

## D. Precision Rotary Series

[www.tbimotion.com.tw](http://www.tbimotion.com.tw)

# 1. About Precision Rotary Ball Screw/Spline

## 1-1 Features of *TBI MOTION* Precision Rotary Ball Screw/Spline

*TBI MOTION* rotary ball screw and spline line is designed to enable the application to move linearly and rotationally in one assembly, with symmetrical orientation design between the outer and inner ball screw or spline nut. Both rotary and spiral movement can be achieved simultaneously.

*TBI MOTION* rotary line is the most ideal key component in scara robots, industrial robots, pick & place, laser engraving, transporting and many other multi directional application.

### Feature

#### Zero clearance/High rigidity

*TBI MOTION* rotary line featured 45° angular (face - to - face) contact angle within in the bearing. It enables self aligning with minor mounting error and bears higher axial load to achieve better accuracy. Custom preload can be applied to reduce clearance and increase high rigidity. (as shown in Fig 1.1.1)

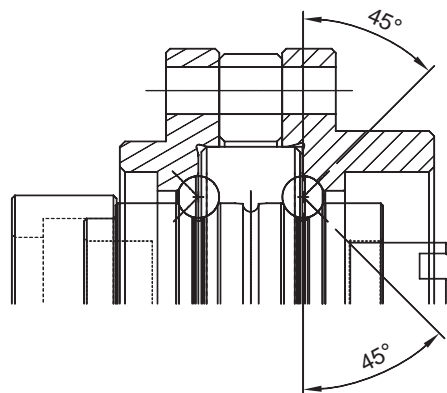


Fig 1.1.1

#### High speed/Smooth running performance

The rotary line uses *TBI MOTION* super lead screw to maintain high speed with smoothness in performance.

#### Noise reduction

The precision ground screw thread and spline groove make sure the ball bearing travel fluently during operations which reduce the skidding, friction and noise level and thus increase the service performance and life.

#### Plug and run/Compact

*TBI MOTION* rotary line features a one-piece compact and easy mounting design.

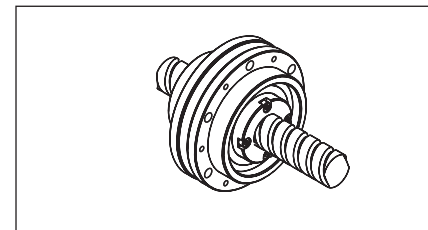


Fig 1.1.2 Rotary Ball Screw - RFE Type

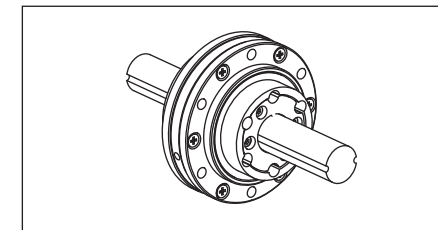


Fig 1.1.3 Rotary Ball Screw - RLF Type

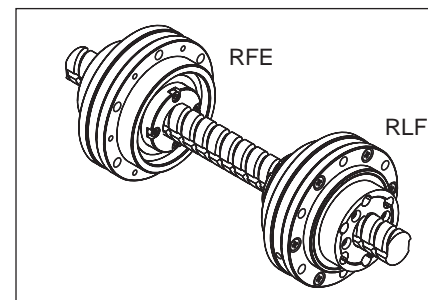


Fig 1.1.4 Ball Screw/Spline - NSV Type

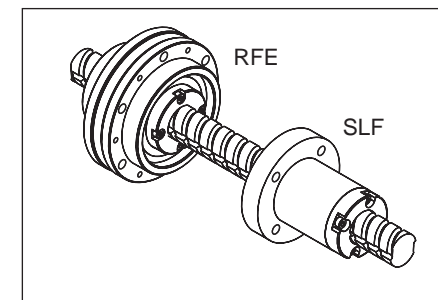


Fig 1.1.5 Ball Screw/Spline - NSH Type

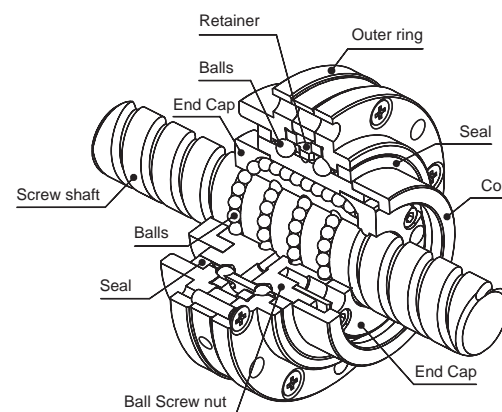


Fig 1.1.6 The Structure of RFE - series

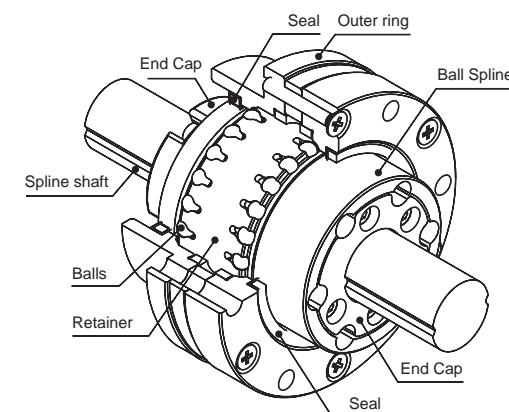


Fig 1.1.7 The Structure of RLF - series

## 1-2 Accuracy

### 1-2-1 NSV, NSH Accuracy Standards

The Ball Screw/Spline is manufactured with the following specifications.

**【 Ball Screw 】**

Axial clearance : 0 or less

Lead angle accuracy : C5

(For detailed specifications, see C05)

**【 Ball Spline 】**

Clearance in the rotational direction : 0 or less

(CL : light preload)

(For detailed specifications, see B21~22)

Accuracy grade : class H

(For detailed specifications, see B23)

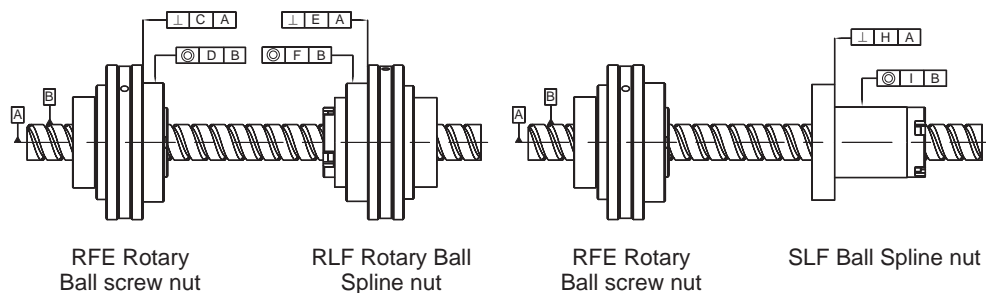


Fig 1.2.1 NSV - series

Fig 1.2.2 NSH - series

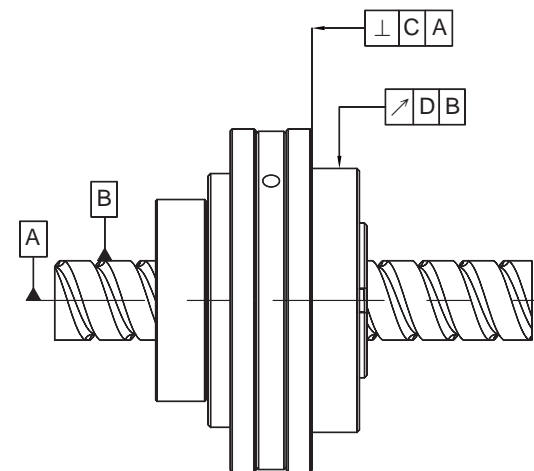


Fig 1.2.3

Model No.	C	D	E	F	H	I
NSV01616 NSH01616	0.018	0.021	0.016	0.020	0.013	0.016
NSV02020 NSH02020	0.018	0.021	0.016	0.020	0.013	0.016
NSV02525 NSH02525	0.021	0.021	0.018	0.024	0.016	0.016
NSV03232 NSH03232	0.021	0.021	0.018	0.024	0.016	0.016
NSV04040 NSH04040	0.025	0.025	0.021	0.033	0.019	0.019
NSV05050 NSH05050	0.025	0.025	0.021	0.033	0.019	0.019

### 1-2-2 RFE Accuracy Standard

The accuracy of model RFE is compliant with JIS standard (JIS B 1192-1997) except for the radial runout of the circumference of the ball screw nut from the screw axis (D) and the perpendicularity of the flange-mounting surface against the screw axis (C).

Unit : mm

Lead angle accuracy Model No.	Rolled C7		Rolled C10		Ground C7		Ground C5		Ground C3	
	C	D	C	D	C	D	C	D	C	D
RFE01616	0.035	0.065	0.035	0.065	0.023	0.035	0.016	0.020	0.013	0.017
RFE02020	0.035	0.065	0.035	0.065	0.023	0.035	0.016	0.020	0.013	0.017
RFE02525	0.035	0.065	0.035	0.065	0.023	0.035	0.018	0.024	0.015	0.020
RFE03232	0.035	0.065	0.035	0.065	0.023	0.035	0.018	0.024	0.015	0.020
RFE04040	0.046	0.086	0.046	0.086	0.026	0.046	0.021	0.033	0.018	0.026
RFE05050	0.046	0.086	0.046	0.086	0.026	0.046	0.021	0.033	0.018	0.026

1-2-3 RLF Accuracy Standard

Accuracy Grade

The accuracy of the Ball Spline is determined by the callout of the spline-nut and thus divided into three accuracy grades of Normal (N), High (H), and Precision (P).

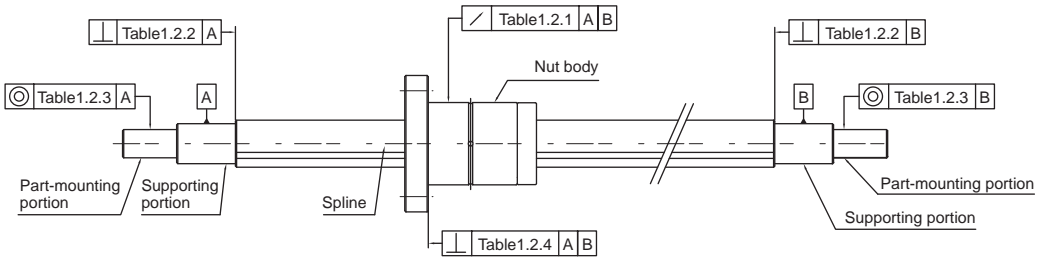


Fig 1.2.4

Accuracy Specification

Tables 1.2.1 ~ 5 indicates the the measurement items of the Ball Spline.

Table1.2.1 The Maximum call out of Spline Nut on the support unit Unit : μm

Length		Nominal Diameter	16, 20			25, 32			40, 50		
Above	Below		N	H	P	N	H	P	N	H	P
-	200		56	34	18	53	32	18	53	32	16
200	315		71	45	25	58	39	21	58	36	19
315	400		83	53	31	70	44	25	63	39	21
400	500		95	62	38	78	50	29	68	43	24
500	630		112	-	-	88	57	34	74	47	27
630	800		-	-	-	103	68	42	84	54	32

Table1.2.2 The Maximum perpendicularity of Spline-shaft end on the journal ends Unit : μm

Nominal Diameter		Accuracy	Normal (N)	High (H)	Precision (P)
16	20		27	11	8
25	32		33	13	9
40	50		39	16	11

Table1.2.3 The maximum radial call out on the attach surface Unit : μm

Nominal Diameter		Accuracy	Normal (N)	High (H)	Precision (P)
16	20		46	19	12
25	32		53	22	13
40	50		62	25	15

Table1.2.4 The perpendicularity of flange on the attach surface Unit : μm

Nominal Diameter				Accuracy	Normal (N)	High (H)	Precision (P)
16	20	25	32		30	16	11
40	50				46	19	13

Table1.2.5 The accuracy grade on the effective length accuracy Unit : μm

Accuracy	Normal (N)	High (H)	Precision (P)
Permissible	33	13	6

Note : Measurement according to any 100 mm on the Spline shaft.

ROTARY BALL SCREW / SPLINE

### 1-3 Example of Assembly - RFE

#### 1-3-1 Example of Mounting Rotary Ball Screw Nut Model RFE

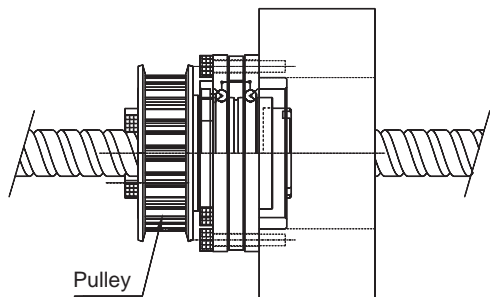


Fig 1.3.1

#### Example of Mounting Model RFE on the Table

(1) Ball screw nut fixed, screw shaft free. (Suitable for a long table)

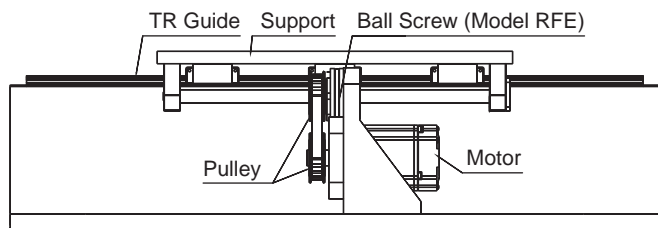


Fig 1.3.2

(2) Ball screw nut free, screw shaft fixed. (Suitable for a short table and a long stroke)

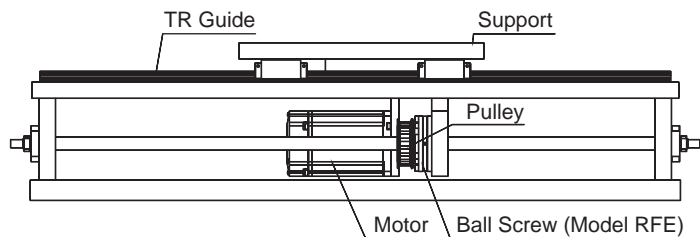


Fig 1.3.3

### 1-4 Example of Assembly - NSV

#### 1-4-1 Example of Mounting Precision Ball Screw/Spline Model NSV

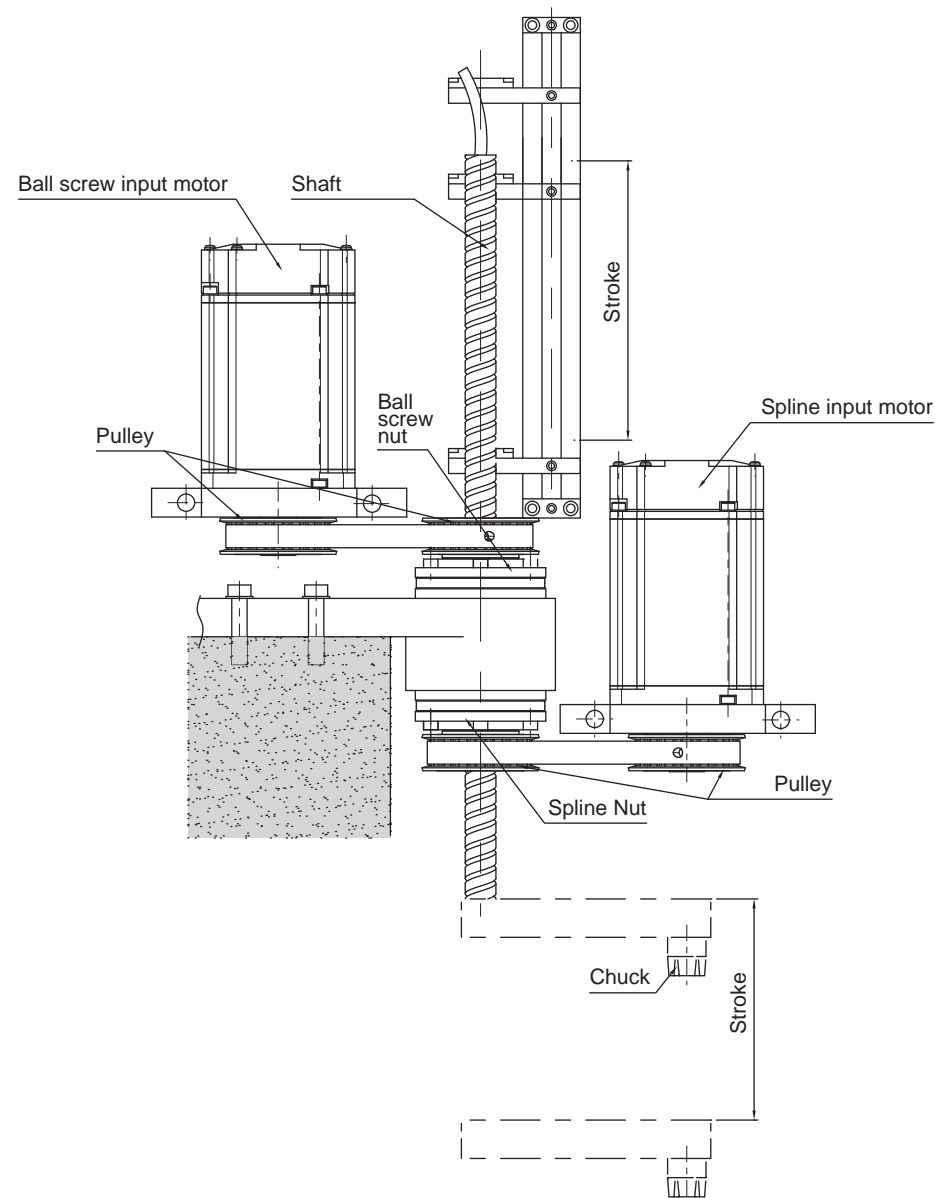
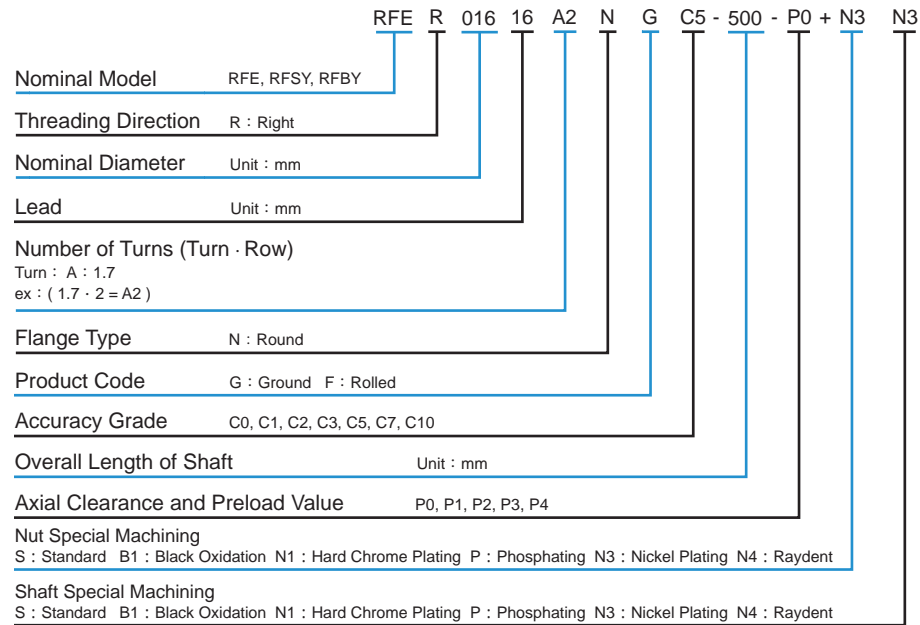


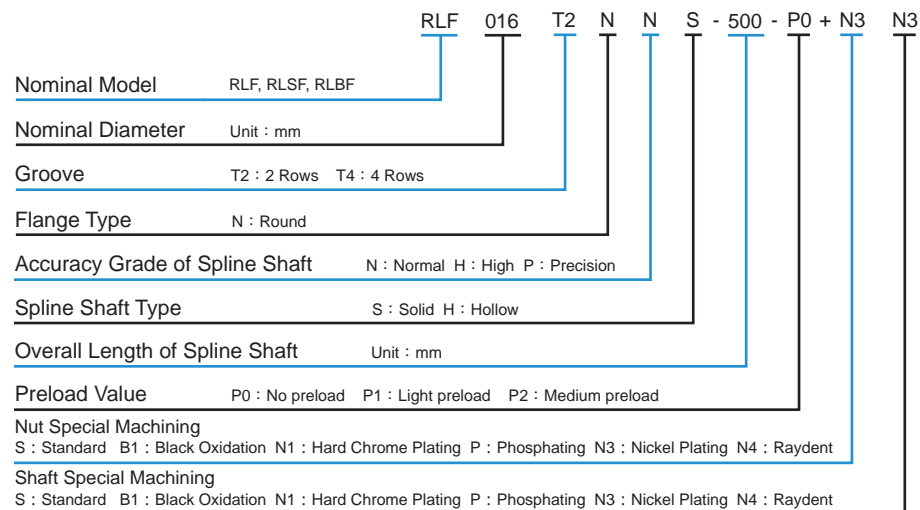
Fig 1.4.1

## 1-5 Nominal Model Code of Rotary Series

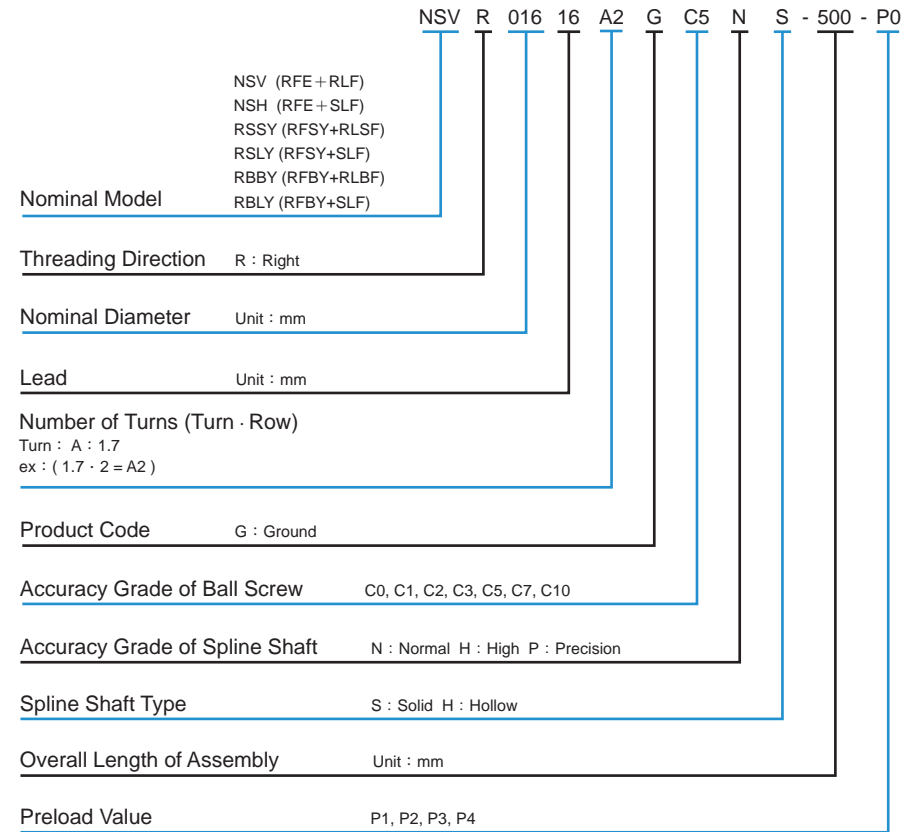
### Nominal Model Code of Rotary Ball Screw



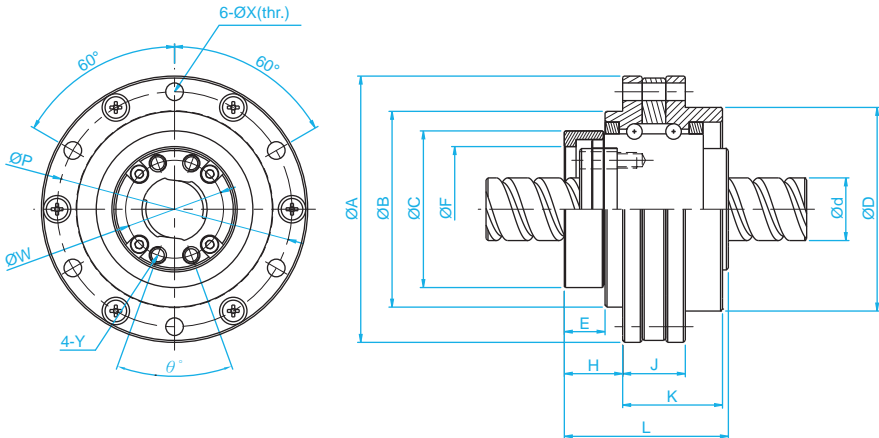
### Nominal Model Code of Rotary Ball Spline



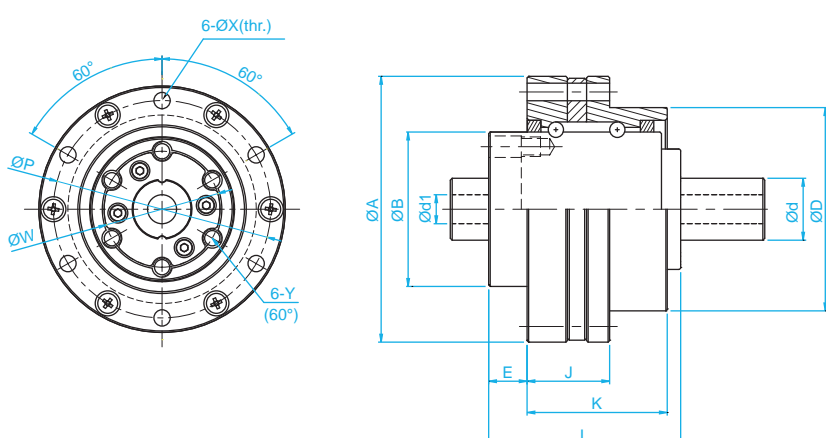
### Nominal Model Code of Rotary Ball Screw and Ball Spline



### RFE Series Specifications



### RLF Series Specifications



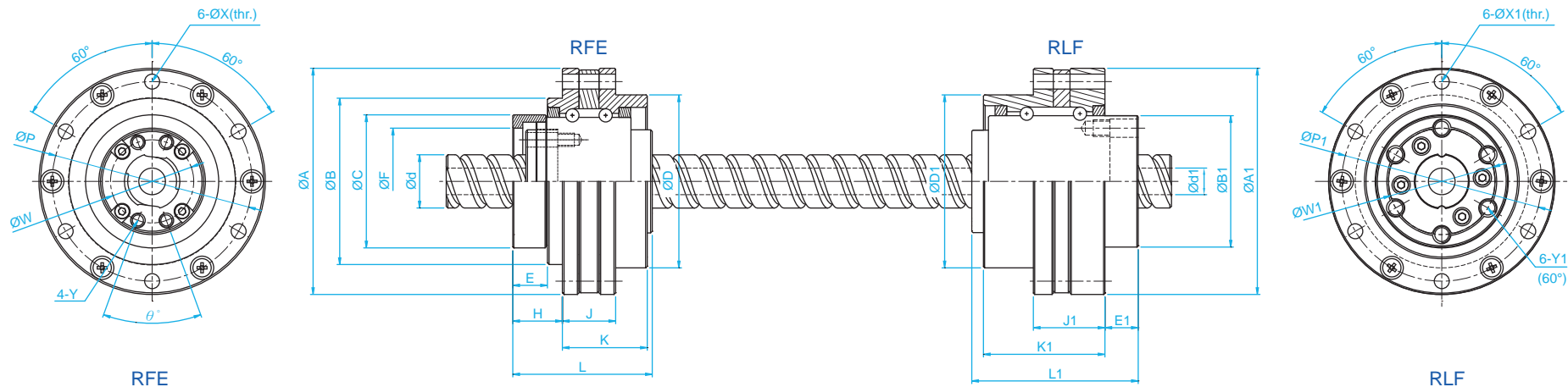
Unit: mm

Model No.	d	l	Da	n	Support Bearing Load Rating		Ball Screw Nut Dimension														Screw Nut Load Rating		
					Ca (kgf)	Coa (kgf)	D	A	B	L	C	F	E	H	J	K	P	X	W	Y	θ	Ca (kgf)	Coa (kgf)
RFE01616	16	16	2.778	1.7x2	605	1142	52 <sup>0</sup> <sub>-0.007</sub>	68	50	41.9	40 <sup>0</sup> <sub>-0.025</sub>	32 <sup>+0.025</sup> <sub>0</sub>	10.4	14.9	16	25.5	60	4.5	25	M4	40	1021	2409
RFE02020	20	20	3.175	1.7x2	896	1865	62 <sup>0</sup> <sub>-0.007</sub>	78	61	51	50 <sup>0</sup> <sub>-0.025</sub>	39 <sup>+0.025</sup> <sub>0</sub>	11	15.5	19	32	70	4.5	31	M5	40	1321	3320
RFE02525	25	25	3.969	1.7x2	918	2033	72 <sup>0</sup> <sub>-0.007</sub>	92	71	58	58 <sup>0</sup> <sub>-0.03</sub>	47 <sup>+0.025</sup> <sub>0</sub>	15.5	21.5	19	34	81	5.5	38	M6	40	1974	5188
RFE03232	32	32	4.762	1.7x2	1511	3310	80 <sup>0</sup> <sub>-0.007</sub>	105	-	76	66 <sup>0</sup> <sub>-0.03</sub>	58 <sup>+0.03</sup> <sub>0</sub>	21	-	29.5	52.5	91	6.6	48	M6	40	2876	8207
RFE04040	40	40	6.35	1.7x2	2385	5830	110 <sup>0</sup> <sub>-0.008</sub>	140	109	92.5	90 <sup>0</sup> <sub>-0.035</sub>	73 <sup>+0.03</sup> <sub>0</sub>	16.5	32	27	49	123	9	61	M8	50	4600	13281
RFE05050	50	50	7.938	1.7x2	3219	7703	120 <sup>0</sup> <sub>-0.008</sub>	156	-	112	100 <sup>0</sup> <sub>-0.035</sub>	90 <sup>+0.035</sup> <sub>0</sub>	25	-	40	71.5	136	11	75	M10	50	6512	19430

Unit: mm

Model No.	d	d1	Row	Support Bearing Load Rating		Spline Nut Dimension												Ball Spline Load Rating	
				Ca (kgf)	Coa (kgf)	D	A	L	B	E	J	K	P	X	W	Y	Ca (kgf)	Coa (kgf)	
RLF016	16	8	2	942	2349	52 <sup>0</sup> <sub>-0.007</sub>	68	50	39.5 <sup>0</sup> <sub>-0.025</sub>	10	21.5	36.5	60	4.5	32	M5	545	849	
RLF020	20	10	2	1298	3071	56 <sup>0</sup> <sub>-0.007</sub>	72	63	43.5 <sup>0</sup> <sub>-0.025</sub>	12	23.5	47.5	64	4.5	36	M5	724	1109	
RLF025	25	15	4	693	2217	62 <sup>0</sup> <sub>-0.007</sub>	78	71	53 <sup>0</sup> <sub>-0.03</sub>	13	26.5	52	70	4.5	45	M6	1003	1593	
RLF032	32	16	4	2240	2680	80 <sup>0</sup> <sub>-0.007</sub>	105	80	65.5 <sup>0</sup> <sub>-0.03</sub>	17	29.5	58	91	6.6	55	M6	1160	1960	
RLF040	40	20	4	3373	9786	100 <sup>0</sup> <sub>-0.008</sub>	130	100	79.5 <sup>0</sup> <sub>-0.03</sub>	23	40	67	113	9	68	M6	2972	4033	
RLF050	50	26	4	4886	15270	120 <sup>0</sup> <sub>-0.008</sub>	156	125	99.5 <sup>0</sup> <sub>-0.035</sub>	25	40	88	136	11	85	M10	4086	5615	

# NSV Series Specifications



Unit: mm

Model No.	d	l	Da	n	Support Bearing Load Rating		Ball Screw Nut Dimension																	Screw Nut Load Rating	
					Ca (kgf)	Coa (kgf)	D	A	B	L	C	F	E	H	J	K	P	X	W	Y	θ	Ca (kgf)	Coa (kgf)		
NSV01616	16	16	2.778	1.7x2	605	1142	52 <sup>0</sup> <sub>-0.007</sub>	68	50	41.9	40 <sup>0</sup> <sub>-0.025</sub>	32 <sup>+0.025</sup> <sub>0</sub>	10.4	14.9	16	25.5	60	4.5	25	M4	40	1021	2409		
NSV02020	20	20	3.175	1.7x2	896	1865	62 <sup>0</sup> <sub>-0.007</sub>	78	61	51	50 <sup>0</sup> <sub>-0.025</sub>	39 <sup>+0.025</sup> <sub>0</sub>	11	15.5	19	32	70	4.5	31	M5	40	1321	3320		
NSV02525	25	25	3.969	1.7x2	918	2033	72 <sup>0</sup> <sub>-0.007</sub>	92	71	58	58 <sup>0</sup> <sub>-0.03</sub>	47 <sup>+0.025</sup> <sub>0</sub>	15.5	21.5	19	34	81	5.5	38	M6	40	1974	5188		
NSV03232	32	32	4.762	1.7x2	1511	3310	80 <sup>0</sup> <sub>-0.007</sub>	105	-	76	66 <sup>0</sup> <sub>-0.03</sub>	58 <sup>+0.03</sup> <sub>0</sub>	21	-	29.5	52.5	91	6.6	48	M6	40	2876	8207		
NSV04040	40	40	6.35	1.7x2	2385	5830	110 <sup>0</sup> <sub>-0.008</sub>	140	109	92.5	90 <sup>0</sup> <sub>-0.035</sub>	73 <sup>+0.03</sup> <sub>0</sub>	16.5	32	27	49	123	9	61	M8	50	4600	13281		
NSV05050	50	50	7.938	1.7x2	3219	7703	120 <sup>0</sup> <sub>-0.008</sub>	156	-	112	100 <sup>0</sup> <sub>-0.035</sub>	90 <sup>+0.035</sup> <sub>0</sub>	25	-	40	71.5	136	11	75	M10	50	6512	19430		

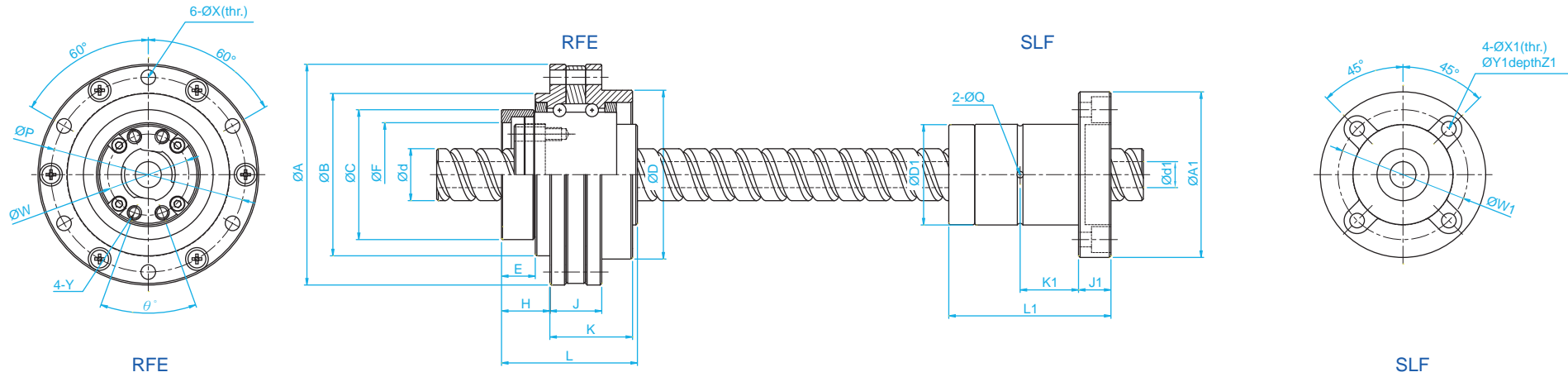
Unit: mm

Model No.	d1	Row	Support Bearing Load Rating		Spline Nut Dimension													Ball Spline Load Rating	
			Ca (kgf)	Coa (kgf)	D1	A1	L1	B1	E1	J1	K1	P1	X1	W1	Y1	Ca (kgf)	Coa (kgf)		
NSV01616	11	2	942	2349	52 <sup>0</sup> <sub>-0.007</sub>	68	50	39.5 <sup>0</sup> <sub>-0.025</sub>	10	21.5	36.5	60	4.5	32	M5	545	849		
NSV02020	14	2	1298	3071	56 <sup>0</sup> <sub>-0.007</sub>	72	63	43.5 <sup>0</sup> <sub>-0.025</sub>	12	23.5	47.5	64	4.5	36	M5	724	1109		
NSV02525	18	4	693	2217	62 <sup>0</sup> <sub>-0.007</sub>	78	71	53 <sup>0</sup> <sub>-0.03</sub>	13	26.5	52	70	4.5	45	M6	1003	1593		
NSV03232	23	4	2240	2680	80 <sup>0</sup> <sub>-0.007</sub>	105	80	65.5 <sup>0</sup> <sub>-0.03</sub>	17	29.5	58	91	6.6	55	M6	1160	1960		
NSV04040	29	4	3373	9786	100 <sup>0</sup> <sub>-0.008</sub>	130	100	79.5 <sup>0</sup> <sub>-0.03</sub>	23	40	67	113	9	68	M6	2972	4033		
NSV05050	36	4	4886	15270	120 <sup>0</sup> <sub>-0.008</sub>	156	125	99.5 <sup>0</sup> <sub>-0.035</sub>	25	40	88	136	11	85	M10	4086	5615		

ROTARY BALL SCREW/SPLINE



### NSH Series Specifications



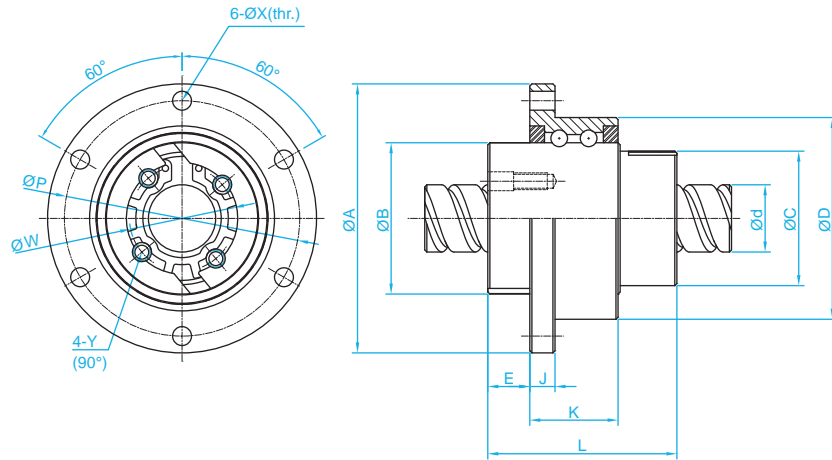
Unit: mm

Model No.	d	l	Da	n	Support Bearing Load Rating		Ball Screw Nut Dimension														Screw Nut Load Rating		
					Ca (kgf)	Coa (kgf)	D	A	B	L	C	F	E	H	J	K	P	X	W	Y	θ	Ca (kgf)	Coa (kgf)
NSH01616	16	16	2.778	1.7x2	605	1142	52 <sup>0</sup> <sub>-0.007</sub>	68	50	41.9	40 <sup>0</sup> <sub>-0.025</sub>	32 <sup>+0.025</sup> <sub>0</sub>	10.4	14.9	16	25.5	60	4.5	25	M4	40	1021	2409
NSH02020	20	20	3.175	1.7x2	896	1865	62 <sup>0</sup> <sub>-0.007</sub>	78	61	51	50 <sup>0</sup> <sub>-0.025</sub>	39 <sup>+0.025</sup> <sub>0</sub>	11	15.5	19	32	70	4.5	31	M5	40	1321	3320
NSH02525	25	25	3.969	1.7x2	918	2033	72 <sup>0</sup> <sub>-0.007</sub>	92	71	58	58 <sup>0</sup> <sub>-0.03</sub>	47 <sup>+0.025</sup> <sub>0</sub>	15.5	21.5	19	34	81	5.5	38	M6	40	1974	5188
NSH03232	32	32	4.762	1.7x2	1511	3310	80 <sup>0</sup> <sub>-0.007</sub>	105	-	76	66 <sup>0</sup> <sub>-0.03</sub>	58 <sup>+0.03</sup> <sub>0</sub>	21	-	29.5	52.5	91	6.6	48	M6	40	2876	8207
NSH04040	40	40	6.35	1.7x2	2385	5830	110 <sup>0</sup> <sub>-0.008</sub>	140	109	92.5	90 <sup>0</sup> <sub>-0.035</sub>	73 <sup>+0.03</sup> <sub>0</sub>	16.5	32	27	49	123	9	61	M8	50	4600	13281
NSH05050	50	50	7.938	1.7x2	3219	7703	120 <sup>0</sup> <sub>-0.008</sub>	156	-	112	100 <sup>0</sup> <sub>-0.035</sub>	90 <sup>+0.035</sup> <sub>0</sub>	25	-	40	71.5	136	11	75	M10	50	6512	19430

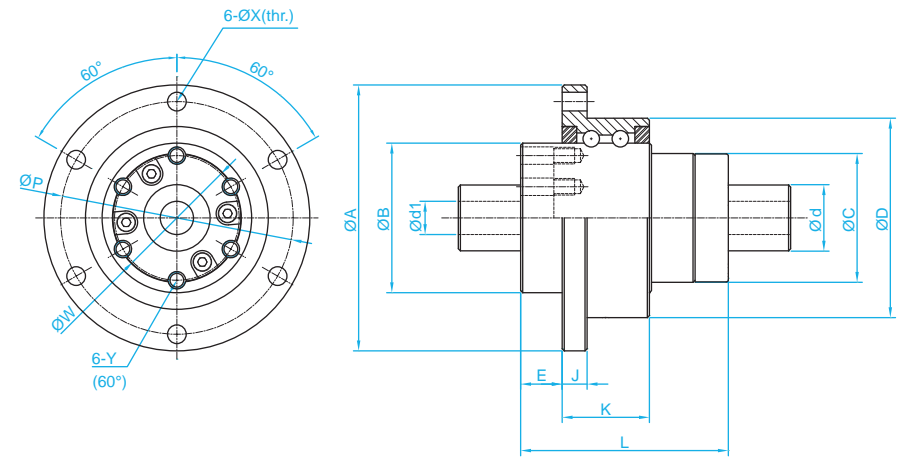
Unit: mm

Model No.	d1	Row	Spline Nut Dimension										Ball Spline Load Rating	
			D1	A1	L1	J1	K1	W1	X1	Y1	Z1	Q	Ca (kgf)	Coa (kgf)
NSH01616	11	2	31 <sup>0</sup> <sub>-0.013</sub>	51	50	10	18	40	4.5	8	6	2	545	849
NSH02020	14	2	35 <sup>0</sup> <sub>-0.016</sub>	58	56	10	18	45	5.5	9.5	5.4	2	724	1109
NSH02525	18	4	42 <sup>0</sup> <sub>-0.016</sub>	65	71	13	26.5	52	5.5	9.5	8	3	1003	1593
NSH03232	23	4	49 <sup>0</sup> <sub>-0.016</sub>	77	80	13	30	62	6.6	11	6.5	3	1160	1960
NSH04040	29	4	64 <sup>0</sup> <sub>-0.019</sub>	100	100	18	36	82	9	14	12	4	2972	4033
NSH05050	36	4	80 <sup>0</sup> <sub>-0.019</sub>	124	125	20	46.5	102	11	17.5	12	4	4086	5615

### RFSY Series Specifications



### RLSF Series Specifications



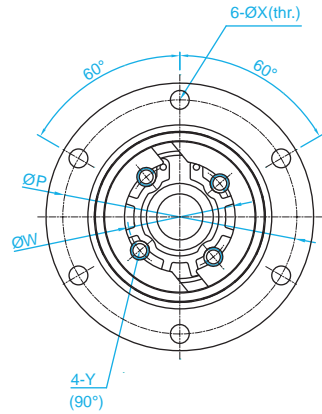
Unit: mm

Model No.	d	l	Da	n	Support Bearing Load Rating		Ball Screw Nut Dimension														Screw Nut Load Rating	
					Ca (kgf)	Coa (kgf)	D	A	B	L	C	E	J	K	P	X	W	Y	Ca (kgf)	Coa (kgf)		
RFSY01616	16	16	2.778	1.8x2	814	1787	48	-0.009 -0.025	64	36	0 -0.025	45	32	10	6	21	56	4.5	25	M4	1073	2551
RFSY02020	20	20	3.175	1.8x2	880	2188	56	-0.01 -0.029	72	43.5	0 -0.025	52	39	11	6	21	64	4.5	31	M5	1387	3515
RFSY02525	25	25	3.969	1.8x2	1222	3149	66	-0.01 -0.029	86	52	0 -0.03	64	47	13	7	25	75	5.5	38	M6	2074	5494
RFSY03232	32	32	4.762	1.8x2	1331	3914	78	-0.01 -0.029	103	63	0 -0.03	78	58	14	8	25	89	6.6	48	M6	3021	8690
RFSY04040	40	40	6.35	1.8x2	2128	6299	100	-0.012 -0.034	130	79.5	0 -0.035	99	73	16.5	10	33	113	9	61	M8	4831	14062

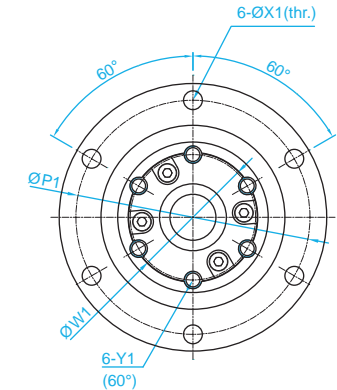
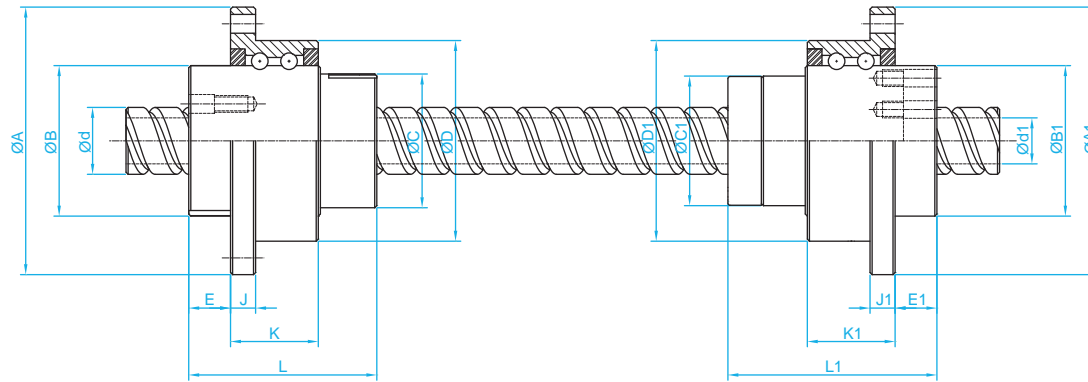
Unit: mm

Model No.	d	d1	Row	Support Bearing Load Rating		Spline Nut Dimension														Ball Spline Load Rating	
				Ca (kgf)	Coa (kgf)	D	A	B	L	C	E	J	K	P	X	W	Y	Ca (kgf)	Coa (kgf)		
RLSF016	16	8	2	814	1787	48	-0.009 -0.025	64	36	0 -0.025	50	31	10	6	21	56	4.5	30	M4	545	849
RLSF020	20	10	2	880	2188	56	-0.01 -0.029	72	43.5	0 -0.025	63	35	12	6	21	64	4.5	36	M5	736	1124
RLSF025	25	15	4	1222	3149	66	-0.01 -0.029	86	52	0 -0.03	71	42	13	7	25	75	5.5	44	M5	1003	1593
RLSF032	32	16	4	1331	3914	78	-0.01 -0.029	103	63	0 -0.03	80	52	17	8	25	89	6.6	54	M6	1324	2251
RLSF040	40	20	4	2128	6299	100	-0.012 -0.034	130	79.5	0 -0.035	100	64	20	10	33	113	9	68	M6	2972	4033

### RSSY Series Specifications



RFSY



RLSF

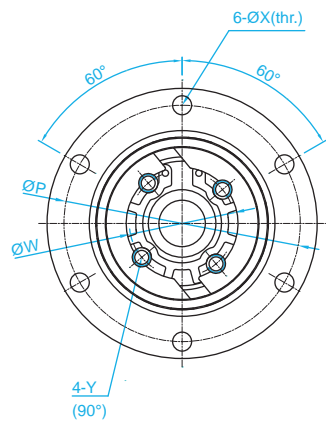
Unit: mm

Model No.	d	l	Da	n	Support Bearing Load Rating		Ball Screw Nut Dimension												Screw Nut Load Rating			
					Ca (kgf)	Coa (kgf)	D	A	B	L	C	E	J	K	P	X	W	Y	Ca (kgf)	Coa (kgf)		
RSSY01616	16	16	2.778	1.8x2	814	1787	48	-0.009 -0.025	64	36	0 -0.025	45	32	10	6	21	56	4.5	25	M4	1073	2551
RSSY02020	20	20	3.175	1.8x2	880	2188	56	-0.01 -0.029	72	43.5	0 -0.025	52	39	11	6	21	64	4.5	31	M5	1387	3515
RSSY02525	25	25	3.969	1.8x2	1222	3149	66	-0.01 -0.029	86	52	0 -0.03	64	47	13	7	25	75	5.5	38	M6	2074	5494
RSSY03232	32	32	4.762	1.8x2	1331	3914	78	-0.01 -0.029	103	63	0 -0.03	78	58	14	8	25	89	6.6	48	M6	3021	8690
RSSY04040	40	40	6.35	1.8x2	2128	6299	100	-0.012 -0.034	130	79.5	0 -0.035	99	73	16.5	10	33	113	9	61	M8	4831	14062

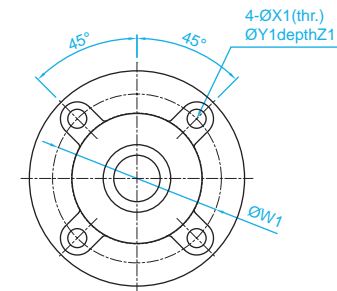
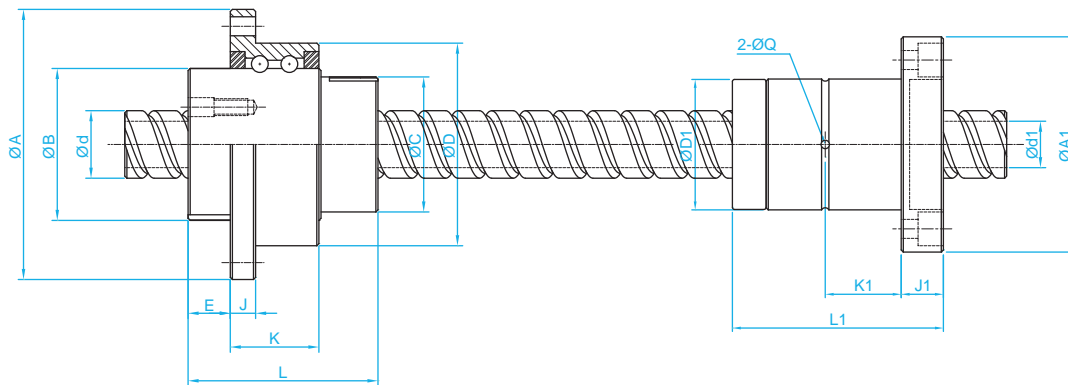
Unit: mm

Model No.	d	d1	Row	Support Bearing Load Rating		Spline Nut Dimension												Ball Spline Load Rating			
				Ca (kgf)	Coa (kgf)	D1	A1	B1	L1	C1	E1	J1	K1	P1	X1	W1	Y1	Ca (kgf)	Coa (kgf)		
RSSY01616	16	11	2	814	1787	48	-0.009 -0.025	64	36	0 -0.025	50	31	10	6	21	56	4.5	30	M4	545	849
RSSY02020	20	14	2	880	2188	56	-0.01 -0.029	72	43.5	0 -0.025	63	35	12	6	21	64	4.5	36	M5	736	1124
RSSY02525	25	18	4	1222	3149	66	-0.01 -0.029	86	52	0 -0.03	71	42	13	7	25	75	5.5	44	M5	1003	1593
RSSY03232	32	23	4	1331	3914	78	-0.01 -0.029	103	63	0 -0.03	80	52	17	8	25	89	6.6	54	M6	1324	2251
RSSY04040	40	29	4	2128	6299	100	-0.012 -0.034	130	79.5	0 -0.035	100	64	20	10	33	113	9	68	M6	2972	4033

# RSLY Series Specifications



RFSY



SLF

Unit: mm

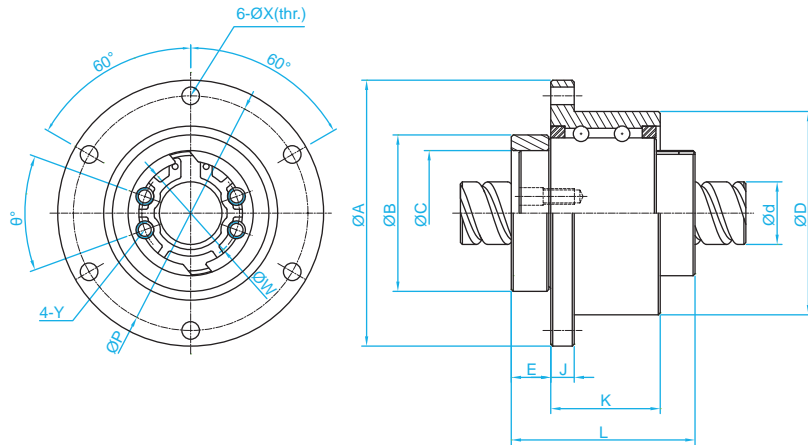
Model No.	d	l	Da	n	Support Bearing Load Rating		Ball Screw Nut Dimension												Screw Nut Load Rating			
					Ca (kgf)	Coa (kgf)	D	A	B	L	C	E	J	K	P	X	W	Y	Ca (kgf)	Coa (kgf)		
RSLY01616	16	16	2.778	1.8x2	814	1787	48	-0.009 -0.025	64	36	0 -0.025	45	32	10	6	21	56	4.5	25	M4	1073	2551
RSLY02020	20	20	3.175	1.8x2	880	2188	56	-0.01 -0.029	72	43.5	0 -0.025	52	39	11	6	21	64	4.5	31	M5	1387	3515
RSLY02525	25	25	3.969	1.8x2	1222	3149	66	-0.01 -0.029	86	52	0 -0.03	64	47	13	7	25	75	5.5	38	M6	2074	5494
RSLY03232	32	32	4.762	1.8x2	1331	3914	78	-0.01 -0.029	103	63	0 -0.03	78	58	14	8	25	89	6.6	48	M6	3021	8690
RSLY04040	40	40	6.35	1.8x2	2128	6299	100	-0.012 -0.034	130	79.5	0 -0.035	99	73	16.5	10	33	113	9	61	M8	4831	14062

Unit: mm

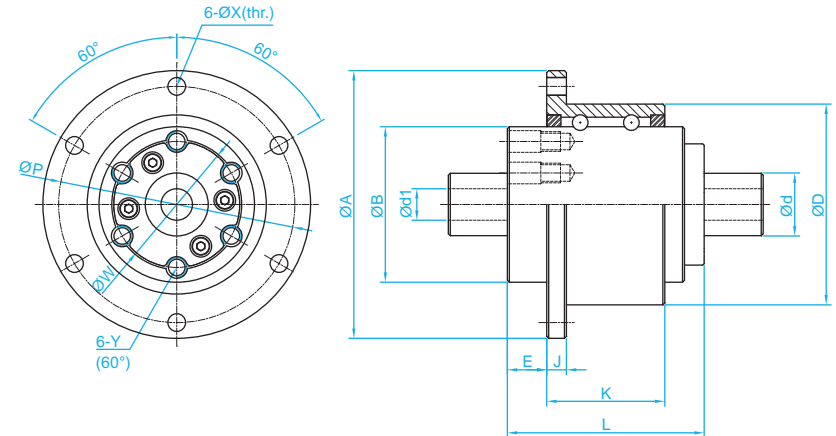
Model No.	d	d1	Row	Spline Nut Dimension										Ball Spline Load Rating		
				D1	A1	L1	J1	K1	W1	X1	Y1	Z1	Q	Ca (kgf)	Coa (kgf)	
RSLY01616	16	11	2	31	0 -0.013	51	50	10	18	40	4.5	8	6	2	545	849
RSLY02020	20	14	2	35	0 -0.016	58	56	10	18	45	5.5	9.5	5.4	2	724	1109
RSLY02525	25	18	4	42	0 -0.016	65	71	13	26.5	52	5.5	9.5	8	3	1003	1593
RSLY03232	32	23	4	49	0 -0.016	77	80	13	30	62	6.6	11	6.5	3	1324	2251
RSLY04040	40	29	4	64	0 -0.019	100	100	18	36	82	9	14	12	4	2972	4033

ROTARY BALL SCREW / SPLINE

### RFBY Series Specifications



### RLBF Series Specifications



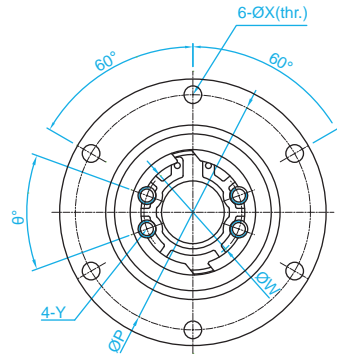
Unit: mm

Model No.	d	l	Da	n	Support Bearing Load Rating		Ball Screw Nut Dimension														Screw Nut Load Rating	
					Ca (kgf)	Coa (kgf)	D	A	B	L	C	E	J	K	P	X	W	Y	θ	Ca (kgf)	Coa (kgf)	
RFBY01616	16	16	2.778	1.8x2	626	1297	52 <sup>0</sup> <sub>-0.007</sub>	68	40 <sup>0</sup> <sub>-0.025</sub>	47	32 <sup>+0.025</sup> <sub>0</sub>	10.1	6	28	60	4.5	25	M4	40	1073	2551	
RFBY02020	20	20	3.175	1.8x2	993	2212	62 <sup>0</sup> <sub>-0.007</sub>	78	50 <sup>0</sup> <sub>-0.025</sub>	53.5	39 <sup>+0.025</sup> <sub>0</sub>	11	7	34.5	70	4.5	31	M5	40	1387	3515	
RFBY02525	25	25	3.969	1.8x2	1042	2495	72 <sup>0</sup> <sub>-0.007</sub>	92	58 <sup>0</sup> <sub>-0.03</sub>	65	47 <sup>+0.025</sup> <sub>0</sub>	15.8	8	35	81	5.5	38	M6	40	2074	5494	
RFBY03232	32	32	4.762	1.8x2	1669	3915	80 <sup>0</sup> <sub>-0.007</sub>	105	66 <sup>0</sup> <sub>-0.03</sub>	81	58 <sup>+0.03</sup> <sub>0</sub>	21.5	9	42.5	91	6.6	48	M6	40	3021	8690	
RFBY04040	40	40	6.35	1.8x2	2965	6922	110 <sup>0</sup> <sub>-0.008</sub>	140	90 <sup>0</sup> <sub>-0.035</sub>	102	73 <sup>+0.03</sup> <sub>0</sub>	16.5	11	64.5	123	9	61	M8	50	4831	14062	
RFBY05050	50	50	7.938	1.8x2	4029	9327	120 <sup>0</sup> <sub>-0.008</sub>	156	100 <sup>0</sup> <sub>-0.035</sub>	121	90 <sup>+0.035</sup> <sub>0</sub>	29	12	70	136	11	75	M10	50	7220	21974	

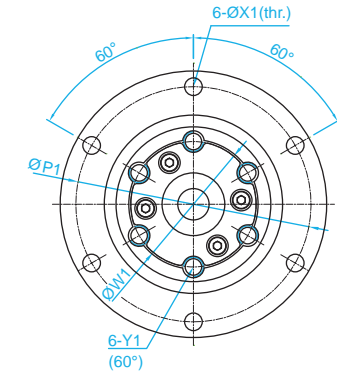
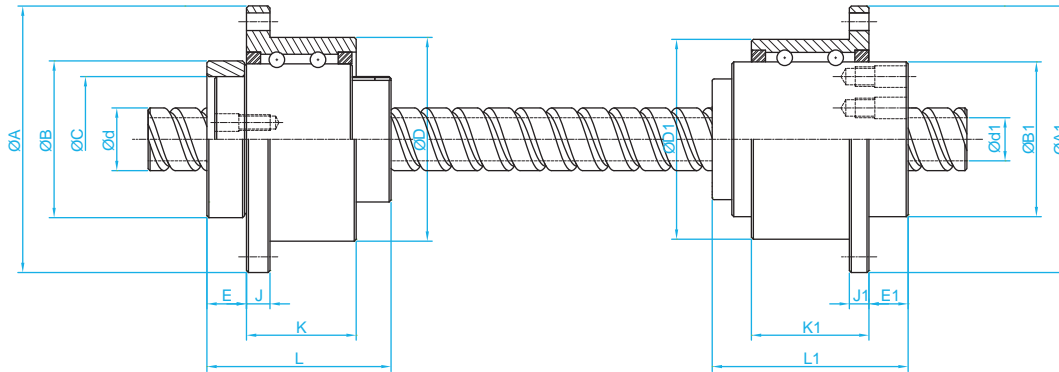
Unit: mm

Model No.	d	d1	Row	Support Bearing Load Rating		Spline Nut Dimension														Ball Spline Load Rating	
				Ca (kgf)	Coa (kgf)	D	A	B	L	E	J	K	P	X	W	Y	Ca (kgf)	Coa (kgf)			
RLBF016	16	8	2	746	1741	52 <sup>0</sup> <sub>-0.007</sub>	68	39.5 <sup>0</sup> <sub>-0.025</sub>	50	10	5	30	60	4.5	32	M5	545	849			
RLBF020	20	10	2	1129	2575	56 <sup>0</sup> <sub>-0.007</sub>	72	43.5 <sup>0</sup> <sub>-0.025</sub>	63	12	6	42	64	4.5	36	M5	736	1124			
RLBF025	25	15	4	691	2171	62 <sup>0</sup> <sub>-0.007</sub>	78	53 <sup>0</sup> <sub>-0.03</sub>	71	13	6	49	70	4.5	45	M6	1003	1593			
RLBF032	32	16	4	2003	5259	80 <sup>0</sup> <sub>-0.007</sub>	105	65.5 <sup>0</sup> <sub>-0.03</sub>	80	17	9	54	91	6.6	55	M6	1324	2251			
RLBF040	40	20	4	3944	12568	100 <sup>0</sup> <sub>-0.008</sub>	130	79.5 <sup>0</sup> <sub>-0.03</sub>	100	23	11	63	113	9	68	M6	2972	4033			
RLBF050	50	26	4	5421	18169	120 <sup>0</sup> <sub>-0.008</sub>	156	99.5 <sup>0</sup> <sub>-0.035</sub>	125	25	12	87	136	11	85	M10	4086	5615			

### RBBY Series Specifications



RBBY



RBBY

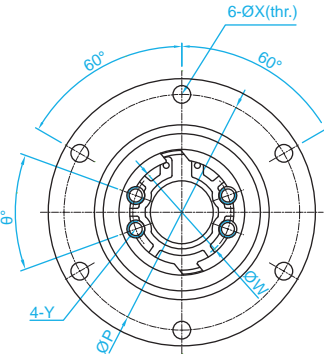
Unit: mm

Model No.	d	l	Da	n	Support Bearing Load Rating		Ball Screw Nut Dimension														Screw Nut Load Rating	
					Ca (kgf)	Coa (kgf)	D	A	B	L	C	E	J	K	P	X	W	Y	θ	Ca (kgf)	Coa (kgf)	
RBBY01616	16	16	2.778	1.8x2	626	1297	52 <sup>0</sup> <sub>-0.007</sub>	68	40 <sup>0</sup> <sub>-0.025</sub>	47	32 <sup>+0.025</sup> <sub>0</sub>	10.1	6	28	60	4.5	25	M4	40	1073	2551	
RBBY02020	20	20	3.175	1.8x2	993	2212	62 <sup>0</sup> <sub>-0.007</sub>	78	50 <sup>0</sup> <sub>-0.025</sub>	53.5	39 <sup>+0.025</sup> <sub>0</sub>	11	7	34.5	70	4.5	31	M5	40	1387	3515	
RBBY02525	25	25	3.969	1.8x2	1042	2495	72 <sup>0</sup> <sub>-0.007</sub>	92	58 <sup>0</sup> <sub>-0.03</sub>	65	47 <sup>+0.025</sup> <sub>0</sub>	15.8	8	35	81	5.5	38	M6	40	2074	5494	
RBBY03232	32	32	4.762	1.8x2	1669	3915	80 <sup>0</sup> <sub>-0.007</sub>	105	66 <sup>0</sup> <sub>-0.03</sub>	81	58 <sup>+0.03</sup> <sub>0</sub>	21.5	9	42.5	91	6.6	48	M6	40	3021	8690	
RBBY04040	40	40	6.35	1.8x2	2965	6922	110 <sup>0</sup> <sub>-0.008</sub>	140	90 <sup>0</sup> <sub>-0.035</sub>	102	73 <sup>+0.03</sup> <sub>0</sub>	16.5	11	64.5	123	9	61	M8	50	4831	14062	
RBBY05050	50	50	7.938	1.8x2	4029	9327	120 <sup>0</sup> <sub>-0.008</sub>	156	100 <sup>0</sup> <sub>-0.035</sub>	121	90 <sup>+0.035</sup> <sub>0</sub>	29	12	70	136	11	75	M10	50	7220	21974	

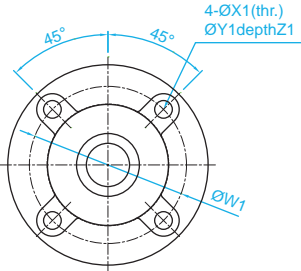
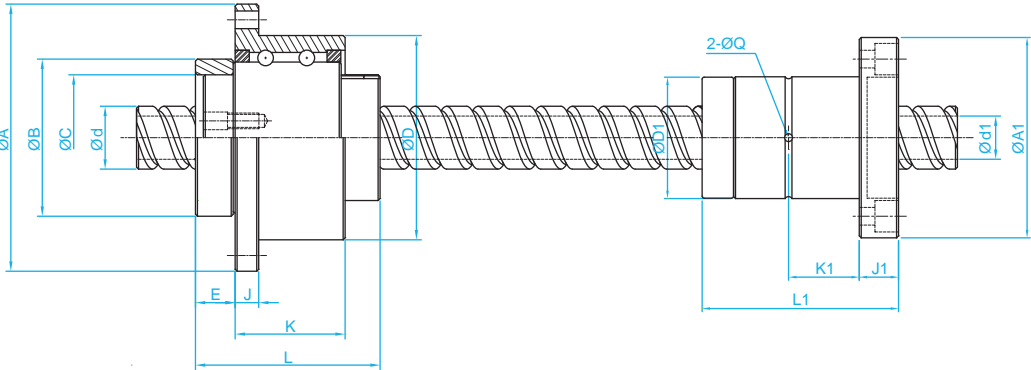
Unit: mm

Model No.	d	d1	Row	Support Bearing Load Rating		Spline Nut Dimension														Ball Spline Load Rating	
				Ca (kgf)	Coa (kgf)	D1	A1	B1	L1	E1	J1	K1	P1	X1	W1	Y1	Ca (kgf)	Coa (kgf)			
RBBY01616	16	11	2	746	1741	52 <sup>0</sup> <sub>-0.007</sub>	68	39.5 <sup>0</sup> <sub>-0.025</sub>	50	10	5	30	60	4.5	32	M5	545	849			
RBBY02020	20	14	2	1129	2575	56 <sup>0</sup> <sub>-0.007</sub>	72	43.5 <sup>0</sup> <sub>-0.025</sub>	63	12	6	42	64	4.5	36	M5	736	1124			
RBBY02525	25	18	4	691	2171	62 <sup>0</sup> <sub>-0.007</sub>	78	53 <sup>0</sup> <sub>-0.03</sub>	71	13	6	49	70	4.5	45	M6	1003	1593			
RBBY03232	32	23	4	2003	5259	80 <sup>0</sup> <sub>-0.007</sub>	105	65.5 <sup>0</sup> <sub>-0.03</sub>	80	17	9	54	91	6.6	55	M6	1324	2251			
RBBY04040	40	29	4	3944	12568	100 <sup>0</sup> <sub>-0.008</sub>	130	79.5 <sup>0</sup> <sub>-0.03</sub>	100	23	11	63	113	9	68	M6	2972	4033			
RBBY05050	50	36	4	5421	18169	120 <sup>0</sup> <sub>-0.008</sub>	156	99.5 <sup>0</sup> <sub>-0.035</sub>	125	25	12	87	136	11	85	M10	4086	5615			

RBLY Series Specifications



RFBY



SLF

Unit:mm

Model No.	d	l	Da	n	Support Bearing Load Rating		Ball Screw Nut Dimension														Screw Nut Load Rating	
					Ca (kgf)	Coa (kgf)	D	A	B	L	C	E	J	K	P	X	W	Y	θ	Ca (kgf)	Coa (kgf)	
RBLY01616	16	16	2.778	1.8x2	626	1297	52 <sup>0</sup> <sub>-0.007</sub>	68	40 <sup>0</sup> <sub>-0.025</sub>	47	32 <sup>+0.025</sup> <sub>0</sub>	10.1	6	28	60	4.5	25	M4	40	1073	2551	
RBLY02020	20	20	3.175	1.8x2	993	2212	62 <sup>0</sup> <sub>-0.007</sub>	78	50 <sup>0</sup> <sub>-0.025</sub>	53.5	39 <sup>+0.025</sup> <sub>0</sub>	11	7	34.5	70	4.5	31	M5	40	1387	3515	
RBLY02525	25	25	3.969	1.8x2	1042	2495	72 <sup>0</sup> <sub>-0.007</sub>	92	58 <sup>0</sup> <sub>-0.03</sub>	65	47 <sup>+0.025</sup> <sub>0</sub>	15.8	8	35	81	5.5	38	M6	40	2074	5494	
RBLY03232	32	32	4.762	1.8x2	1669	3915	80 <sup>0</sup> <sub>-0.007</sub>	105	66 <sup>0</sup> <sub>-0.03</sub>	81	58 <sup>+0.03</sup> <sub>0</sub>	21.5	9	42.5	91	6.6	48	M6	40	3021	8690	
RBLY04040	40	40	6.35	1.8x2	2965	6922	110 <sup>0</sup> <sub>-0.008</sub>	140	90 <sup>0</sup> <sub>-0.035</sub>	102	73 <sup>+0.03</sup> <sub>0</sub>	16.5	11	64.5	123	9	61	M8	50	4831	14062	
RBLY05050	50	50	7.938	1.8x2	4029	9327	120 <sup>0</sup> <sub>-0.008</sub>	156	100 <sup>0</sup> <sub>-0.035</sub>	121	90 <sup>+0.035</sup> <sub>0</sub>	29	12	70	136	11	75	M10	50	7220	21974	

Unit:mm

Model No.	d	d1	Row	Spline Nut Dimension										Ball Spline Load Rating	
				D1	A1	L1	J1	K1	W1	X1	Y1	Z1	Q	Ca (kgf)	Coa (kgf)
RBLY01616	16	11	2	31 <sup>0</sup> <sub>-0.013</sub>	51	50	10	18	40	4.5	8	6	2	545	849
RBLY02020	20	14	2	35 <sup>0</sup> <sub>-0.016</sub>	58	56	10	18	45	5.5	9.5	5.4	2	724	1109
RBLY02525	25	18	4	42 <sup>0</sup> <sub>-0.016</sub>	65	71	13	26.5	52	5.5	9.5	8	3	1003	1593
RBLY03232	32	23	4	49 <sup>0</sup> <sub>-0.016</sub>	77	80	13	30	62	6.6	11	6.5	3	1324	2251
RBLY04040	40	29	4	64 <sup>0</sup> <sub>-0.019</sub>	100	100	18	36	82	9	14	12	4	2972	4033
RBLY05050	50	36	4	80 <sup>0</sup> <sub>-0.019</sub>	124	125	20	46.5	102	11	17.5	12	4	4086	5615

ROTARY BALL SCREW/SPLINE