

Customized products

In order to meet the needs of customer's requested design, we offer customized products. To reduce design process at customer, each Nut type is standardized.

●Variety of Customized products

Customized Precision Ball Screws and Rolled Ball Screws are both standardized in Ball Nut dimension only. Please refer to following description about Standardized Ball Nut type. If you need special Ball Nut other than below, feel free to ask KSS.

KSS will provide with required Ball Nut as a special order.

●Single Nut with Flange



Precision & Rolled Ball Screws

It is the most simple Single Nut type. Normally Ball Screws are used with small Axial play, but using oversized Balls allows the application of light preloading and eliminates backlash (only Precision grade). Nut should be mounted using bolt holes in Flange. FBS, MRB (Return-plate), FKB (Internal-deflector), FDB (End-deflector), FEB (End-cap) circulation system can be distinguished. Please refer to dimension table.

●Sleeve type Single Nut



Precision & Rolled Ball Screws

It is Cylindrical Single Nut which is compact. Alike Single Nut with Flange, Axial play can be eliminated (only Precision grade). The Nut should be mounted by clamping on the key way on the Nut outer and Nut end surface.

●Single Nut with M-thread



Precision & Rolled Ball Screws

The Cylindrical type with M-thread at the Nut end. The Nut should be mounted using M-thread. It is suitable for mounting with cylinder.

●Square type Single Nut



Precision Ball Screws only

The Square Nut is finished with a large mounting face parallel to the Nut center. Nut itself has Housing function. This allows more compact design compared to Flange type.

●Bi-directional Nut with Flange



Precision Ball Screws only

Since there are both Right-handed thread and Left-handed thread on a Shaft, it has Bi-directional function.

Single Nut with Flange type is standardized, but it is also possible to manufacture Sleeve type Nut. In addition, absolute position control for both Nut is available.

●Others



Double Nut with Flange

KSS can provide Double Nut style as one of choices for pre-loaded Ball Screws as special customized products.

Please ask KSS representative if necessary.



Sleeve type Double Nut

● Model number notation

FBS **04** **01** **B** — **100** **R** **120** **C3** — **05**

① ② ③ ④ — ⑤ ⑥ ⑦ ⑧ — ⑨

① Ball Nut type No.

FBS : Precision Ball Screws Single Nut with Flange
 BS : Precision Ball Screws Sleeve type Single Nut
 MS : Precision Ball Screws Single Nut with M-thread
 KS : Precision Ball Screws Square type Single Nut

MRB : Rolled Ball Screws Single Nut with Flange
 BSR : Rolled Ball Screws Sleeve type Single Nut
 MSR : Rolled Ball Screws Single Nut with M-thread

② Screw Shaft nominal diameter(mm)

③ Lead(mm)

④ Re-circulation number(In detail refer to dimension table)

⑤ Screw thread length(mm)

⑥ Thread direction(R=Right-hand, L=Left-hand)

⑦ Screw shaft total length(mm)

⑧ Accuracy grade(C0,C1,C3,C5,C7,C10)

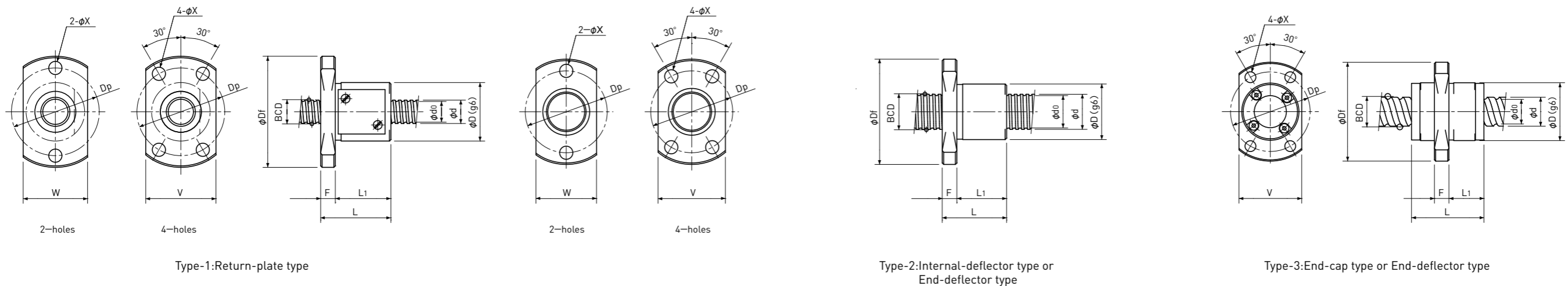
⑨ Axial play(μ m)

● Precaution

- Please refer to dimension table of each model regarding dimension, Load Rating, Rigidity.
- Please refer to Technical Description in page A801 regarding Accuracy, Axial play, Material, production range and so on.
- Shaft configuration, Shaft dimension of Customized products are not standardized.
KSS will create a Drawing based on customer's specifications.
- When designing Shaft configuration, fixed end or supported end (in case of Bi-directional Ball Screws and Rolled Ball Screw, both ends) should be smaller than Shaft Root diameter due to Nut assemble.
- Please refer to 「Precaution of storage, handling, and operating」 in page A901 in detail other than the above.

Single Nut with Flange

Backlash type/Preload type



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FBS 01800.5 A	1.8	0.5	0.4	1.95	4° 40'	1.5	2.7×1	110 / -	130 / -	19 / -	1	6	14	8.5	7	1.5	8	-	10	2.4	FBS 01800.5 A
FBS 0300.5 A	3	0.5	0.4	3.10	2° 56'	2.6	2.7×1	150 / -	220 / -	29 / -	1	8	16	11	8	3	8	-	12	2.4	FBS 0300.5 A
FBS 0301 B	3	1	0.6	3.18	5° 43'	2.4	3.7×1	330 / -	440 / -	42 / -	1	9	19	14	11	3	11	-	14	2.9	FBS 0301 B
FBS 0400.5 A	4	0.5	0.4	4.10	2° 13'	3.6	2.7×1	160 / -	290 / -	36 / -	1	10	20	13	10	3	12	-	15	2.9	FBS 0400.5 A
FKB 0401 A	4	1	0.6	4.15	4° 23'	3.4	1×3	300 / 300	430 / 430	38 / 59	2	9	19	13	10	3	11	13	14	2.9	FKB 0401 A
FBS 0401 A	4	1	0.8	4.15	4° 23'	3.3	2.7×1	420 / 270	570 / 290	40 / 34	1	10	20	12	9	3	12	14	15	2.9	FBS 0401 A
FBS 0401 B	4	1	0.8	4.15	4° 23'	3.3	3.7×1	560 / 350	790 / 400	54 / 45	1	11	23	17	13	4	13	15	17	3.4	FBS 0401 B
FBS 0402 A	4	2	0.8	4.15	8° 43'	3.3	2.7×1	420 / 260	570 / 290	39 / 33	1	11	23	19	15	4	13	15	17	3.4	FBS 0402 A
FEB 0404 A	4	4	0.8	4.2	16° 51'	3.3	2.6×2	750 / -	1150 / -	73 / -	3	11	23	17.5	11	3	-	15	17	3.4	FEB 0404 A
FEB 0408 A	4	8	0.6	4.15	31° 32'	3.4	1.7×4	590 / -	1110 / -	78 / -	3	11	23	20	12	3	-	15	17	3.4	FEB 0408 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

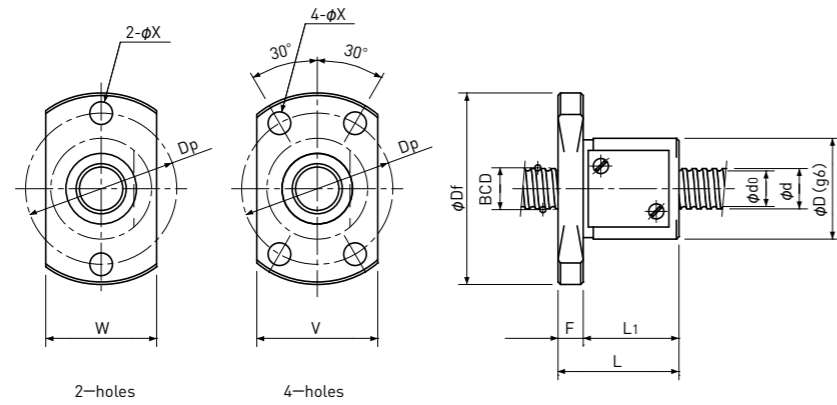
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

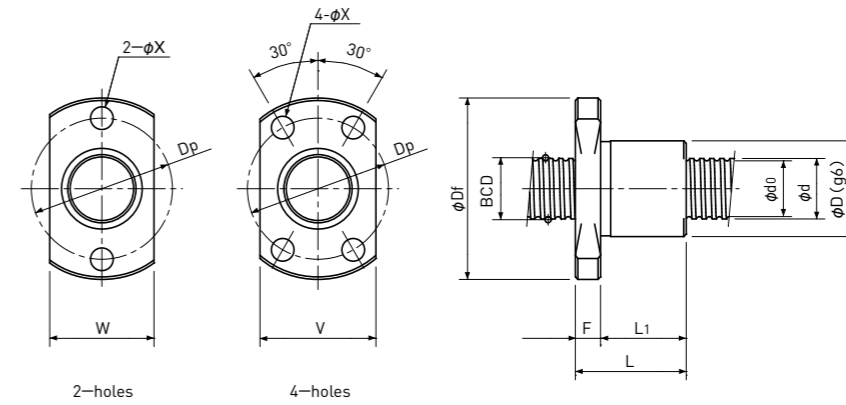
Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1:Return-plate type



Type-2:Internal-deflector type or End-deflector type

Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FBS 0500.5 A	5	0.5	0.4	5.10	1°47'	4.6	2.7×1	180 / —	370 / —	44 / —	1	11	23	13	10	3	13	—	17	3.4	FBS 0500.5 A
FKB 0501 A	5	1	0.6	5.15	3°32'	4.4	1×3	330 / 330	560 / 560	45 / 70	2	10	20	13	10	3	12	14	15	2.9	FKB 0501 A
FBS 0501 B	5	1	0.8	5.15	3°32'	4.3	3.7×1	630 / 400	1000 / 500	65 / 55	1	12	24	17	13	4	14	15	18	3.4	FBS 0501 B
FBS 0504 A	5	4	0.8	5.15	13°53'	4.3	2.7×1	470 / 300	720 / 360	47 / 39	1	12	24	22	18	4	14	15	18	3.4	FBS 0504 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca. Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

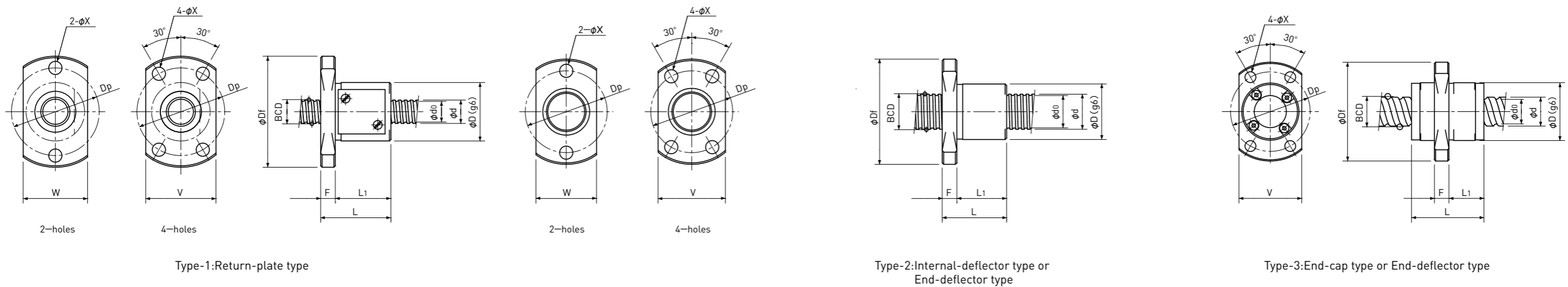
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FBS 0600.5 A	6	0.5	0.4	6.10	1°30'	5.6	2.7×1	190 / -	440 / -	50 / -	1	12	25	13	10	3	14	-	19	3.4	FBS 0600.5 A
FKB 0601 A	6	1	0.8	6.20	2°56'	5.3	1×3	560 / 560	950 / 950	55 / 86	2	11	23	14.5	11	3.5	13	15	17	3.4	FKB 0601 A
FBS 0601 B	6	1	0.8	6.15	2°58'	5.3	3.7×1	680 / 430	1200 / 610	75 / 63	1	13	28	17	13	4	15	17	21.5	3.4	FBS 0601 B
FBS 0601.5 B	6	1.5	1.0	6.20	4°24'	5.1	3.7×1	980 / 620	1600 / 800	79 / 67	1	14	28	19	15	4	16	17	22	3.4	FBS 0601.5 B
FBS 0602 A	6	2	1.0	6.20	5°52'	5.1	2.7×1	750 / 470	1200 / 590	58 / 49	1	15	29	17	13	4	17	18	23	3.4	FBS 0602 A
FBS 0602.5 A	6	2.5	1.0	6.20	7°19'	5.1	2.7×1	750 / 470	1200 / 590	59 / 49	1	15	29	18	14	4	17	18	23	3.4	FBS 0602.5 A
FEB 0606 A	6	6	1.0	6.30	16°52'	5.2	1.6×2	870 / -	1450 / -	67 / -	3	14	27	17	8	4	-	16	21	3.4	FEB 0606 A
FEB 0610 A	6	10	1.2	6.30	26°48'	5.0	1.2×2	950 / -	1600 / -	50 / -	3	14	27	23	11.5	4	-	16	21	3.4	FEB 0610 A
FEB 0612 A	6	12	1.2	6.30	31°13'	5.0	0.7×2	600 / -	950 / -	29 / -	3	14	27	16	8.3	4	-	16	21	3.4	FEB 0612 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

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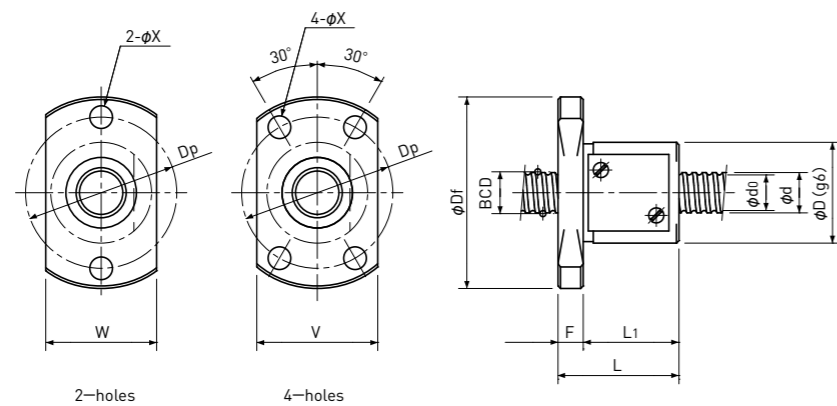
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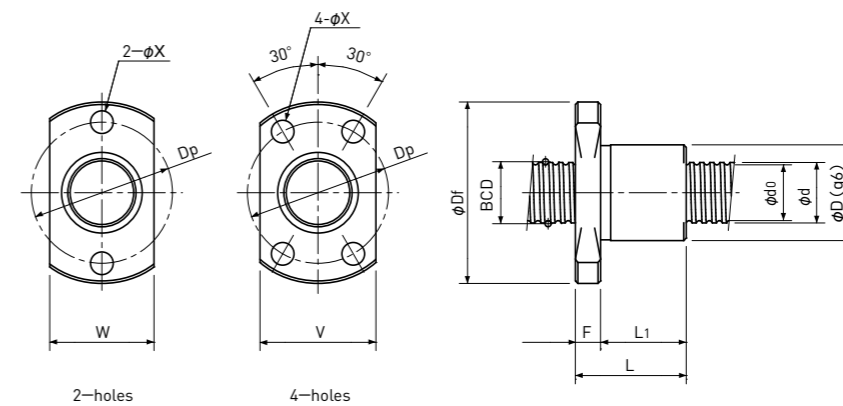
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Single Nut with Flange

Backlash type/Preload type



Type-1:Return-plate type



Type-2:Internal-deflector type or End-deflector type

Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FBS 0800.5 A	8	0.5	0.4	8.10	1°08'	7.6	2.7×1	220 / —	590 / —	64 / —	1	14	27	13	10	3	16	—	21	3.4	FBS 0800.5 A
FKB 0801 A	8	1	0.8	8.20	2°13'	7.3	1×3	650 / 650	1300 / 1300	70 / 109	2	13	26	15	11	4	15	17	20	3.4	FKB 0801 A
FBS 0801 B	8	1	0.8	8.15	2°15'	7.3	3.7×1	780 / 490	1650 / 820	95 / 80	1	16	30	17	13	4	18	18	24	3.4	FBS 0801 B
FKB 0801.5 A	8	1.5	1.0	8.30	3°18'	7.2	1×3	890 / 890	1650 / 1650	73 / 113	2	15	28	20	16	4	17	19	22	3.4	FKB 0801.5 A
FBS 0801.5 B	8	1.5	1.0	8.20	3°20'	7.1	3.7×1	1100 / 700	2200 / 1100	99 / 83	1	16	30	19	15	4	18	18	24	3.4	FBS 0801.5 B
FKB 0802 A	8	2	1.2	8.30	4°23'	7.0	1×3	1300 / 1300	2300 / 2300	77 / 121	2	15	28	18	14	4	17	19	22	3.4	FKB 0802 A
FBS 0802 B(1)	8	2	1.0	8.20	4°26'	7.1	3.7×1	1100 / 700	2200 / 1100	99 / 83	1	16	30	21	17	4	18	18	24	3.4	FBS 0802 B(1)
FBS 0802 B(2)	8	2	1.5875	8.30	4°23'	6.6	3.7×1	2400 / 1550	4100 / 2100	111 / 94	1	20	38	24	19	5	22	23	30	4.5	FBS 0802 B(2)

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

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Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

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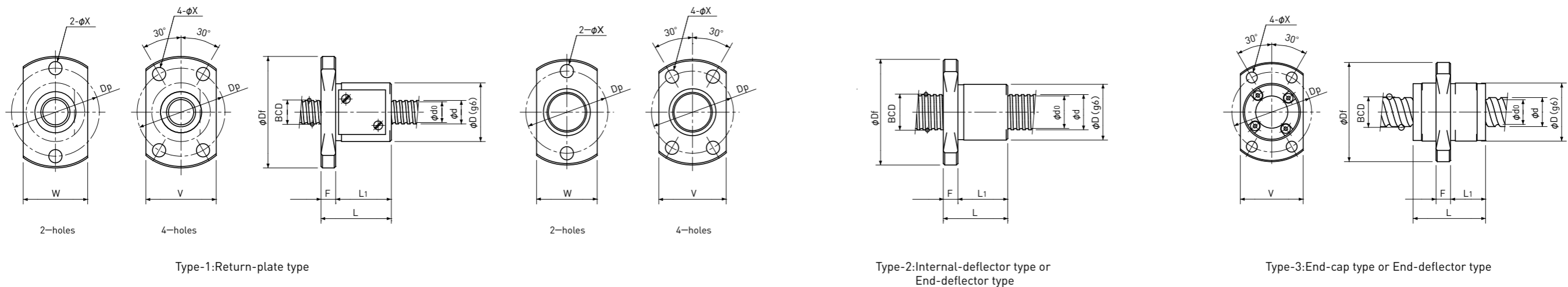
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Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Single Nut with Flange

Backlash type/Preload type



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FDB 0802.5 A	8	2.5	1.5875	8.00	5° 41'	6.3	2.7×1	1850 / -	3000 / -	80 / -	2	16	29	16	12	4	-	18	23	3.4	FDB 0802.5 A
FBS 0802.5 B	8	2.5	1.5875	8.30	5° 29'	6.6	3.7×1	2400 / 1550	4100 / 2100	111 / 93	1	20	38	26	21	5	22	23	30	4.5	FBS 0802.5 B
FBS 0803 A	8	3	2.0	8.30	6° 34'	6.2	2.7×1	2600 / 1650	4200 / 2100	85 / 70	1	20	38	25	20	5	22	23	30	4.5	FBS 0803 A
FBS 0804 A	8	4	2.0	8.30	8° 43'	6.2	2.7×1	2600 / 1650	4200 / 2100	84 / 70	1	21	39	28	23	5	23	23	31	4.5	FBS 0804 A
FBS 0805 A	8	5	1.5875	8.30	10° 51'	6.6	2.7×1	1850 / 1150	3000 / 1500	82 / 67	1	18	31	28	24	4	20	20	25	3.4	FBS 0805 A
FEB 0808 A	8	8	1.5875	8.40	16° 52'	6.7	1.6×2	2200 / -	3800 / -	95 / -	3	18	31	20	10	4	-	20	25	3.4	FEB 0808 A
FEB 0810 A	8	10	1.5875	8.40	20° 45'	6.7	1.6×2	2200 / -	3900 / -	92 / -	3	18	31	24	13	4	-	20	25	3.4	FEB 0810 A
FEB 0812 A	8	12	1.5875	8.40	24° 27'	6.7	1.6×2	2200 / -	4000 / -	90 / -	3	18	31	27	17	4	-	20	25	3.4	FEB 0812 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

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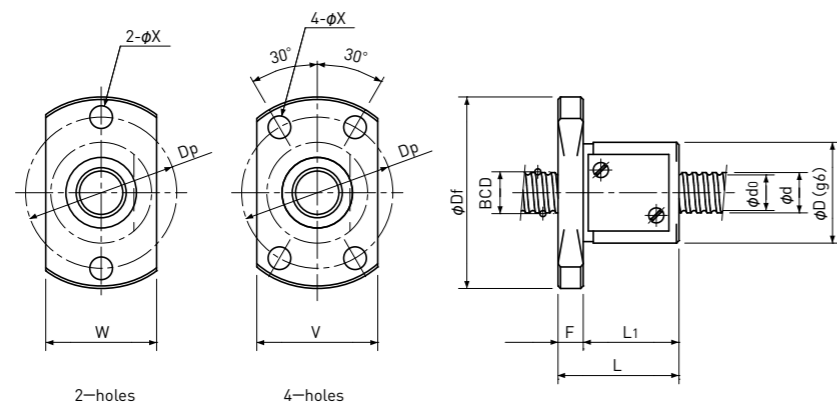
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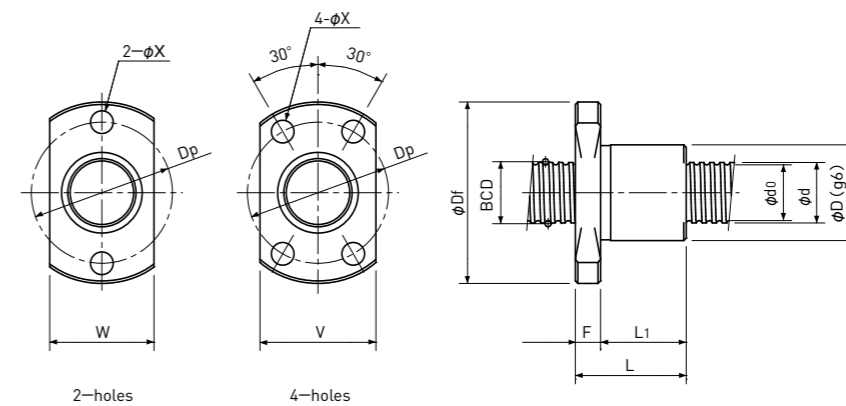
Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1:Return-plate type



Type-2:Internal-deflector type or End-deflector type

Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FKB 1001 A	10	1	0.8	10.20	1°47'	9.3	1×3	720 / 720	1650 / 1650	84 / 131	2	15	28	15	11	4	17	19	22	3.4	FKB 1001 A
FBS 1001 B	10	1	0.8	10.15	1°48'	9.3	3.7×1	840 / 530	2000 / 1000	113 / 95	1	19	37	18	13	5	21	22	29	4.5	FBS 1001 B
FKB 1001.5 A	10	1.5	1.0	10.30	2°39'	9.2	1×3	990 / 990	2100 / 2100	87 / 136	2	17	34	21	16	5	19	21	26	4.5	FKB 1001.5 A
FBS 1001.5 B	10	1.5	1.0	10.20	2°41'	9.1	3.7×1	1250 / 790	2800 / 1400	120 / 101	1	19	37	20	15	5	21	22	29	4.5	FBS 1001.5 B
FKB 1002 A	10	2	1.2	10.30	3°32'	9.0	1×3	1450 / 1450	3000 / 3000	93 / 144	2	17	34	19	14	5	19	21	26	4.5	FKB 1002 A
FBS 1002 B	10	2	1.5875	10.30	3°32'	8.6	3.7×1	2700 / 1750	5300 / 2700	134 / 112	1	23	41	24	19	5	25	25	33	4.5	FBS 1002 B
FKB 1002.5 A	10	2.5	1.5875	10.40	4°23'	8.7	1×3	2100 / 2100	3800 / 3800	96 / 150	2	18	35	21	16	5	20	22	27	4.5	FKB 1002.5 A
FBS 1002.5 B	10	2.5	1.5875	10.30	4°25'	8.6	3.7×1	2700 / 1750	5300 / 2700	133 / 112	1	24	44	27	21	6	26	27	35	5.5	FBS 1002.5 B

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

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Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

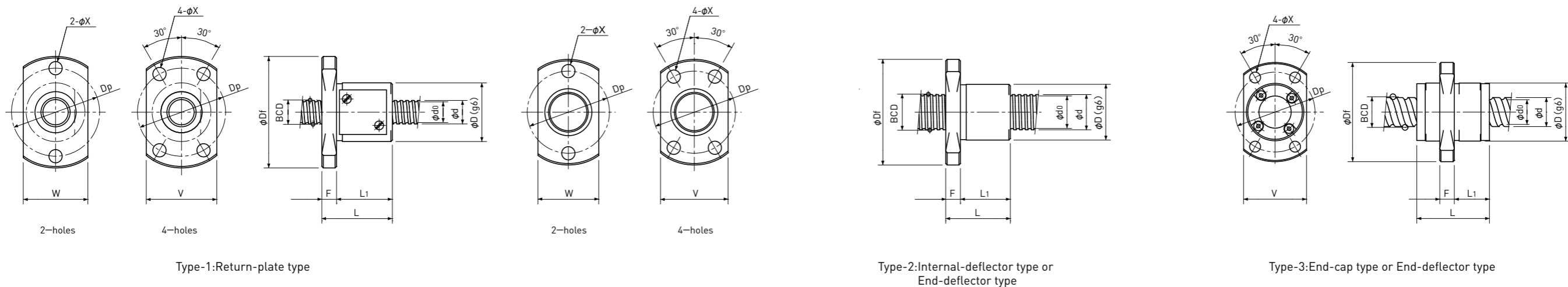
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FBS 1003 B	10	3	2.0	10.30	5° 18'	8.2	3.7×1	3900 / 2500	7200 / 3600	140 / 118	1	24	44	30	24	6	26	27	35	5.5	FBS 1003 B
FBS 1004 A	10	4	2.0	10.30	7° 03'	8.2	2.7×1	3000 / 1800	5200 / 2600	104 / 86	1	24	44	29	23	6	26	27	35	5.5	FBS 1004 A
FDB 1005 A	10	5	2.0	10.30	8° 47'	8.2	2.7×1	3000 / -	5200 / -	103 / -	2	23	40	26	21	5	-	25	32	4.5	FDB 1005 A
FBS 1005 A	10	5	2.0	10.30	8° 47'	8.2	2.7×1	3000 / 1800	5200 / 2600	103 / 85	1	24	44	34	28	6	26	27	35	5.5	FBS 1005 A
FEB 1010 A	10	10	2.0	10.50	16° 52'	8.4	1.6×2	3300 / -	5900 / -	117 / -	3	23	40	24	13	5	-	25	32	4.5	FEB 1010 A
FEB 1015 A	10	15	2.0	10.50	24° 27'	8.4	1.6×2	3300 / -	6400 / -	110 / -	3	23	40	33	22	5	-	25	32	4.5	FEB 1015 A
FEB 1020 A	10	20	1.5875	10.40	31° 28'	8.7	0.7×4	2100 / -	4000 / -	88 / -	3	20	37	23	13	5	-	22	29	4.5	FEB 1020 A
FEB 1030 A	10	30	1.5875	10.40	42° 33'	8.7	0.7×4	2100 / -	4000 / -	76 / -	3	20	37	31.5	21.7	5	-	22	29	4.5	FEB 1030 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

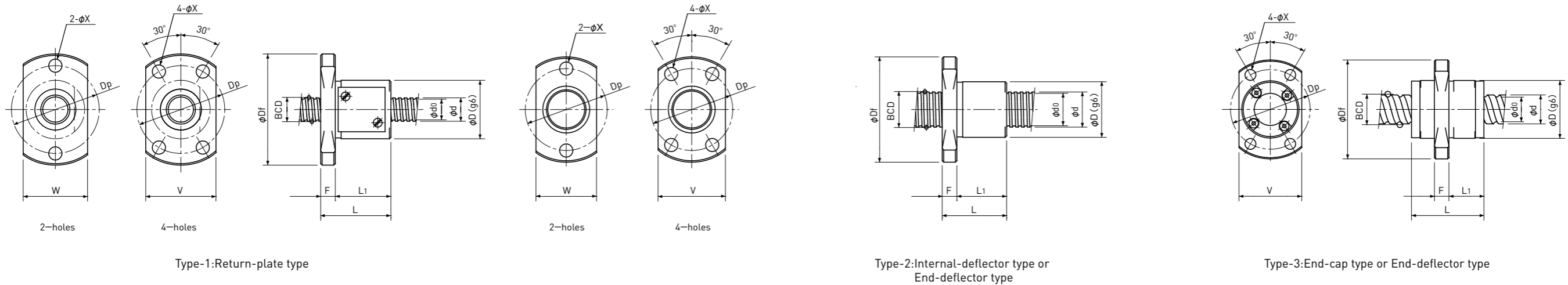
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FKB 1201 A	12	1	0.8	12.20	1°30'	11.3	1×3	780 / 780	2000 / 2000	97 / 152	2	17	34	16	11	5	19	21	26	4.5	FKB 1201 A
FBS 1201 B	12	1	0.8	12.15	1°30'	11.3	3.7×1	910 / 570	2400 / 1200	131 / 110	1	22	40	18	13	5	24	24	32	4.5	FBS 1201 B
FKB 1202 A	12	2	1.2	12.30	2°58'	11.0	1×3	1600 / 1600	3700 / 3700	109 / 169	2	19	36	19	14	5	21	23	28	4.5	FKB 1202 A
FBS 1202 B	12	2	1.5875	12.30	2°58'	10.6	3.7×1	3000 / 1900	6400 / 3200	156 / 132	1	25	45	25	19	6	27	27	36	5.5	FBS 1202 B
FKB 1202.5 A	12	2.5	1.5875	12.40	3°41'	10.7	1×3	2300 / 2300	4700 / 4700	112 / 174	2	20	37	21	16	5	22	24	29	4.5	FKB 1202.5 A
FBS 1202.5 B	12	2.5	1.5875	12.30	3°42'	10.6	3.7×1	3000 / 1850	6400 / 3200	156 / 130	1	26	46	27	21	6	28	28	37	5.5	FBS 1202.5 B
FKB 1203 A	12	3	2.0	12.50	4°22'	10.4	1×3	3100 / 3100	5700 / 5700	115 / 179	2	22	41	32	26	6	24	26	32	5.5	FKB 1203 A
FBS 1203 B	12	3	2.0	12.30	4°26'	10.2	3.7×1	4300 / 2800	8700 / 4300	162 / 137	1	28	48	30	24	6	30	30	39	5.5	FBS 1203 B
FBS 1204 B	12	4	2.381	12.30	5°55'	9.8	3.7×1	5400 / 3400	10200 / 5100	165 / 139	1	28	48	33	27	6	30	30	39	5.5	FBS 1204 B
FBS 1205 A	12	5	2.381	12.30	7°22'	9.8	2.7×1	4100 / 2500	7400 / 3700	122 / 101	1	28	48	33	27	6	30	30	39	5.5	FBS 1205 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

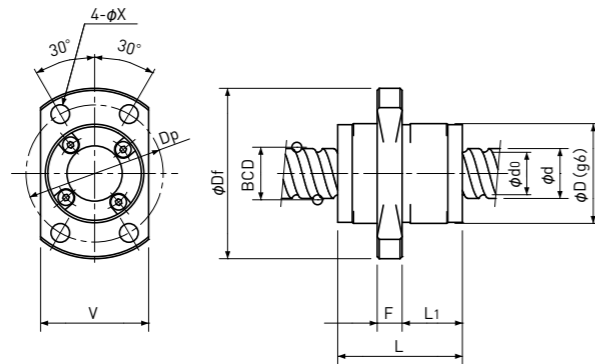
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

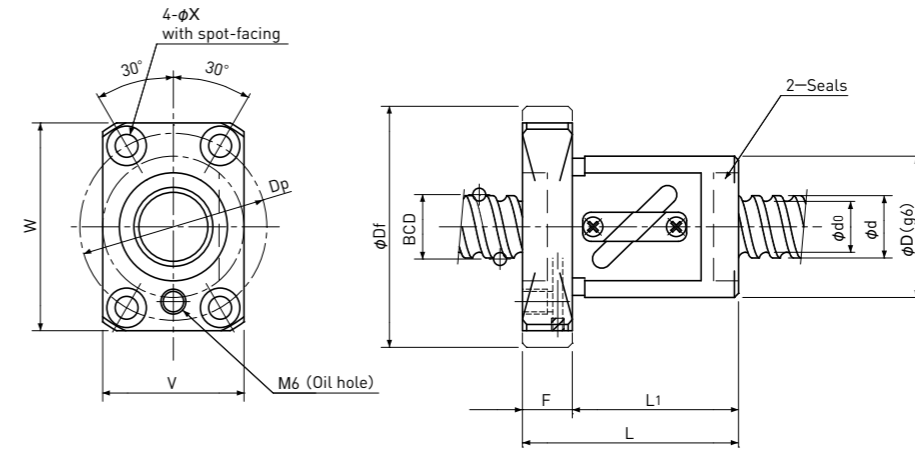
Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-3:End-cap type or End-deflector type



Type-4:Return-tube type

Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FEB 1210 A	12	10	2.381	12.65	14° 07'	10.2	1.7×2	5100 / -	9800 / -	152 / -	3	24	41	30	14.5	6	-	26	33	4.5	FEB 1210 A
FBS 1210 T	12	10	2.381	12.65	14° 07'	10.2	2.5×1	3800 / 2350	7100 / 3350	113 / 93	4	30	50	50	40	10	45	32	40	4.5	FBS 1210 T
FEB 1312 A	13	12	2.381	13.50	15° 48'	11.0	1.6×2	5000 / -	9900 / -	151 / -	3	28	45	30	17	5	-	30	37	4.5	FEB 1312 A
FEB 1315 A	13	15	2.381	13.50	19° 29'	11.0	1.6×2	5000 / -	10300 / -	147 / -	3	28	45	35	22	5	-	30	37	4.5	FEB 1315 A
FEB 1320 A	13	20	2.381	13.50	25° 15'	11.0	1.6×2	5000 / -	10700 / -	142 / -	3	28	45	43	29	5	-	30	37	4.5	FEB 1320 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca. Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

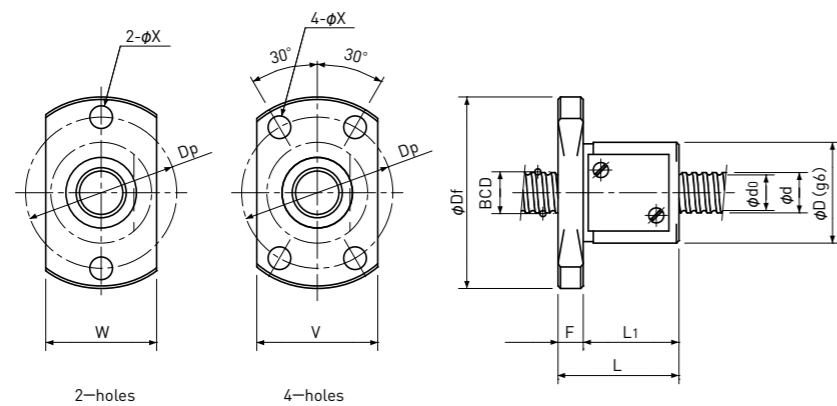
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

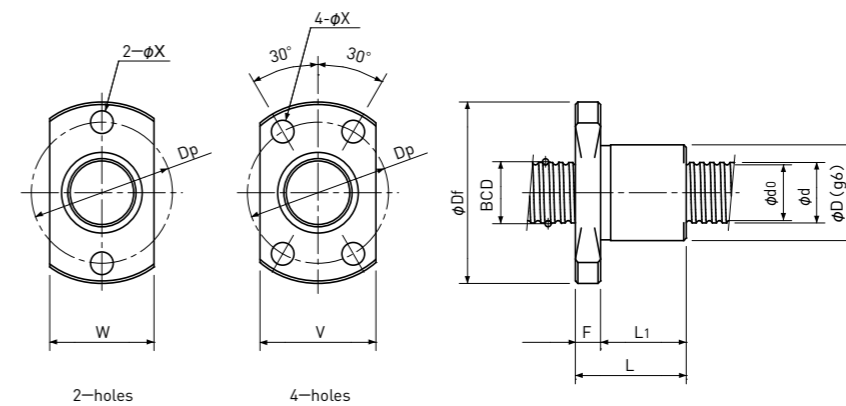
Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1:Return-plate type



Type-2:Internal-deflector type or End-deflector type

Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FBS 1401 B	14	1	0.8	14.15	1° 17'	13.3	3.7×1	960 / 610	2900 / 1450	148 / 124	1	26	46	21	15	6	28	28	37	5.5	FBS 1401 B
FKB 1402 A	14	2	1.2	14.30	2° 33'	13.0	1×3	1700 / 1700	4300 / 4300	122 / 190	2	21	40	20	14	6	23	26	31	5.5	FKB 1402 A
FBS 1402 B	14	2	1.5875	14.30	2° 33'	12.6	3.7×1	3200 / 2000	7500 / 3800	176 / 148	1	26	46	25	19	6	28	28	37	5.5	FBS 1402 B
FKB 1402.5 A	14	2.5	1.5875	14.40	3° 10'	12.7	1×3	2500 / 2500	5600 / 5600	127 / 197	2	22	41	22	16	6	24	26	32	5.5	FKB 1402.5 A
FBS 1402.5 B	14	2.5	1.5875	14.30	3° 11'	12.6	3.7×1	3200 / 2000	7500 / 3700	176 / 148	1	28	48	27	21	6	30	30	39	5.5	FBS 1402.5 B
FKB 1403 A	14	3	2.0	14.50	3° 46'	12.4	1×3	3400 / 3400	6800 / 6800	131 / 204	2	24	43	32	26	6	26	27	34	5.5	FKB 1403 A
FBS 1403 B	14	3	2.0	14.30	3° 49'	12.2	3.7×1	4600 / 2900	10100 / 5000	184 / 154	1	30	51	30	24	6	32	32	42	5.5	FBS 1403 B
FKB 1404 A	14	4	2.381	14.65	4° 58'	12.2	1×3	4500 / 4500	8600 / 8600	136 / 212	2	26	45	29	23	6	28	28	36	5.5	FKB 1404 A
FBS 1404 B	14	4	2.381	14.30	5° 05'	11.8	3.7×1	5700 / 3600	11600 / 5800	187 / 157	1	30	51	33	27	6	32	32	42	5.5	FBS 1404 B
FBS 1405 B	14	5	2.381	14.30	6° 21'	11.8	3.7×1	5700 / 3600	11600 / 5800	186 / 157	1	30	51	39	33	6	32	32	42	5.5	FBS 1405 B

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

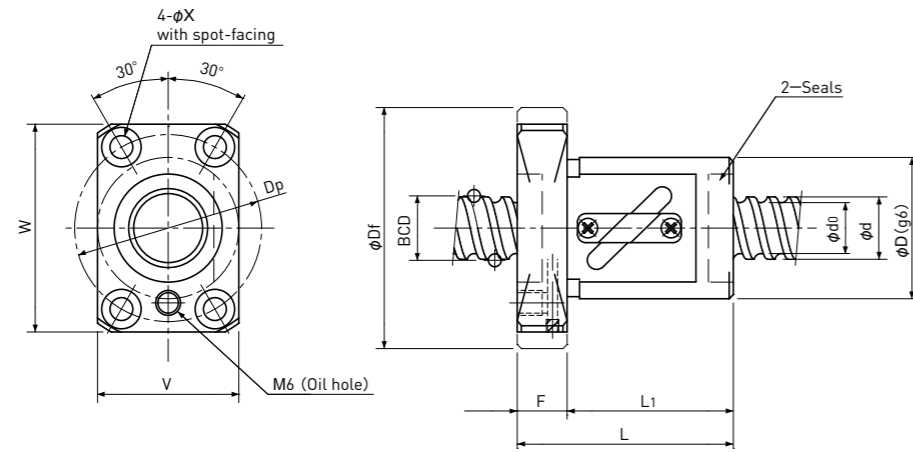
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

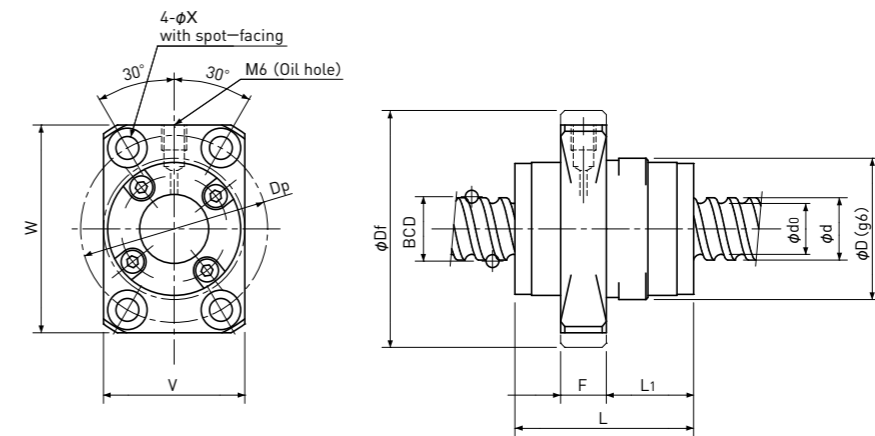
Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-4:Return-tube type



Type-5:End-deflector type

Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FBS 1504 T	15	4	2.381	15.50	4° 42'	13.0	2.5×1	4100 / 2580	8550 / 4300	136 / 112	4	32	56	41	31	10	48	32	43	5.5	FBS 1504 T
FEB 1505 A	15	5	3.175	15.50	5° 41'	12.2	3.7×1	8900 / -	17000 / -	208 / -	5	34	57	33	16	11	50	34	45	5.5	FEB 1505 A
FBS 1505 T	15	5	3.175	15.80	5° 45'	12.4	2.5×1	6900 / 4350	12500 / 6250	148 / 122	4	34	58	44	34	10	50	34	45	5.5	FBS 1505 T
FEB 1510 A	15	10	3.175	15.50	11° 36'	12.2	2.7×2	12000 / -	25000 / -	289 / -	5	34	57	43	21	11	50	34	45	5.5	FEB 1510 A
FBS 1510 T	15	10	3.175	15.80	11° 23'	12.4	1.5×1	4400 / 2540	7900 / 3450	87 / 69	4	34	58	52	40	12	50	34	45	6.0	FBS 1510 T
FEB 1520 A	15	20	3.175	15.75	22° 01'	12.4	1.7×2	8000 / -	16000 / -	178 / -	5	34	57	52	28.5	11	50	34	45	5.5	FEB 1520 A
FBS 1520 T	15	20	3.175	15.80	21° 56'	12.4	1.5×1	4400 / 2540	7900 / 3450	84 / 67	4	34	58	62	50	12	50	34	45	6.0	FBS 1520 T
FEB 1530 A	15	30	3.175	15.75	31° 14'	12.4	1.7×2	8000 / -	16000 / -	163 / -	5	34	57	71	45.5	11	50	34	45	5.5	FEB 1530 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

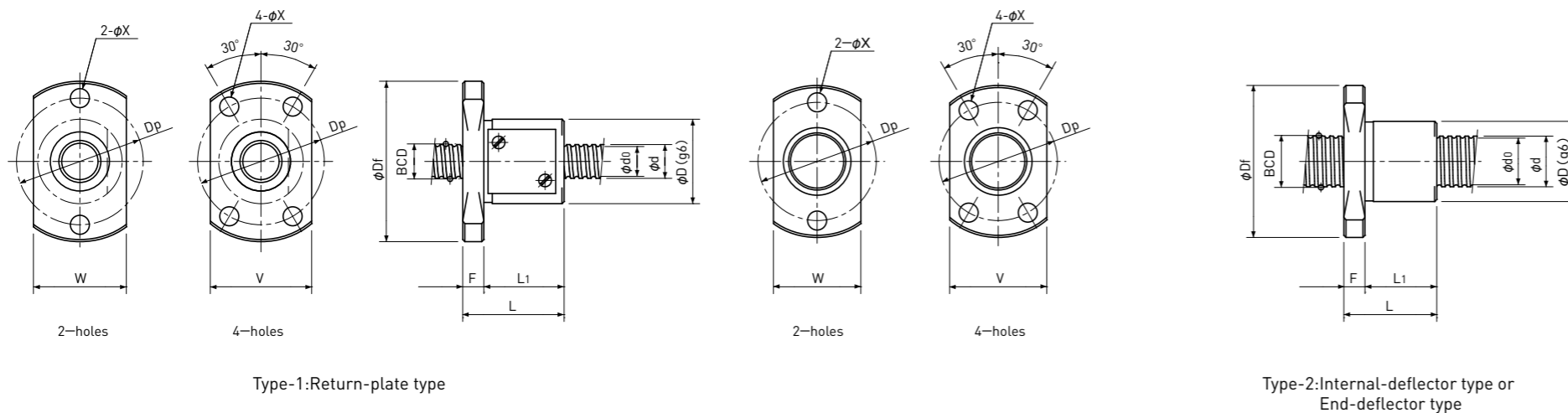
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
FBS 1601 B	16	1	0.8	16.15	1°08'	15.3	3.7×1	1000 / 640	3300 / 1650	164 / 138	1	28	48	21	15	6	30	30	39	5.5	FBS 1601 B
FKB 1602 A	16	2	1.2	16.30	2°14'	15.0	1×3	1850 / 1850	5000 / 5000	137 / 213	2	24	43	20	14	6	26	27	34	5.5	FKB 1602 A
FBS 1602 B	16	2	1.5875	16.30	2°14'	14.6	3.7×1	3400 / 2100	8600 / 4300	197 / 163	1	28	48	25	19	6	30	30	39	5.5	FBS 1602 B
FKB 1603 A	16	3	2.0	16.50	3°19'	14.4	1×3	3600 / 3600	8000 / 8000	146 / 227	2	26	45	32	26	6	28	28	36	5.5	FKB 1603 A
FBS 1603 B	16	3	2.0	16.30	3°21'	14.2	3.7×1	4900 / 3100	11600 / 5800	205 / 172	1	32	53	30	24	6	34	34	44	5.5	FBS 1603 B
FKB 1604 A	16	4	2.381	16.65	4°22'	13.9	1×3	4800 / 4800	10000 / 10000	152 / 237	2	28	47	29	23	6	30	30	38	5.5	FKB 1604 A
FBS 1604 B	16	4	2.381	16.30	4°28'	13.8	3.7×1	6200 / 3900	13600 / 6800	209 / 174	1	34	54	34	28	6	36	36	45	5.5	FBS 1604 B
FBS 1605 B	16	5	3.175	16.50	5°31'	13.2	3.7×1	9100 / 5700	18200 / 9100	217 / 182	1	38	57	42	36	6	40	40	48	5.5	FBS 1605 B

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

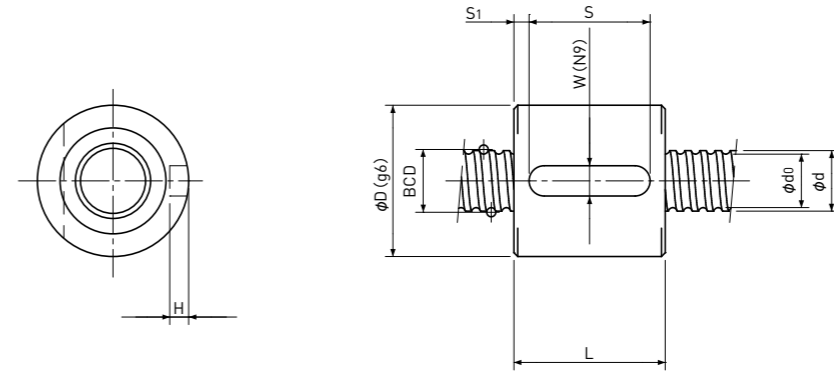
For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Sleeve type Single Nut

Backlash type/Preload type



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension						Ball Nut Model number
								Dynamic Ca	Static Coa		D	L	W	H	S	S ₁	
BS 0301 B	3	1	0.6	3.18	5° 43'	2.4	3.7×1	330 / -	440 / -	42 / -	9	12	2	1.2	8	2	BS 0301 B
BS 0401 A	4	1	0.8	4.15	4° 23'	3.3	2.7×1	420 / 270	570 / 290	40 / 34	10	12	2	1.2	8	2	BS 0401 A
BS 0401 B	4	1	0.8	4.15	4° 23'	3.3	3.7×1	560 / 350	790 / 400	54 / 45	11	14	3	1.8	8	3	BS 0401 B
BS 0402 A	4	2	0.8	4.15	8° 43'	3.3	2.7×1	420 / 260	570 / 290	39 / 33	11	16	3	1.8	8	4	BS 0402 A
BS 0501 B	5	1	0.8	5.15	3° 32'	4.3	3.7×1	630 / 400	1000 / 500	65 / 55	12	14	3	1.8	8	3	BS 0501 B
BS 0504 A	5	4	0.8	5.15	13° 53'	4.3	2.7×1	470 / 300	720 / 360	47 / 39	12	22	3	1.8	12	5	BS 0504 A
BS 0601 B	6	1	0.8	6.15	2° 58'	5.3	3.7×1	680 / 430	1200 / 610	75 / 63	13	14	3	1.8	10	2	BS 0601 B
BS 0601.5 B	6	1.5	1.0	6.20	4° 24'	5.1	3.7×1	980 / 620	1600 / 800	79 / 67	14	16	3	1.8	10	3	BS 0601.5 B
BS 0602 A	6	2	1.0	6.20	5° 52'	5.1	2.7×1	750 / 470	1200 / 590	58 / 49	15	15	3	1.8	10	2.5	BS 0602 A
BS 0602.5 A	6	2.5	1.0	6.20	7° 19'	5.1	2.7×1	750 / 470	1200 / 590	59 / 49	15	16	3	1.8	10	3	BS 0602.5 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.
If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS.
Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

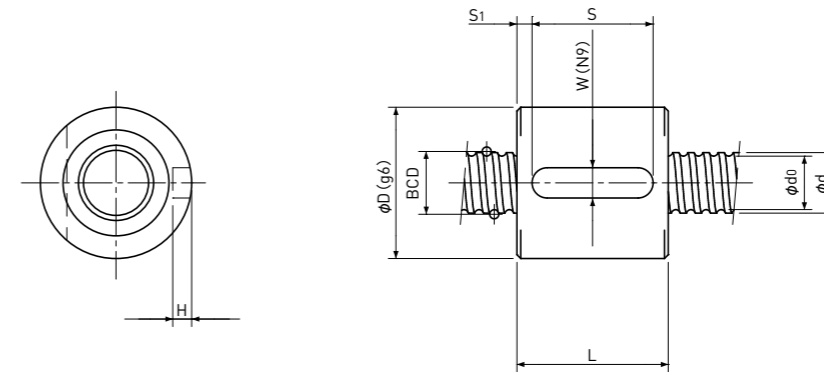
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
For Axial load or Preload condition other than the above,
see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Sleeve type Single Nut

Backlash type/Preload type



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension						Ball Nut Model number
								Dynamic Ca	Static Coa		D	L	W	H	S	S ₁	
BS 0801 B	8	1	0.8	8.15	2° 15'	7.3	3.7×1	780 / 490	1650 / 820	95 / 80	16	14	3	1.8	10	2	BS 0801 B
BS 0801.5 B	8	1.5	1.0	8.20	3° 20'	7.1	3.7×1	1100 / 700	2200 / 1100	99 / 83	16	16	3	1.8	10	3	BS 0801.5 B
BS 0802 B(1)	8	2	1.0	8.20	4° 26'	7.1	3.7×1	1100 / 700	2200 / 1100	99 / 83	16	18	3	1.8	12	3	BS 0802 B(1)
BS 0802 B(2)	8	2	1.5875	8.30	4° 23'	6.6	3.7×1	2400 / 1550	4100 / 2100	111 / 94	20	20	4	2.5	16	2	BS 0802 B(2)
BS 0802.5 A	8	2.5	1.5875	8.00	5° 41'	6.3	2.7×1	1850 / -	3000 / -	80 / -	16	16	3	1.8	8	4	BS 0802.5 A
BS 0802.5 B	8	2.5	1.5875	8.30	5° 29'	6.6	3.7×1	2400 / 1550	4100 / 2100	111 / 93	20	22	4	2.5	16	3	BS 0802.5 B
BS 0803 A	8	3	2.0	8.30	6° 34'	6.2	2.7×1	2600 / 1650	4200 / 2100	85 / 70	20	22	4	2.5	16	3	BS 0803 A
BS 0804 A	8	4	2.0	8.30	8° 43'	6.2	2.7×1	2600 / 1650	4200 / 2100	84 / 70	21	26	4	2.5	20	3	BS 0804 A
BS 0805 A	8	5	1.5875	8.30	10° 51'	6.6	2.7×1	1850 / 1150	3000 / 1500	82 / 67	18	28	4	2.5	20	4	BS 0805 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

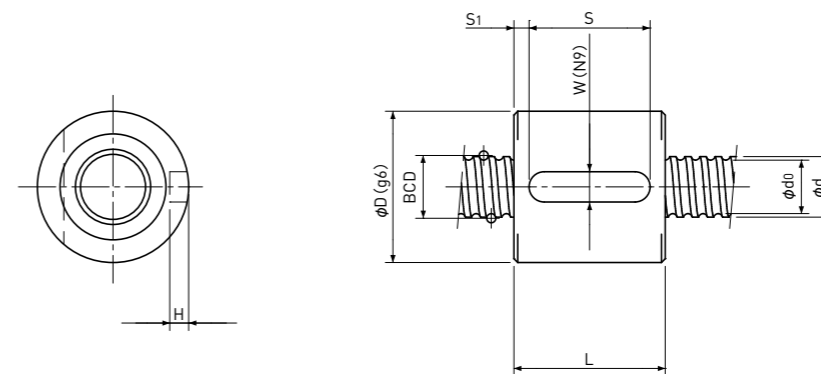
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca. Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above,

see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension						Ball Nut Model number
								Dynamic Ca	Static Coa		D	L	W	H	S	S ₁	
BS 1001 B	10	1	0.8	10.15	1°48'	9.3	3.7×1	840 / 530	2000 / 1000	113 / 95	19	14	3	1.8	10	2	BS 1001 B
BS 1001.5 B	10	1.5	1.0	10.20	2°41'	9.1	3.7×1	1250 / 790	2800 / 1400	120 / 101	19	16	3	1.8	10	3	BS 1001.5 B
BS 1002 B	10	2	1.5875	10.30	3°32'	8.6	3.7×1	2700 / 1750	5300 / 2700	134 / 112	23	20	5	3	16	2	BS 1002 B
BS 1002.5 B	10	2.5	1.5875	10.30	4°25'	8.6	3.7×1	2700 / 1750	5300 / 2700	133 / 112	24	22	5	3	16	3	BS 1002.5 B
BS 1003 B	10	3	2.0	10.30	5°18'	8.2	3.7×1	3900 / 2500	7200 / 3600	140 / 118	24	26	5	3	20	3	BS 1003 B
BS 1004 A	10	4	2.0	10.30	7°03'	8.2	2.7×1	3000 / 1800	5200 / 2600	104 / 86	24	26	5	3	20	3	BS 1004 A
BS 1005 A(1)	10	5	2.0	10.30	8°47'	8.2	2.7×1	3000 / —	5200 / —	103 / —	23	26	5	3	16	5	BS 1005 A(1)
BS 1005 A(2)	10	5	2.0	10.30	8°47'	8.2	2.7×1	3000 / 1800	5200 / 2600	103 / 85	24	34	5	3	28	3	BS 1005 A(2)

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

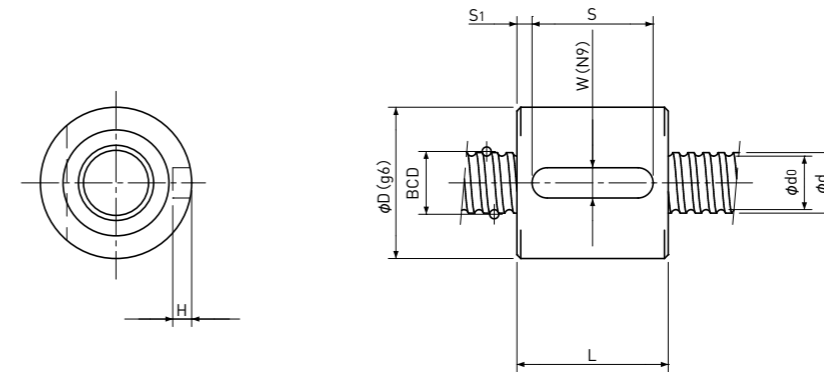
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Sleeve type Single Nut

Backlash type/Preload type



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/ μ m	Nut dimension						Ball Nut Model number
								Dynamic Ca	Static Coa		D	L	W	H	S	S_1	
BS 1201 B	12	1	0.8	12.15	1°30'	11.3	3.7×1	910 / 570	2400 / 1200	131 / 110	22	14	4	2.5	10	2	BS 1201 B
BS 1202 B	12	2	1.5875	12.30	2°58'	10.6	3.7×1	3000 / 1900	6400 / 3200	156 / 132	25	20	5	3	16	2	BS 1202 B
BS 1202.5 B	12	2.5	1.5875	12.30	3°42'	10.6	3.7×1	3000 / 1850	6400 / 3200	156 / 130	26	22	5	3	16	3	BS 1202.5 B
BS 1203 B	12	3	2.0	12.30	4°26'	10.2	3.7×1	4300 / 2800	8700 / 4300	162 / 137	28	26	5	3	20	3	BS 1203 B
BS 1204 B	12	4	2.381	12.30	5°55'	9.8	3.7×1	5400 / 3400	10200 / 5100	165 / 139	28	31	5	3	25	3	BS 1204 B
BS 1205 A	12	5	2.381	12.30	7°22'	9.8	2.7×1	4100 / 2500	7400 / 3700	122 / 101	28	31	5	3	25	3	BS 1205 A
BS 1401 B	14	1	0.8	14.15	1°17'	13.3	3.7×1	960 / 610	2900 / 1450	148 / 124	26	16	5	3	10	3	BS 1401 B
BS 1402 B	14	2	1.5875	14.30	2°33'	12.6	3.7×1	3200 / 2000	7500 / 3800	176 / 148	26	20	5	3	16	2	BS 1402 B
BS 1402.5 B	14	2.5	1.5875	14.30	3°11'	12.6	3.7×1	3200 / 2000	7500 / 3700	176 / 148	28	22	5	3	16	3	BS 1402.5 B
BS 1403 B	14	3	2.0	14.30	3°49'	12.2	3.7×1	4600 / 2900	10100 / 5000	184 / 154	30	26	5	3	20	3	BS 1403 B
BS 1404 B	14	4	2.381	14.30	5°05'	11.8	3.7×1	5700 / 3600	11600 / 5800	187 / 157	30	31	5	3	25	3	BS 1404 B
BS 1405 B	14	5	2.381	14.30	6°21'	11.8	3.7×1	5700 / 3600	11600 / 5800	186 / 157	30	38	5	3	28	5	BS 1405 B

Basic Load Rating N		Nut Rigidity N/ μ m
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138

Preload type
Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above,

see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

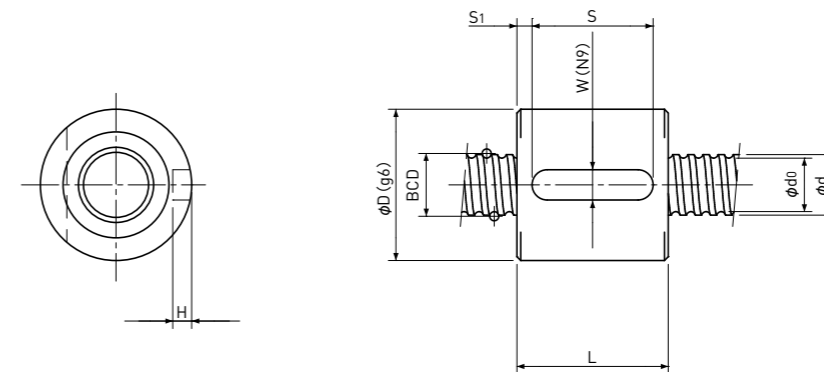
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Sleeve type Single Nut

Backlash type/Preload type



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension						Ball Nut Model number
								Dynamic Ca	Static Coa		D	L	W	H	S	S ₁	
BS 1601 B	16	1	0.8	16.15	1°08'	15.3	3.7×1	1000 / 640	3300 / 1650	164 / 138	28	16	5	3	10	3	BS 1601 B
BS 1602 B	16	2	1.5875	16.30	2°14'	14.6	3.7×1	3400 / 2100	8600 / 4300	197 / 163	28	20	5	3	16	2	BS 1602 B
BS 1603 B	16	3	2.0	16.30	3°21'	14.2	3.7×1	4900 / 3100	11600 / 5800	205 / 172	32	26	5	3	20	3	BS 1603 B
BS 1604 B	16	4	2.381	16.30	4°28'	13.8	3.7×1	6200 / 3900	13600 / 6800	209 / 174	34	32	5	3	25	3.5	BS 1604 B
BS 1605 B	16	5	3.175	16.50	5°31'	13.2	3.7×1	9100 / 5700	18200 / 9100	217 / 182	38	38	5	3	28	5	BS 1605 B

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138

Preload type
Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca. Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

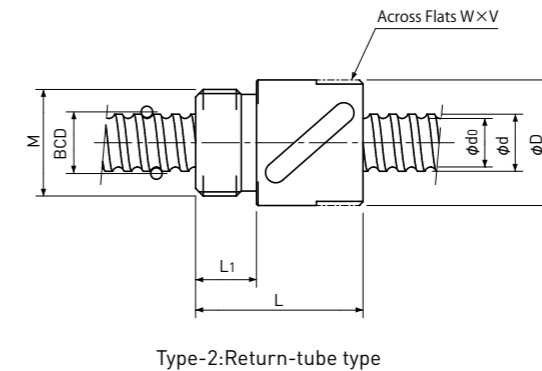
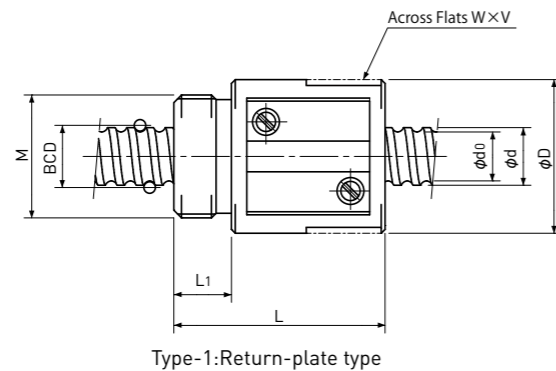
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with M-thread

Backlash type/Preload type



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension						Ball Nut Model number	
								Dynamic Ca	Static Coa		Nut type	D	L	L ₁	Across Flats width W	Across Flats length V		M
MS 0401 B	4	1	0.8	4.15	4° 23'	3.3	3.7x1	560 / 350	790 / 400	54 / 45	1	11	17	4	10	6	M9x0.75	MS 0401 B
MS 0602 A	6	2	1.0	6.20	5° 52'	5.1	2.7x1	750 / 470	1200 / 590	58 / 49	1	16.5	22	8	14	4	M14x1.0	MS 0602 A
MS 0801.5 B	8	1.5	1.0	8.20	3° 20'	7.1	3.7x1	1100 / 700	2200 / 1100	99 / 83	1	16.5	24	8	14	5	M14x1.0	MS 0801.5 B
MS 0802 B	8	2	1.5875	8.30	4° 23'	6.6	3.7x1	2400 / 1550	4100 / 2100	111 / 94	1	20	27.5	7.5	18	5	M16x1.0	MS 0802 B
MS 0802.5 T(1)	8	2.5	1.5875	8.00	5° 41'	6.3	3.5x1	2300 / -	3900 / -	102 / -	2	16.5	22	8	14	4	M14x1.0	MS 0802.5 T(1)
MS 0802.5 T(2)	8	2.5	1.5875	8.00	5° 41'	6.3	3.5x1	2300 / -	3900 / -	102 / -	2	17.5	25.5	7.5	15	4	M15x1.0	MS 0802.5 T(2)
MS 0803 A	8	3	2.0	8.30	6° 34'	6.2	2.7x1	2600 / 1650	4200 / 2100	85 / 70	1	20	28.5	7.5	18	5	M16x1.0	MS 0803 A
MS 0804 T	8	4	1.5875	8.00	9° 03'	5.9	2.5x1	1750 / -	2800 / -	75 / -	2	16.5	24	8	14	4	M14x1.0	MS 0804 T
MS 0805 A	8	5	1.5875	8.30	10° 51'	6.6	2.7x1	1850 / 1150	3000 / 1500	82 / 67	1	18	32.5	7.5	16	5	M15x1.0	MS 0805 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above,

see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

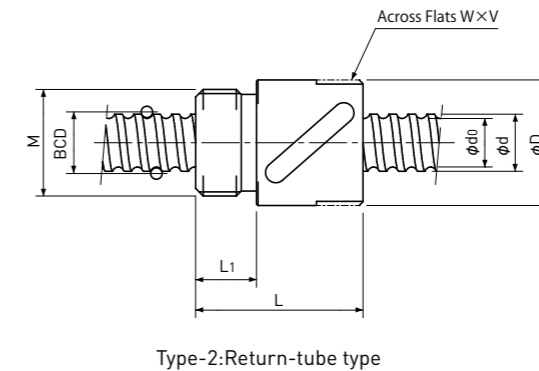
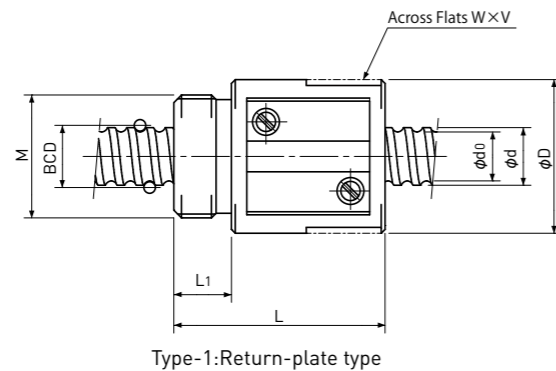
Note 5) Across Flats or drill hole is available on the Ball Nut for the convenience of assembly. Please ask KSS representative.

Note 6) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with M-thread

Backlash type/Preload type



Unit: mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension						Ball Nut Model number	
								Dynamic Ca	Static Coa		Nut type	D	L	L ₁	Across Flats width W	Across Flats length V		M
MS 1002 B	10	2	1.5875	10.30	3°32'	8.6	3.7x1	2700 / 1750	5300 / 2700	134 / 112	1	23	27.5	7.5	21	5	M17x1.0	MS 1002 B
MS 1202 B	12	2	1.5875	12.30	2°58'	10.6	3.7x1	3000 / 1900	6400 / 3200	156 / 132	1	25	30	10	23	5	M20x1.0	MS 1202 B
MS 1204 T	12	4	2.381	12.30	5°55'	9.8	2.5x1	3900 / —	7000 / —	113 / —	2	25.5	34	10	23	5	M20x1.0	MS 1204 T
MS 1402 B	14	2	1.5875	14.30	2°33'	12.6	3.7x1	3200 / 2000	7500 / 3800	176 / 148	1	26	30	10	23	5	M22x1.5	MS 1402 B
MS 1404 B	14	4	2.381	14.30	5°05'	11.8	3.7x1	5700 / 3600	11600 / 5800	187 / 157	1	30	38	10	27	8	M25x1.0	MS 1404 B

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

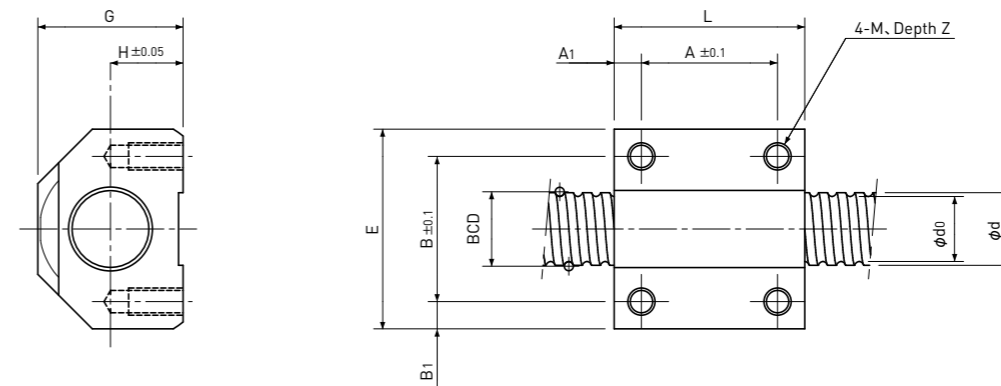
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.

Note 5) Across Flats or drill hole is available on the Ball Nut for the convenience of assembly. Please ask KSS representative.

Note 6) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Square type Single Nut

Backlash type/Preload type



Unit:mm

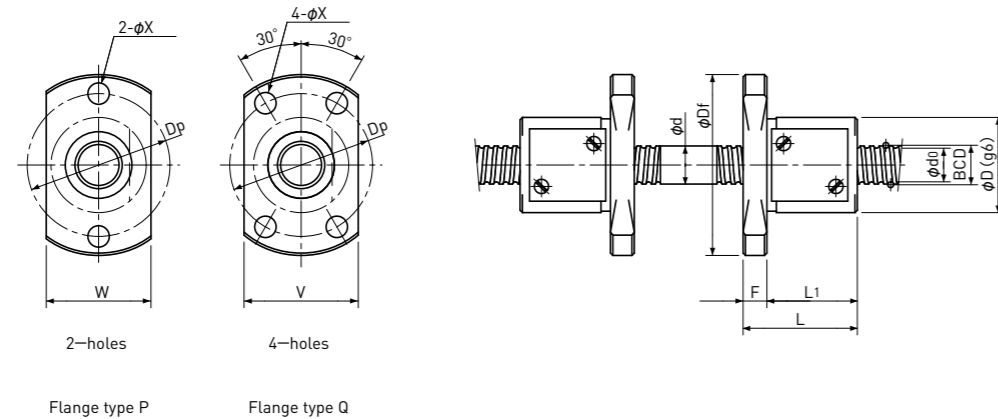
Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension								Ball Nut Model number		
								Dynamic Ca	Static Coa		L	E	G	H	A	A ₁	B	B ₁		M	Z
KS 0601 B	6	1	0.8	6.15	2°58'	5.3	3.7×1	680 / 430	1200 / 610	75 / 63	20	20	14	7	14	3	14	3	M3	6	KS 0601 B
KS 0602 A	6	2	1.0	6.20	5°52'	5.1	2.7×1	750 / 470	1200 / 590	58 / 49	20	20	14	7	14	3	14	3	M3	6	KS 0602 A
KS 0801 B	8	1	0.8	8.15	2°15'	7.3	3.7×1	780 / 490	1650 / 820	95 / 80	21	22	16	8	15	3	16	3	M3	6	KS 0801 B
KS 0802 A	8	2	1.0	8.20	4°26'	7.1	2.7×1	850 / 540	1600 / 800	74 / 61	21	22	16	8	15	3	16	3	M3	6	KS 0802 A
KS 1001 B	10	1	0.8	10.15	1°48'	9.3	3.7×1	840 / 530	2000 / 1000	113 / 95	26	28	22	12	18	4	20	4	M4	7	KS 1001 B
KS 1002 B	10	2	1.5875	10.30	3°32'	8.6	3.7×1	2700 / 1750	5300 / 2700	134 / 112	26	28	23.5	12	18	4	20	4	M4	7	KS 1002 B

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

- Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
- Note 2) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.
- Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.
- Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask KSS representative.
- Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Bi-directional Nut with Flange

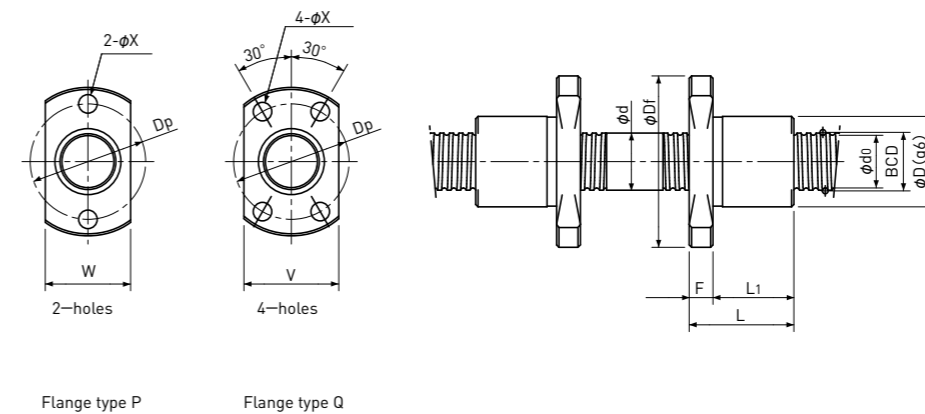
Backlash type/Preload type



Flange type P

Flange type Q

Type-1:Return-plate type



Flange type P

Flange type Q

Type-2:Internal-deflector type

Unit:mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number	
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X		Flange Type
FKB 0401 A	4	1	0.6	4.15	4°23'	3.4	1×3	300 / 300	430 / 430	38 / 59	2	9	19	13	10	3	11	13	14	2.9	P,Q	FKB 0401 A
FKB 0501 A	5	1	0.6	5.15	3°32'	4.4	1×3	330 / 330	560 / 560	45 / 70	2	10	20	13	10	3	12	14	15	2.9	P,Q	FKB 0501 A
FKB 0601 A	6	1	0.8	6.20	2°56'	5.3	1×3	560 / 560	950 / 950	55 / 86	2	11	23	14.5	11	3.5	13	15	17	3.4	P,Q	FKB 0601 A
FKB 0801 A	8	1	0.8	8.20	2°13'	7.3	1×3	650 / 650	1300 / 1300	70 / 109	2	13	26	15	11	4	15	17	20	3.4	P,Q	FKB 0801 A
FKB 0801.5 A	8	1.5	1.0	8.30	3°18'	7.2	1×3	890 / 890	1650 / 1650	73 / 113	2	15	28	20	16	4	17	19	22	3.4	P,Q	FKB 0801.5 A
FKB 0802 A	8	2	1.2	8.30	4°23'	7.0	1×3	1300 / 1300	2300 / 2300	77 / 121	2	15	28	18	14	4	17	19	22	3.4	P,Q	FKB 0802 A
FKB 1001 A	10	1	0.8	10.20	1°47'	9.3	1×3	720 / 720	1650 / 1650	84 / 131	2	15	28	15	11	4	17	19	22	3.4	P,Q	FKB 1001 A
FKB 1001.5 A	10	1.5	1.0	10.30	2°39'	9.2	1×3	990 / 990	2100 / 2100	87 / 136	2	17	34	21	16	5	19	21	26	4.5	P,Q	FKB 1001.5 A
FKB 1002 A	10	2	1.2	10.30	3°32'	9.0	1×3	1450 / 1450	3000 / 3000	93 / 144	2	17	34	19	14	5	19	21	26	4.5	P,Q	FKB 1002 A
FKB 1002.5 A	10	2.5	1.5875	10.40	4°23'	8.7	1×3	2100 / 2100	3800 / 3800	96 / 150	2	18	35	21	16	5	20	22	27	4.5	P,Q	FKB 1002.5 A
FBS 1003 B	10	3	2.0	10.30	5°18'	8.2	3.7×1	3900 / 2500	7200 / 3600	140 / 118	1	24	44	30	24	6	26	27	35	5.5	P,Q	FBS 1003 B
FBS 1004 A	10	4	2.0	10.30	7°03'	8.2	2.7×1	3000 / 1800	5200 / 2600	104 / 86	1	24	44	29	23	6	26	27	35	5.5	P,Q	FBS 1004 A
FBS 1005 A	10	5	2.0	10.30	8°47'	8.2	2.7×1	3000 / 1800	5200 / 2600	103 / 85	1	24	44	34	28	6	26	27	35	5.5	P,Q	FBS 1005 A

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138

Preload type
Backlash type

Note 1) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

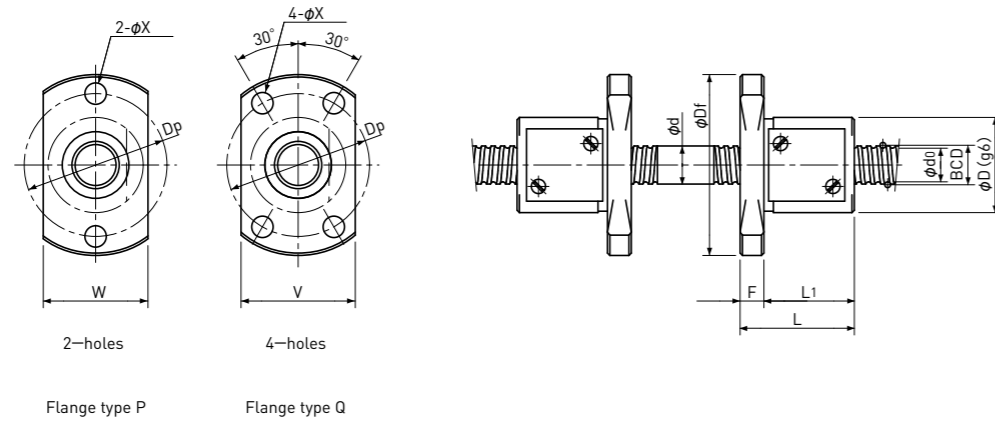
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

Note 4) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

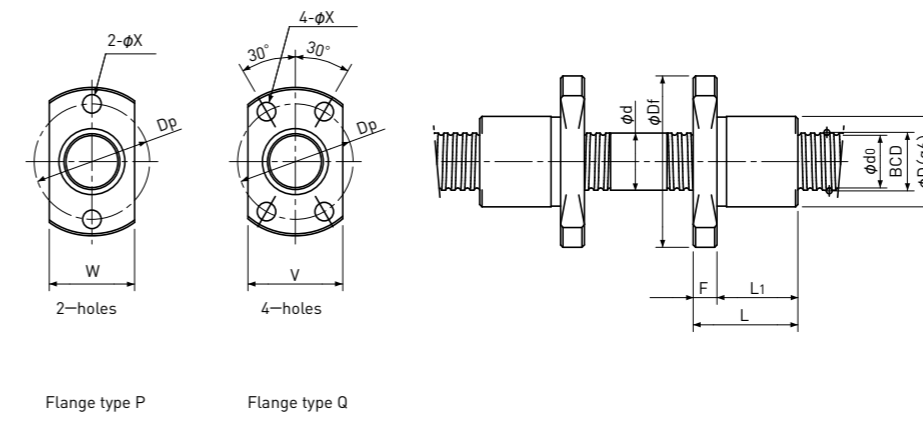
Precision Ball Screws

Bi-directional Nut with Flange

Backlash type/Preload type



Type-1:Return-plate type



Type-2:Internal-deflector type

Unit:mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number	
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X		Flange Type
FKB 1201 A	12	1	0.8	12.20	1°30'	11.3	1×3	780 / 780	2000 / 2000	97 / 152	2	17	34	16	11	5	19	21	26	4.5	P,Q	FKB 1201 A
FKB 1202 A	12	2	1.2	12.30	2°58'	11.0	1×3	1600 / 1600	3700 / 3700	109 / 169	2	19	36	19	14	5	21	23	28	4.5	P,Q	FKB 1202 A
FKB 1202.5 A	12	2.5	1.5875	12.40	3°41'	10.7	1×3	2300 / 2300	4700 / 4700	112 / 174	2	20	37	21	16	5	22	24	29	4.5	P,Q	FKB 1202.5 A
FKB 1203 A	12	3	2.0	12.50	4°22'	10.4	1×3	3100 / 3100	5700 / 5700	115 / 179	2	22	41	32	26	6	24	26	32	5.5	P,Q	FKB 1203 A
FBS 1204 B	12	4	2.381	12.30	5°55'	9.8	3.7×1	5400 / 3400	10200 / 5100	165 / 139	1	28	48	33	27	6	30	30	39	5.5	P,Q	FBS 1204 B
FBS 1401 B	14	1	0.8	14.15	1°17'	13.3	3.7×1	960 / 610	2900 / 1450	148 / 124	1	26	46	21	15	6	28	28	37	5.5	P,Q	FBS 1401 B
FKB 1402 A	14	2	1.2	14.30	2°33'	13.0	1×3	1700 / 1700	4300 / 4300	122 / 190	2	21	40	20	14	6	23	26	31	5.5	P,Q	FKB 1402 A
FKB 1402.5 A	14	2.5	1.5875	14.40	3°10'	12.7	1×3	2500 / 2500	5600 / 5600	127 / 197	2	22	41	22	16	6	24	26	32	5.5	P,Q	FKB 1402.5 A
FKB 1403 A	14	3	2.0	14.50	3°46'	12.4	1×3	3400 / 3400	6800 / 6800	131 / 204	2	24	43	32	26	6	26	27	34	5.5	P,Q	FKB 1403 A
FKB 1404 A	14	4	2.381	14.65	4°58'	11.9	1×3	4500 / 4500	8600 / 8600	136 / 212	2	26	45	29	23	6	28	28	36	5.5	P,Q	FKB 1404 A
FBS 1405 B	14	5	2.381	14.30	6°21'	11.8	3.7×1	5700 / 3600	11600 / 5800	186 / 157	1	30	51	39	33	6	32	32	42	5.5	P,Q	FBS 1405 B

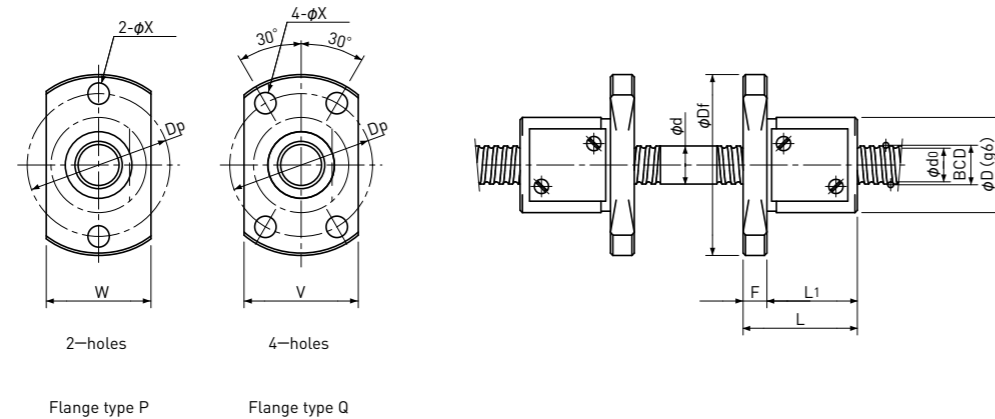
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

- Note 1) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
- Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.
- Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions. Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca. Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca. For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.
- Note 4) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Bi-directional Nut with Flange

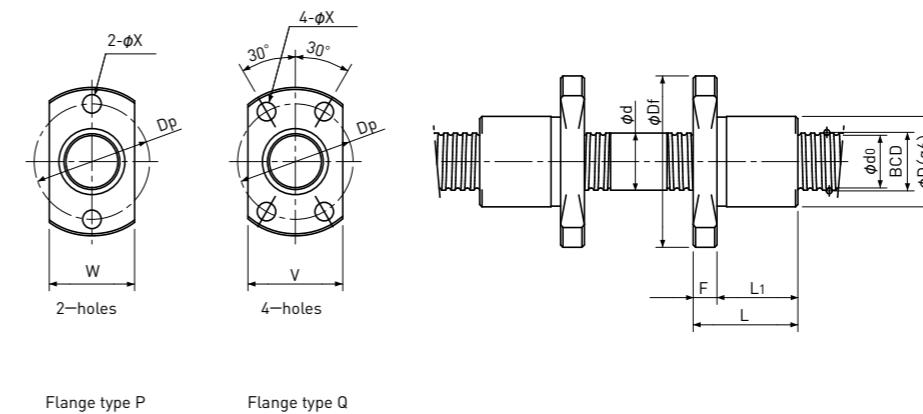
Backlash type/Preload type



Flange type P

Flange type Q

Type-1:Return-plate type



Flange type P

Flange type Q

Type-2:Internal-deflector type

Unit:mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/ μ m	Nut dimension										Ball Nut Model number	
								Dynamic C_a	Static C_{oa}		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X		Flange Type
FBS 1601 B	16	1	0.8	16.15	1°08'	15.3	3.7×1	1000 / 640	3300 / 1650	164 / 138	1	28	48	21	15	6	30	30	39	5.5	P,Q	FBS 1601 B
FKB 1602 A	16	2	1.2	16.30	2°15'	15.0	1×3	1850 / 1850	5000 / 5000	137 / 213	2	24	43	20	14	6	26	27	34	5.5	P,Q	FKB 1602 A
FKB 1603 A	16	3	2.0	16.50	3°19'	14.4	1×3	3600 / 3600	8000 / 8000	146 / 227	2	26	45	32	26	6	28	28	36	5.5	P,Q	FKB 1603 A
FKB 1604 A	16	4	2.381	16.65	4°22'	13.9	1×3	4800 / 4800	10000 / 10000	152 / 237	2	28	47	29	23	6	30	30	38	5.5	P,Q	FKB 1604 A
FBS 1605 B	16	5	3.175	16.50	5°31'	13.2	3.7×1	9100 / 5700	18200 / 9100	217 / 182	1	38	57	42	36	6	40	40	48	5.5	P,Q	FBS 1605 B

Basic Load Rating N		Nut Rigidity N/ μ m
Dynamic C_a	Static C_{oa}	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at the both ends.

If the seals are required, Ball Nut dimension should be changed, in that case, please ask KSS. Some type of Ball Nuts cannot equip with seals, please ask KSS representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.

Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating C_a .

Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating C_a .

For Axial load or Preload condition other than the above, see the formula in page A823 or page A824, you can calculate Rigidity using this formula.

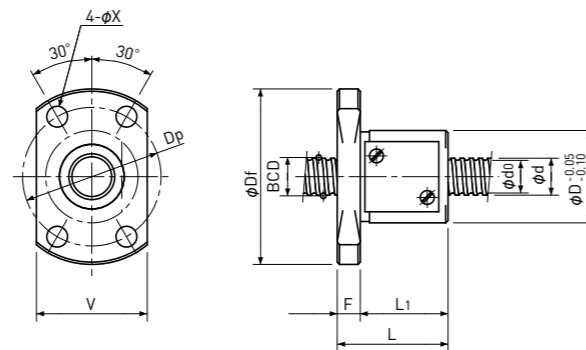
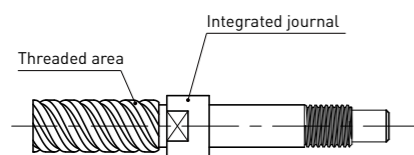
Note 4) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Rolled Ball Screws

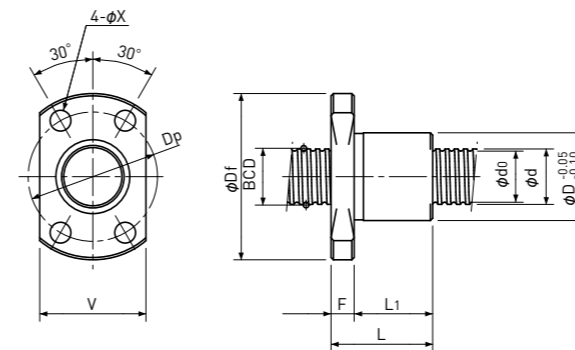
Single Nut with Flange

Backlash type

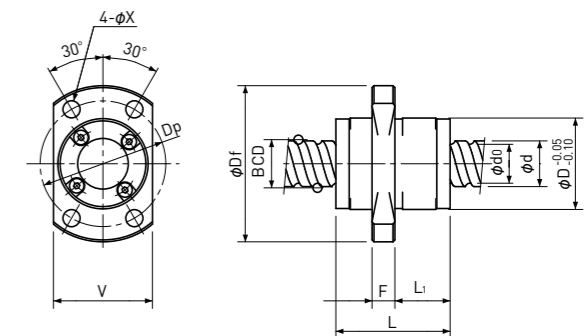
■ Rolled Ball Screws with integrated journal are available ($\phi 12$ or less only), which have larger diameter than threaded area shown below.



Type-1:Return-plate type



Type-2:Internal-deflector type or End-deflector type



Type-3:End-cap type or End-deflector type

Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
MRB 0401	4	1	0.8	4.15	4° 23'	3.3	3.7×1	560	790	54	1	11	23	17	13	4	—	15	17	3.4	MRB 0401
MRB 0401K	4	1	0.6	4.15	4° 23'	3.4	1×3	300	430	38	2	9	19	13	10	3	—	13	14	2.9	MRB 0401K
MRB 0402	4	2	0.8	4.15	8° 43'	3.3	2.7×1	420	570	39	1	11	23	19	15	4	—	15	17	3.4	MRB 0402
MRB 0504	5	4	0.8	5.15	13° 53'	4.3	2.7×1	470	720	47	1	12	24	22	18	4	—	16	18	3.4	MRB 0504
MRB 0601 **	6	1	0.8	6.15	2° 58'	5.3	3.7×1	680	1200	75	1	13	26	17	13	4	—	16	20	3.4	MRB 0601 **
MRB 0601K	6	1	0.8	6.20	2° 56'	5.3	1×3	560	950	55	2	11	23	14.5	11	3.5	—	15	17	3.4	MRB 0601K
MRB 0602	6	2	1.0	6.20	5° 52'	5.1	2.7×1	750	1200	58	1	15	28	17	13	4	—	19	22	3.4	MRB 0602
MRB 0606	6	6	1.0	6.30	16° 52'	5.2	1.6×2	870	1450	67	3	14	27	17	8	4	—	16	21	3.4	MRB 0606
MRB 0610	6	10	1.2	6.30	26° 48'	5.0	1.2×2	950	1600	50	3	14	27	23	11.5	4	—	16	21	3.4	MRB 0610

Note 1) All models are Right-hand screw.

Note 2) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, because of production and Nut assembly reason.

Note 3) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.

Note 4) Rigidity

The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

For Axial load condition other than the above, see the formula in page A823, you can calculate Rigidity using this formula.

Note 5) Stainless Rolled Ball Screw

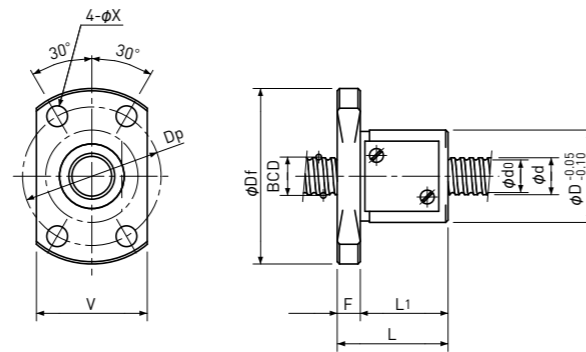
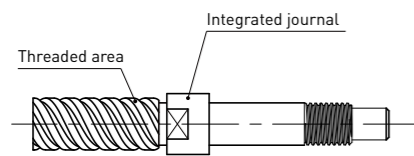
Stainless Rolled Ball Screw is available for Ball Nut Model Number marked **.

Rolled Ball Screws

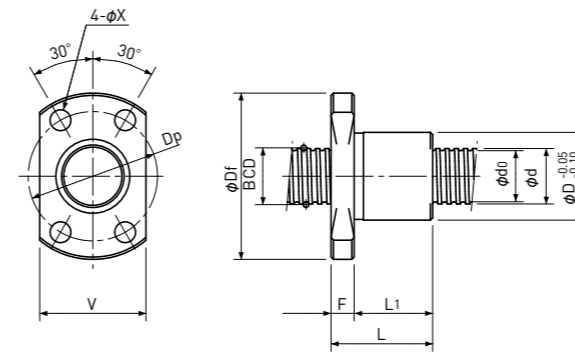
Single Nut with Flange

Backlash type

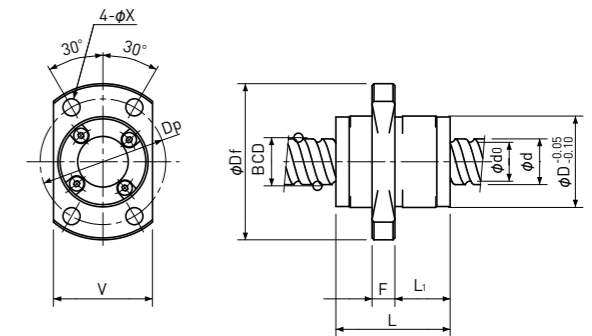
■ Rolled Ball Screws with integrated journal are available ($\phi 12$ or less only), which have larger diameter than threaded area shown below.



Type-1:Return-plate type



Type-2:Internal-deflector type or End-deflector type



Type-3:End-cap type or End-deflector type

Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/ μ m	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
MRB 1002 **	10	2	1.5875	10.30	3°32'	8.6	3.7×1	2700	5300	134	1	23	40	24	19	5	—	25	32	4.5	MRB 1002 **
MRB 1002K	10	2	1.2	10.30	3°32'	9.0	1×3	1450	3000	93	2	17	34	19	14	5	—	21	26	4.5	MRB 1002K
MRB 1003	10	3	2.0	10.30	5°18'	8.2	3.7×1	3900	7200	140	1	24	41	29	24	5	—	26	33	4.5	MRB 1003
MRB 1004	10	4	2.0	10.30	7°03'	8.2	2.7×1	3000	5200	104	1	24	41	28	23	5	—	26	33	4.5	MRB 1004
MRB 1005	10	5	2.0	10.30	8°47'	8.2	2.7×1	3000	5200	103	2	23	40	26	21	5	—	25	32	4.5	MRB 1005
MRB 1006	10	6	2.0	10.30	10°30'	8.2	2.7×1	3000	5000	102	1	26	42	33	28	5	—	28	34	4.5	MRB 1006
MRB 1010	10	10	2.0	10.50	16°52'	8.4	1.6×2	3300	5900	117	3	23	40	24	13	5	—	25	32	4.5	MRB 1010
MRB 1012	10	12	2.0	10.50	19°59'	8.4	1.6×2	3300	6200	115	3	23	40	28	17	5	—	25	32	4.5	MRB 1012
MRB 1015	10	15	2.0	10.50	24°27'	8.4	1.6×2	3300	6400	110	3	23	40	33	22	5	—	25	32	4.5	MRB 1015
MRB 1020	10	20	1.5875	10.40	31°28'	8.7	0.7×4	2100	4000	88	3	20	37	23	13	5	—	22	29	4.5	MRB 1020
MRB 1202	12	2	1.5875	12.30	2°58'	10.6	3.7×1	3000	6400	156	1	25	42	24	19	5	—	27	34	4.5	MRB 1202
MRB 1202K	12	2	1.2	12.30	2°58'	11.0	1×3	1600	3700	109	2	19	36	19	14	5	—	23	28	4.5	MRB 1202K
MRB 1210	12	10	2.381	12.65	14°07'	10.2	1.7×2	5100	9800	152	3	24	41	30	14.5	6	—	26	33	4.5	MRB 1210

Note 1) All models are Right-hand screw.

Note 2) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, because of production and Nut assembly reason.

Note 3) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.

Note 4) Rigidity

The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

For Axial load condition other than the above, see the formula in page A823, you can calculate Rigidity using this formula.

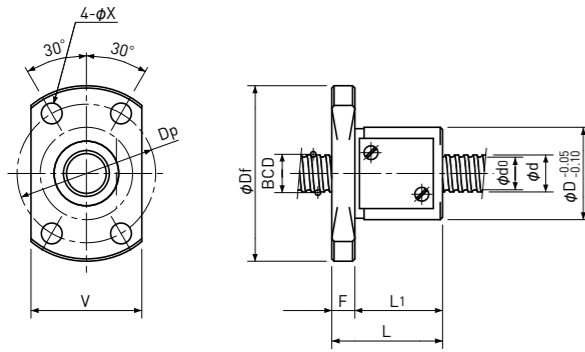
Note 5) Stainless Rolled Ball Screw

Stainless Rolled Ball Screw is available for Ball Nut Model Number marked **.

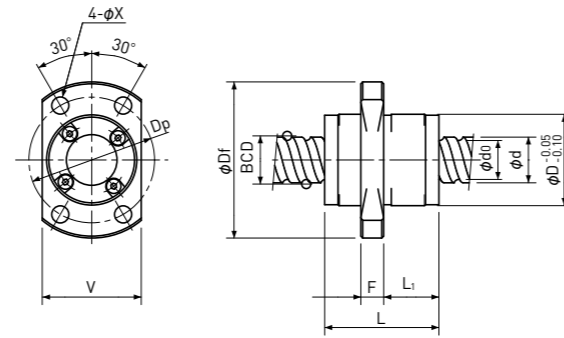
Rolled Ball Screws

Single Nut with Flange

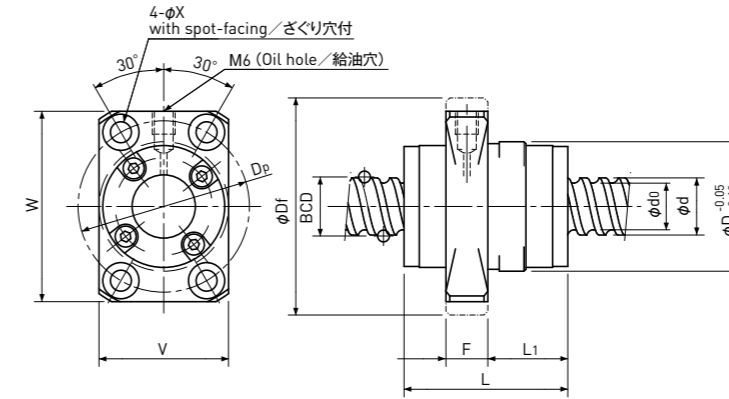
Backlash type



Type-1:Return-plate type



Type-3:End-cap type or End-deflector type



Type-4:End-deflector type

Unit :mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d ₀	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm	Nut dimension										Ball Nut Model number
								Dynamic Ca	Static Coa		Nut type	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
MRB 1312	13	12	2.381	13.50	15°48'	11.0	1.6×2	5000	9900	151	3	28	45	30	17	5	—	30	37	4.5	MRB 1312
MRB 1315	13	15	2.381	13.50	19°29'	11.0	1.6×2	5000	10300	147	3	28	45	35	22	5	—	30	37	4.5	MRB 1315
MRB 1320	13	20	2.381	13.50	25°15'	11.0	1.6×2	5000	10700	142	3	28	45	43	29	5	—	30	37	4.5	MRB 1320
MRB 1402	14	2	1.5875	14.30	2°33'	12.6	3.7×1	3200	7500	176	1	26	45	25	19	6	—	28	36	5.5	MRB 1402
MRB 1404	14	4	2.381	14.30	5°05'	11.8	3.7×1	5700	11600	187	1	30	49	33	27	6	—	32	40	5.5	MRB 1404
MRB 1505	15	5	3.175	15.50	5°41'	12.2	3.7×1	8900	17000	208	4	34	57	33	16	11	50	34	45	5.5	MRB 1505
MRB 1510	15	10	3.175	15.50	11°36'	12.2	2.7×2	12000	25000	289	4	34	57	43	21	11	50	34	45	5.5	MRB 1510
MRB 1520	15	20	3.175	15.75	22°01'	12.7	1.7×2	8000	16000	178	4	34	57	52	28.5	11	50	34	45	5.5	MRB 1520

Note 1) All models are Right-hand screw.

Note 2) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, because of production and Nut assembly reason.

Note 3) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.

Note 4) Rigidity

The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.

For Axial load condition other than the above, see the formula in page A823, you can calculate Rigidity using this formula.

Note 5) Stainless Rolled Ball Screw

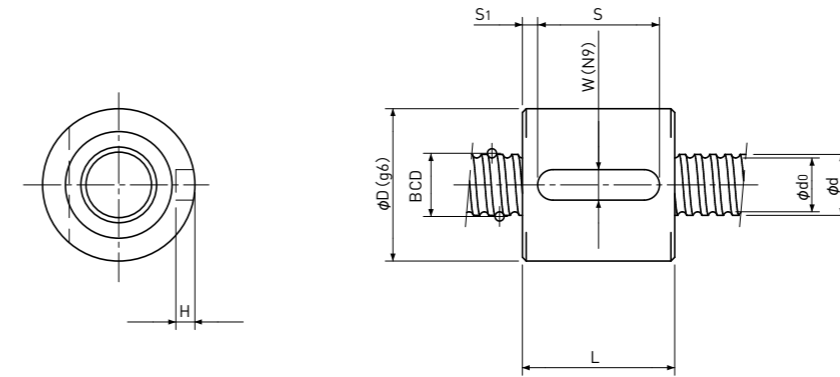
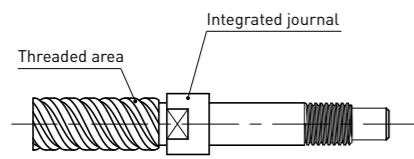
Stainless Rolled Ball Screw is available for Ball Nut Model Number marked **.

Rolled Ball Screws

Sleeve type Single Nut

Backlash type

- Rolled Ball Screws with integrated journal are available ($\phi 12$ or less only), which have larger diameter than threaded area shown below.



Unit:mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity $N/\mu m$	Nut dimension						Ball Nut Model number
								Dynamic C_a	Static C_{oa}		D	L	W	H	S	S_1	
BSR 0401	4	1	0.8	4.15	4° 23'	3.3	3.7x1	560	790	54	11	14	3	1.8	8	3	BSR 0401
BSR 0402	4	2	0.8	4.15	8° 43'	3.3	2.7x1	420	570	39	11	16	3	1.8	8	4	BSR 0402
BSR 0504	5	4	0.8	5.15	13° 53'	4.3	2.7x1	470	720	47	12	22	3	1.8	12	5	BSR 0504
BSR 0601 **	6	1	0.8	6.15	2° 58'	5.3	3.7x1	680	1200	75	13	14	3	1.8	10	2	BSR 0601 **
BSR 0602	6	2	1.0	6.20	5° 52'	5.1	2.7x1	750	1200	58	15	15	3	1.8	10	2.5	BSR 0602
BSR 0801 **	8	1	0.8	8.15	2° 15'	7.3	3.7x1	780	1650	95	16	14	3	1.8	10	2	BSR 0801 **
BSR 0802 **	8	2	1.5875	8.30	4° 23'	6.6	3.7x1	2400	4100	111	20	20	4	2.5	16	2	BSR 0802 **
BSR 0802.5	8	2.5	1.5875	8.00	5° 41'	6.3	2.7x1	1850	3000	80	16	16	3	1.8	8	4	BSR 0802.5
BSR 0805	8	5	1.5875	8.30	10° 51'	6.6	2.7x1	1850	3000	82	18	28	4	2.5	20	4	BSR 0805

Note 1) All models are Right-hand screw.

Note 2) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, because of production and Nut assembly reason.

Note 3) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.

Note 4) Rigidity

The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Axial load equivalent to 30% of the Basic Dynamic Load Rating C_a .

For Axial load condition other than the above, see the formula in page A823, you can calculate Rigidity using this formula.

Note 5) Stainless Rolled Ball Screw

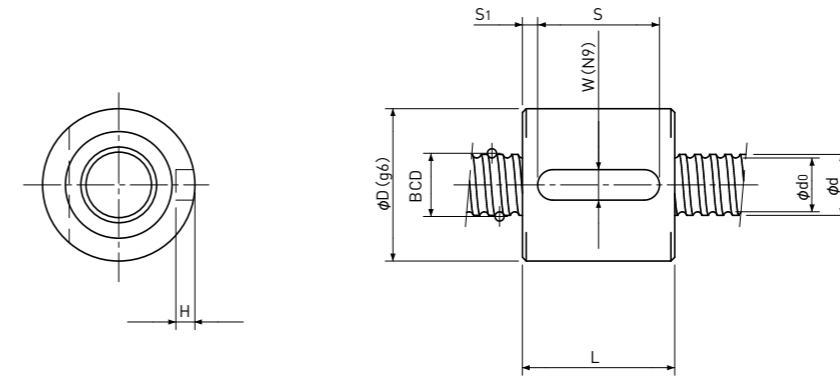
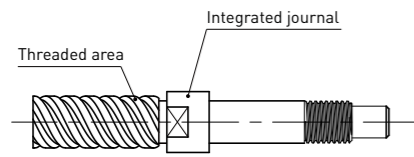
Stainless Rolled Ball Screw is available for Ball Nut Model Number marked **.

Rolled Ball Screws

Sleeve type Single Nut

Backlash type

- Rolled Ball Screws with integrated journal are available ($\phi 12$ or less only), which have larger diameter than threaded area shown below.



Unit:mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/ μ m	Nut dimension						Ball Nut Model number
								Dynamic C_a	Static C_{oa}		D	L	W	H	S	S_1	
BSR 1002 **	10	2	1.5875	10.30	3°32'	8.6	3.7x1	2700	5300	134	23	20	5	3	16	2.0	BSR 1002 **
BSR 1003	10	3	2.0	10.30	5°18'	8.2	3.7x1	3900	7200	140	24	26	5	3	20	3	BSR 1003
BSR 1004	10	4	2.0	10.30	7°03'	8.2	2.7x1	3000	5200	104	24	26	5	3	20	3	BSR 1004
BSR 1005	10	5	2.0	10.30	8°47'	8.2	2.7x1	3000	5200	103	23	26	5	3	16	5	BSR 1005
BSR 1006	10	6	2.0	10.30	10°30'	8.2	2.7x1	3000	5000	102	26	31	5	3	20	5.5	BSR 1006
BSR 1202	12	2	1.5875	12.30	2°58'	10.6	3.7x1	3000	6400	156	25	20	5	3	16	2	BSR1202
BSR 1402	14	2	1.5875	14.30	2°33'	12.6	3.7x1	3200	7500	176	26	20	5	3	16	2	BSR 1402
BSR 1404	14	4	2.381	14.30	5°05'	11.8	3.7x1	5700	11600	187	30	31	5	3	25	3	BSR 1404

Note 1) All models are Right-hand screw.

Note 2) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, because of production and Nut assembly reason.

Note 3) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.

Note 4) Rigidity

The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Axial load equivalent to 30% of the Basic Dynamic Load Rating C_a .

For Axial load condition other than the above, see the formula in page A823, you can calculate Rigidity using this formula.

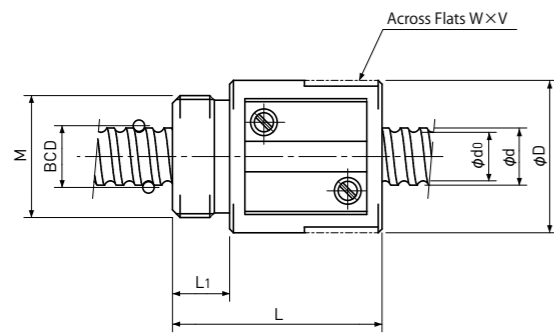
Note 5) Stainless Rolled Ball Screw

Stainless Rolled Ball Screw is available for Ball Nut Model Number marked **.

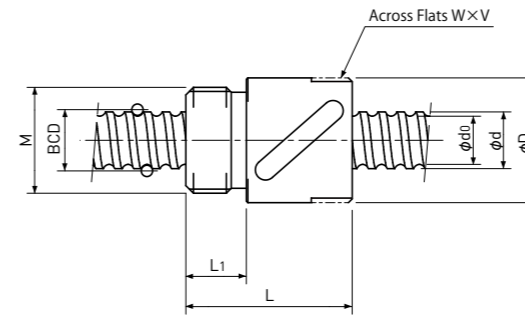
Rolled Ball Screws

Single Nut with M-thread

Backlash type

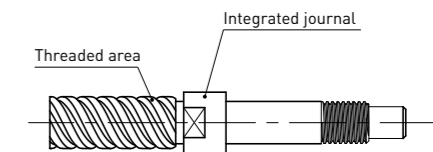


Type-1:Return-plate type



Type-2:Return-tube type

■ Rolled Ball Screws with integrated journal are available ($\phi 12$ or less only), which have larger diameter than threaded area shown below.



Unit: mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/ μ m	Nut dimension						Ball Nut Model number	
								Dynamic C_a	Static C_o		Nut type	D	L	L_1	Across Flats width W	Across Flats length V		M
MSR 0401 B	4	1	0.8	4.15	4° 23'	3.3	3.7x1	560	790	54	1	11	17	4	10	6	M9x0.75	MSR 0401 B
MSR 0802 B **	8	2	1.5875	8.30	4° 23'	6.6	3.7x1	2400	4100	111	1	20	27.5	7.5	18	5	M16x1.0	MSR 0802 B **
MSR 0802.5 T(1)	8	2.5	1.5875	8.00	5° 41'	6.3	3.5x1	2300	3900	102	2	16.5	22	8	14	4	M14x1.0	MSR 0802.5 T(1)
MSR 0802.5 T(2)	8	2.5	1.5875	8.00	5° 41'	6.3	3.5x1	2300	3900	102	2	17.5	25.5	7.5	15	4	M15x1.0	MSR 0802.5 T(2)
MSR 0805 A	8	5	1.5875	8.30	10° 51'	6.6	2.7x1	1850	3000	82	1	18	32.5	7.5	16	5	M15x1.0	MSR 0805 A
MSR 1002 B **	10	2	1.5875	10.30	3° 32'	8.6	3.7x1	2700	5300	134	1	23	27.5	7.5	21	5	M17x1.0	MSR 1002 B **
MSR 1003 B	10	3	2.0	10.30	5° 18'	8.2	3.7x1	3900	7200	140	1	24	32	8	22	5	M18x1.0	MSR 1003 B
MSR 1202 B	12	2	1.5875	12.30	2° 58'	10.6	3.7x1	3000	6400	156	1	25	30	10	23	5	M20x1.0	MSR 1202 B
MSR 1402 B	14	2	1.5875	14.30	2° 33'	12.6	3.7x1	3200	7500	176	1	26	30	10	23	5	M22x1.5	MSR 1402 B
MSR 1404 B	14	4	2.381	14.30	5° 05'	11.8	3.7x1	5700	11600	187	1	30	38	10	27	8	M25x1.0	MSR 1404 B

Note 1) All models are Right-hand screw.

Note 2) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, because of production and Nut assembly reason.

Note 3) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.

Note 4) Rigidity

The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Axial load equivalent to 30% of the Basic Dynamic Load Rating C_a .

For Axial load condition other than the above, see the formula in page A823, you can calculate Rigidity using this formula.

Note 5) Stainless Rolled Ball Screw

Stainless Rolled Ball Screw is available for Ball Nut Model Number marked **.