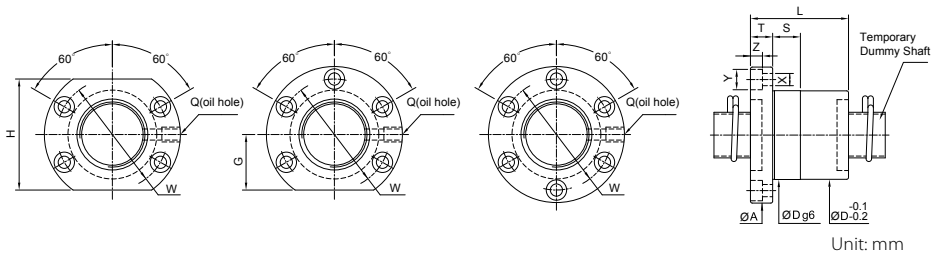
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit x row	BASIC RATE LOAD(kgf)		BALLNUT DIMENSION										
O.D.	LEAD			Dynamic (1x10 ⁶ REV) Ca	Static Co	O.D.	Length	Flange					Assembly Hole	Oil Hole	STIFFNESS	Nut Model NO.
						D	L	A	T	W	H	X	Q	kgf/μm		
12	5	2.000	2.5x1	270	350	26	40	47	10	37	30	4.5	M6x1P	8.2	FSBW1205-2.5P	
14	4	2.381	3.5x1	500	1100	31	40	50	10	40	37	4.5	M6x1P	15	FSBW1404-3.5P	
	5	3.175	2.5x1	515	990	32	40	50	10	40	38	4.5	M6x1P	11	FSBW1405-2.5P	
16	5	3.175	2.5x1	570	1130	34	40	54	10	44	40	4.5	M6x1P	13	FSBW1605-2.5P	
20	4	2.381	2.5x1	415	850	40	41	59	10	50	46	4.5	M6x1P	14	FSBW2004-2.5P	
	5	3.175	2.5x1	620	1450	40	40	59	10	50	46	4.5	M6x1P	16	FSBW2005-2.5P	
25	4	2.381	2.5x1	450	980	43	41	67	10	55	50	4.5	M6x1P	17	FSBW2504-2.5P	
	5	3.175	2.5x1	720	1830	43	40	67	10	55	50	5.5	M6x1P	18	FSBW2505-2.5P	

Note:

Stiffness of nut:

Stiffness values listed above are derived from theoretical formula to the elastic deformation between thread grooves and balls while axial load is 30% dynamic load rating.

FSIW

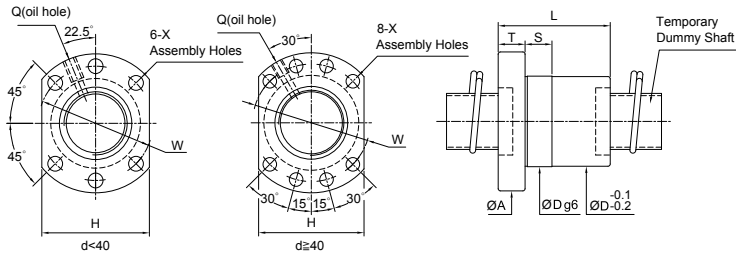


SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD(kgf)		BALLNUT DIMENSION																	
O.D.	LEAD			Dynamic (1x10 ⁶ REV.) Ca	Static Co	O.D. D	Length L	Flange						Fit S	Assembly Hole			Oil Hole Q	STIFFNESS kgf/μm	Nut Model NO.			
				A	T			W	G	H	X	Y	Z										
14	4	2.381	4	400	890	26	47	46	10	36	-	-	10	4.5	8	4.5	M6×1P	18	FSIW1404-4.0P				
16	5	3.175	3	570	1030	30	42	49	10	39	20	40	10	4.5	-	-	M6×1P	17	FSIW1605-3.0P				
20	5	3.175	4	830	1890	34	53	57	12	45	20	40	12	5.5	9.5	5.5	M6×1P	21	FSIW2005-4.0P				
25	5	3.175	4	940	2420	40	53	63.5	12	51	22	44	15	5.5	9.5	5.5	M8×1P	26	FSIW2505-4.0P				
32	5	3.175	4	1050	3390	48	53	73.5	12	60	30	60	15	6.6	11	6.5	M8×1P	32	FSIW3205-4.0P				
	10	6.350	4	2510	5880	54	90	88	16	70	34	68	15	9	14	8.5	M8×1P	34	FSIW3210-4.0P				
40	5	3.175	4	1180	4390	55	56	88.5	16	72	29	58	15	9	14	8.5	M8×1P	38	FSIW4005-4.0P				
	10	6.350	4	2630	7860	64	93	106	18	84	43	86	20	11	17.5	11	M8×1P	41	FSIW4010-4.0P				
50	10	6.350	4	2770	10290	74	93	116	18	94	42	84	20	11	17.5	11	M8×1P	50	FSIW5010-4.0P				

Note:

Stiffness of nut:

Stiffness values listed above are derived from theoretical formula to the elastic deformation between thread grooves and balls while axial load is 30% dynamic load rating.



Unit: mm

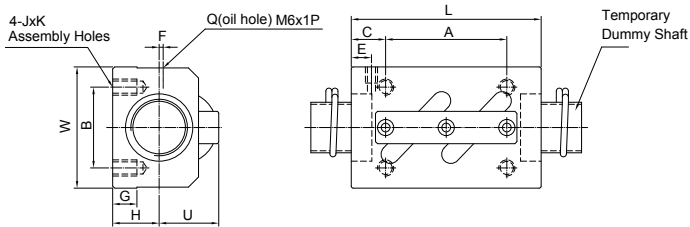
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	BASIC RATE LOAD/(kgf)		BALLNUT DIMENSION										Nut Model NO.
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	O.D. D	Length L	Flange A T W H				Assembly Hole X	Fit S	Oil Hole Q	STIFFNESS kgf/μm	
16	5	3.175	3	570	1030	28	42	48	10	38	40	5.5	12	M6×1P	17	FSIN1605-3.0P
20	5	3.175	4	830	1890	36	50	58	12	47	44	6.5	12	M6×1P	21	FSIN2005-4.0P
25	5	3.175	4	940	2420	40	50	62	12	51	48	6.5	12	M6×1P	26	FSIN2505-4.0P
	10	4.762	4	1560	3550	40	85	62	12	51	48	6.5	15	M6×1P	27	FSIN2510-4.0P
32	5	3.175	4	1050	3390	50	50	80	12	65	62	9	12	M6×1P	32	FSIN3205-4.0P
	10	6.350	4	2510	5880	50	80	80	13	65	62	9	16	M6×1P	34	FSIN3210-4.0P
40	5	3.175	4	1180	4390	63	54	93	15	78	70	9	12	M8×1P	38	FSIN4005-4.0P
	10	6.350	4	2430	7860	63	82	93	15	78	70	9	15	M8×1P	41	FSIN4010-4.0P
50	10	6.350	4	2770	10290	75	88	110	18	93	85	11	16	M8×1P	50	FSIN5010-4.0P
			6	3920	15440		106								73	FSIN5010-6.0P

Note:

Stiffness of nut:

Stiffness values listed above are derived from theoretical formula to the elastic deformation between thread grooves and balls while axial load is 30% dynamic load rating.

SSVW



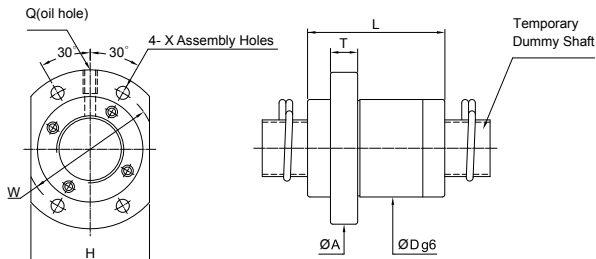
Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit X row	BASIC RATE LOAD (kgf)		BALLNUT DIMENSION														STIFFNESS kgf/μm	Nut Model NO.
O.D.	LEAD			Dynamic (1×10 ⁶ REV) Ca	Static Co	Length L	Width W	Height H	Assembly Hole				Position of Oil Hole		Height from Reference Surface						
									A	B	C	JxK	E	F	G	U					
14	4	2.381	3.5×1	500	1110	35	34	13	22	26	6.5	M4×7	6	2	6	18	15	SSVW1404-3.5P			
	5	3.175	2.5×1	515	990	35	34	13	22	26	6.5	M4×7	6	2	6	18	11	SSVW1405-2.5P			
16	5	3.175	2.5×1	590	1210	35	42	16	22	32	6.5	M5×8	6	2	8	21	13	SSVW1605-2.5P			
20	5	3.175	2.5×1	625	1450	35	48	17	22	35	6.5	M6×10	6	3	9.15	22	15	SSVW2005-2.5P			
	10	4.762	2.5×1	1100	2220	58	48	18	35	35	11.5	M6×10	10	2	9.5	25	16	SSVW2010-2.5P			
25	5	3.175	2.5×1	720	1830	35	60	20	22	40	6.5	M8×12	7	5	9.5	25	18	SSVW2505-2.5P			
	10	6.350	2.5×2	3240	7170	94	60	23	60	40	17	M8×12	10	-	10	30	40	SSVW2510-5.0P			
28	6	3.175	2.5×2	1380	4140	67	60	22	40	40	13.5	M8×12	8	5	10	27	39	SSVW2806-5.0P			
32	10	6.350	2.5×1	2010	4700	64	70	26	45	50	9.5	M8×12	10	-	12	36	25	SSVW3210-2.5P			
			2.5×2	3640	9410	94			60		17						49	SSVW3210-5.0P			

Note:

Stiffness of nut:

Stiffness values listed above are derived from theoretical formula to the elastic deformation between thread grooves and balls while axial load is 30% dynamic load rating.



Unit: mm

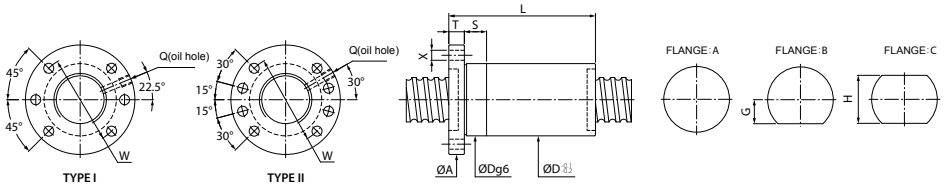
SCREW SIZE		BALL DIA.	EFFECTIVE TURNS circuit × row	BASIC RATE LOAD(kgf)		BALLNUT DIMENSION									
O.D.	LEAD			Dynamic (1×10 ⁶ REV.) Ca	Static Co	O.D.	Length	Flange				Assembly Hole X	Oil Hole Q	STIFFNESS kgf/μm	Nut Model NO.
15	10	3.175	2.8×2	1000	2570	34	44	57	10	45	40	5.5	M6×1P	26	FSKW1510-5.6P
16	16	3.175	1.8×1	330	640	32	38	53	10	42	38	4.5	M6×1P	9	FSKW1616-1.8P
20	20	3.175	1.8×2	780	2280	39	52	62	10	50	46	5.5	M6×1P	21	FSKW2020-3.6P
25	25	3.969	1.8×2	1230	3570	47	62	74	12	60	56	6.6	M6×1P	27	FSKW2525-3.6P
			1.8×4	2230	7140									52	FSKW2525-7.2P
32	32	4.762	1.8×2	1760	5500	58	78	92	15	74	68	9	M6×1P	33	FSKW3232-3.6P
			1.8×4	3200	11000									65	FSKW3232-7.2P
40	40	6.350	1.8×2	2870	9170	73	95	114	17	93	84	11	M6×1P	42	FSKW4040-3.6P
			1.8×4	5220	18340									81	FSKW4040-7.2P

Note:

Stiffness of nut:

Stiffness values listed above are derived from theoretical formula to the elastic deformation between thread grooves and balls while axial load is 30% dynamic load rating.

FSDW



Unit: mm

SCREW SIZE		BALL DIA.	EFFECTIVE TURNS	MODIFIED LOAD CAPACITY (kgf)		BALLNUT DIMENSION														
O.D.	LEAD			Dynamic (1×10 ⁶ REV) Cam	Static Coam	O.D.	Length	Flange							Fit	Oil Hole	Assembly Hole	STIFFNESS	Nut Model NO.	
						D	L	A	T	W	G	H	TYPE	S	Q	X	kgf/μm			
12	4	2.381	3	410	990	24	28	44	10	34	16	32	I	10	M6×1P	4.5	13	FSDW1204-3.0P		
14	4	2.381	4	590	1610	26	32	48	10	36	17	34	I	10	M6×1P	4.5	18	FSDW1404-4.0P		
	5	3.175	3	550	1260	29	32	51	10	39	18.5	37	I	10	M6×1P	5.5	14	FSDW1405-3.0P		
15	10	3.175	3	560	1340	29	47	51	10	39	18.5	37	I	10	M6×1P	5.5	15	FSDW1510-3.0P		
16	5	3.175	3	600	1460	29	35	51	10	39	18.5	37	I	10	M6×1P	5.5	16	FSDW1605-3.0P		
	10	3.175	3	580	1440	29	50	51	10	39	18.5	37	I	10	M6×1P	5.5	15	FSDW1610-3.0P		
20	4	2.381	3	520	1660	32	28	53	10	43	21.5	43	I	10	M6×1P	4.5	18	FSDW2004-3.0P		
	5	3.175	3	670	1860	36	35	62	12	49	23	46	I	12	M6×1P	5.5	19	FSDW2005-3.0P		
	10	4.762	3	1320	3390	40	52	62	12	51	24	48	I	15	M6×1P	6.6	21	FSDW2010-3.0P		
25	4	2.381	3	580	2120	37	28	62	12	50	24	48	I	12	M6×1P	6.6	21	FSDW2504-3.0P		
			3	740	2350		36										21	FSDW2505-3.0P		
	5	3.175	4	960	3190	40	41	62	12	51	24	48	I	15	M6×1P	6.6	28	FSDW2505-4.0P		
			5	1180	4030		46										35	FSDW2505-5.0P		
		4.762	4	1920	5700	45	63	65	15	54	25.5	51	I	15	M6×1P	6.6	32	FSDW2510-4.0P		
	10		3	2130	5570	51	58	87	16	72	34.5	69	I	15	M8×1P	9	27	FSDW2510-3.0P		
28		6.350	5	3380	9550		78										42	FSDW2510-5.0P		
	5	3.175	5	1240	4530	43	48	65	12	54	24	48	I	15	M8×1P	6.6	38	FSDW2805-5.0P		
	5	3.175	4	1080	4130	50	41	87	16	72	34.5	69	I	15	M8×1P	9	34	FSDW3205-4.0P		
32	10	6.350	3	2410	7020	57	58	87	16	72	34.5	69	I	15	M8×1P	9	32	FSDW3210-3.0P		
			5	3820	12030												50	FSDW3210-5.0P		
36	10	6.350	3	2560	8250	70	58	108	17	90	36	82	I	15	M6×1P	11	52	FSDW3610-3.0P		
40	5	3.175	4	1180	5200	60	42	91	18	76	34	68	II	15	M8×1P	9	40	FSDW4005-4.0P		
	10	6.350	5	4290	15290	65	78	95	18	80	36	72	II	20	M8×1P	9	59	FSDW4010-5.0P		
50	10	6.350	5	4780	19360	75	78	118	18	100	46	92	II	20	M8×1P	11	70	FSDW5010-5.0P		

Note:

1. Cam and Coam represent the enhanced dynamic- and static load. Their calculations referred to the standard of ISO-3408-5.

2. Stiffness of nut:

Stiffness values listed above are derived from theoretical formula to the elastic deformation between thread grooves and balls while axial load is 30% dynamic load rating.