



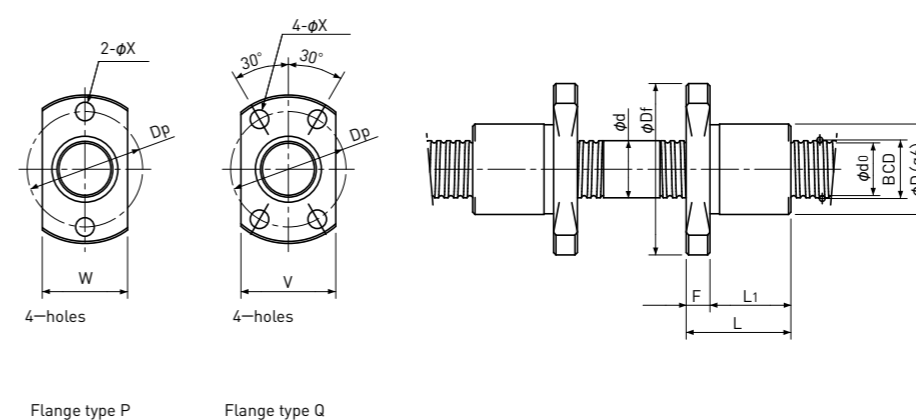
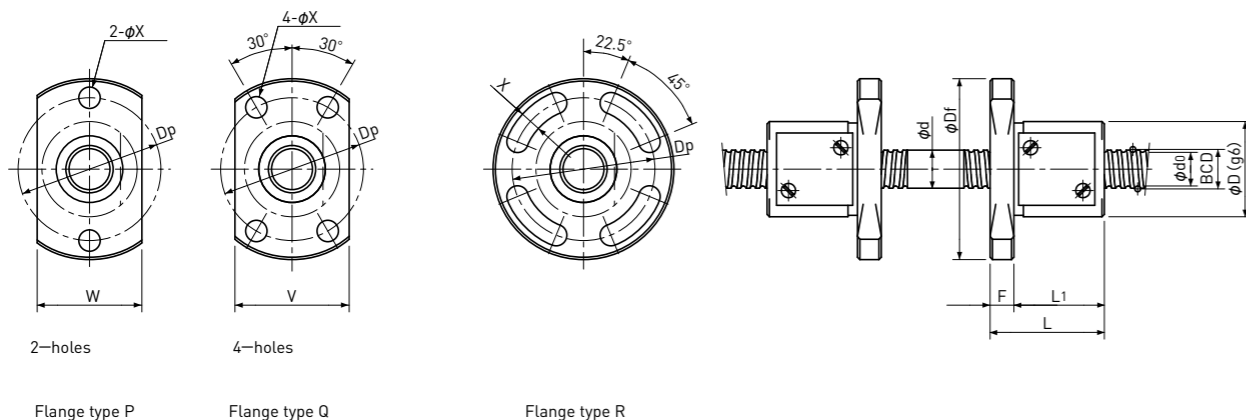
## **Bi-directional Nut with Flange**



# 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 <sub>0</sub>	Number of Circuit	Basic Load Rating		Nut Rigidity N/μm	Nut dimension											Ball Nut Model number
								N			D	Df	L	L <sub>1</sub>	F	W	V	Dp	Bolt Hole X	Flange Type		
								Dynamic Ca	Static Coa													
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
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	P,Q	FBS 0401 B
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
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	P,Q	FBS 0501 B
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
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	P,Q	FBS 0601 B
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
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	P,Q	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	P,Q	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	P,Q	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	P,Q	FKB 0802 A
FBS 0802 B	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	P,Q,R	FBS 0802 B

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

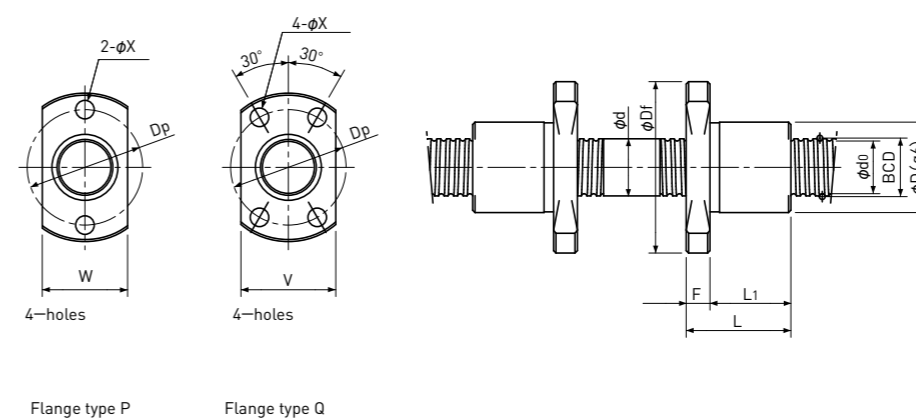
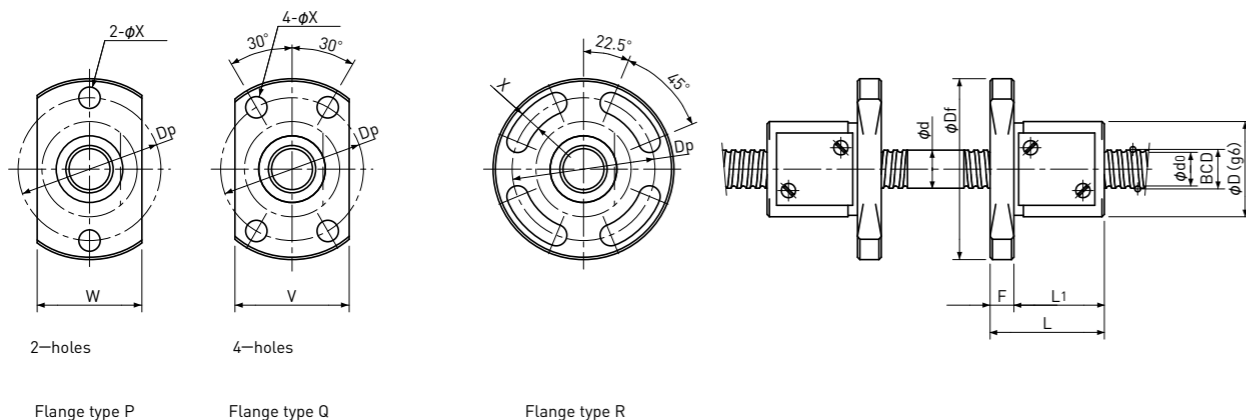
- Note 1) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
- Note 2) Ball Nut dimension is without seal at the both ends.  
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Some type of Ball Nuts cannot equip with seals, 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 p-A823, 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 <sub>0</sub>	Number of Circuit	Basic Load Rating		Nut Rigidity N/μm	Nut dimension											Ball Nut Model number
								N			D	Df	L	L <sub>1</sub>	F	W	V	Dp	Bolt Hole X	Flange Type		
								Dynamic Ca	Static Coa													
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
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	P,Q	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	P,Q	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	P,Q	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	P,Q	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	P,Q,R	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	P,Q	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	P,Q,R	FBS 1002.5 B
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,R	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,R	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,R	FBS 1005 A

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

Preload type  
Backlash type

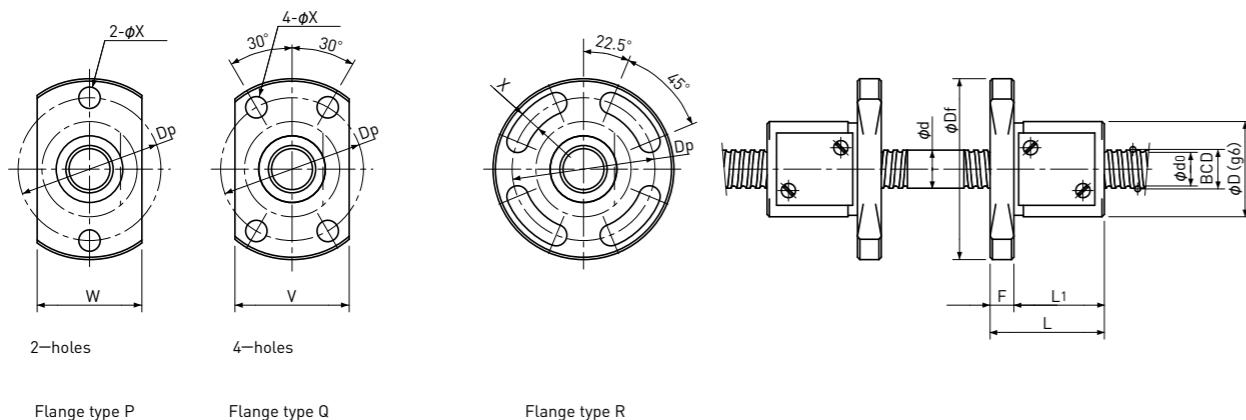
- Note 1) The diameter of the Screw Shaft both ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
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Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.  
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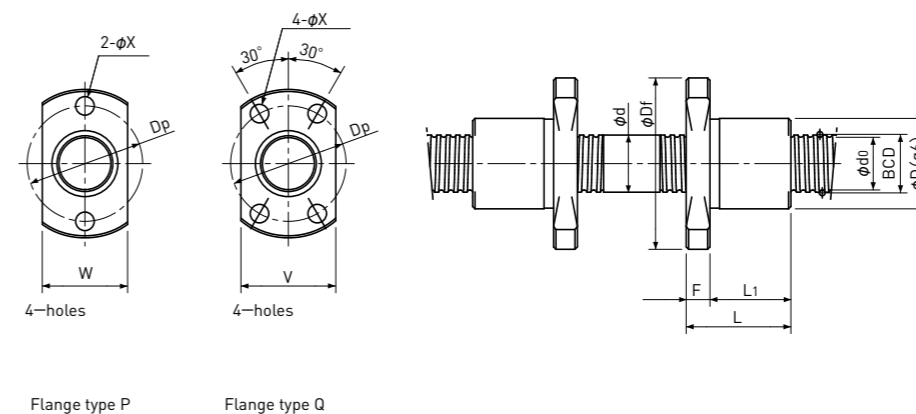
# Precision Ball Screws

## 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 <sub>0</sub>	Number of Circuit	Basic Load Rating		Nut Rigidity N/μm	Nut dimension											Ball Nut Model number
								N			D	Df	L	L <sub>1</sub>	F	W	V	Dp	Bolt Hole X	Flange Type		
								Dynamic Ca	Static C <sub>0a</sub>													
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
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	P,Q	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	P,Q	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	P,Q,R	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	P,Q	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	P,Q,R	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	P,Q	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	P,Q,R	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	P,Q,R	FBS 1204 B

Basic Load Rating		Nut Rigidity N/μm
N		
Dynamic Ca	Static C <sub>0a</sub>	164 / 138
1000 / 640	3300 / 1650	

Preload type  
Backlash type

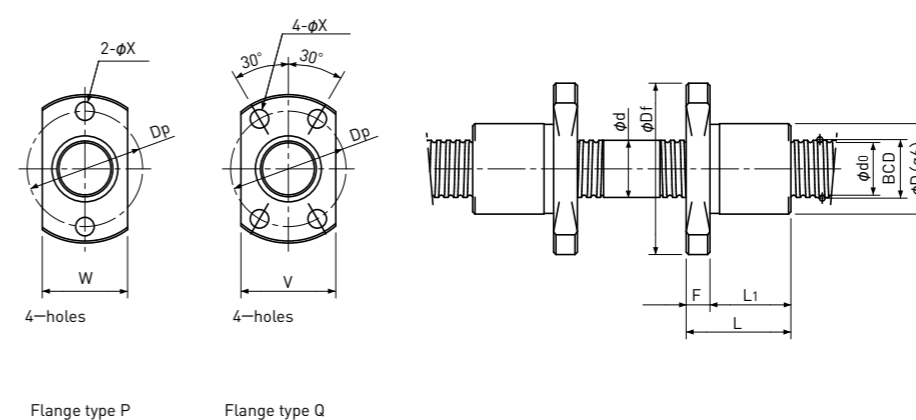
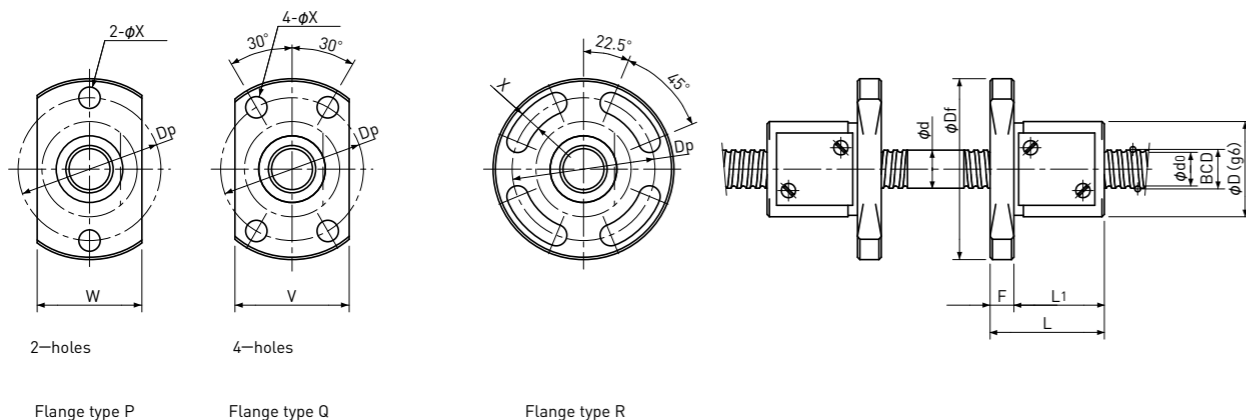
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Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.  
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# Precision Ball Screws

## 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 <sub>0</sub>	Number of Circuit	Basic Load Rating		Nut Rigidity N/μm	Nut dimension											Ball Nut Model number
								N			D	Df	L	L <sub>1</sub>	F	W	V	Dp	Bolt Hole X	Flange Type		
								Dynamic Ca	Static Coa													
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
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	P,Q,R	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	P,Q	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	P,Q,R	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	P,Q	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	P,Q,R	FBS 1403 B
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 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	P,Q,R	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	P,Q,R	FBS 1405 B

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

Preload type  
Backlash type

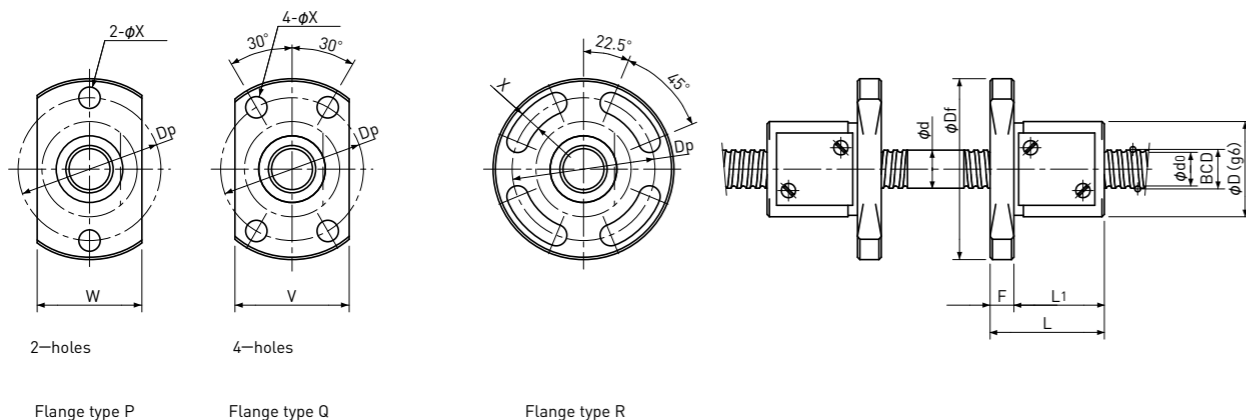
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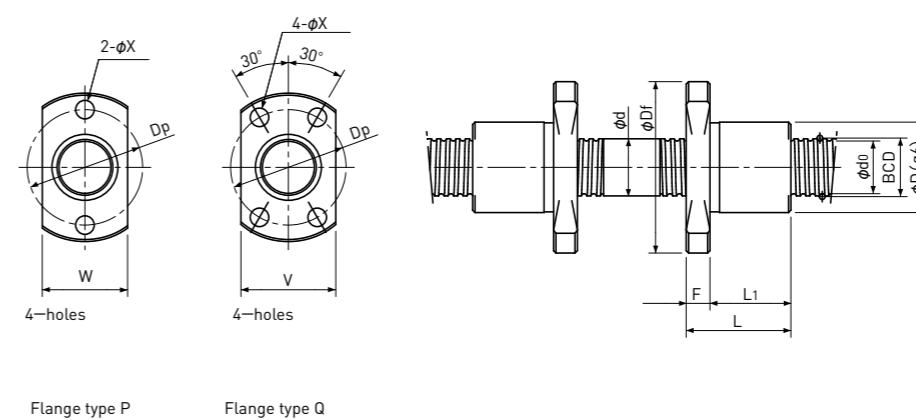
# Precision Ball Screws

## 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 <sub>0</sub>	Number of Circuit	Basic Load Rating		Nut Rigidity N/μm	Nut dimension											Ball Nut Model number
								N			D	Df	L	L <sub>1</sub>	F	W	V	Dp	Bolt Hole X	Flange Type		
								Dynamic Ca	Static Coa													
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
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	P,Q,R	FBS 1602 B
FKB 1602.5 A	16	2.5	1.5875	16.40	2°47'	14.7	1×3	2700 / 2700	6500 / 6500	142 / 221	2	24	43	22	16	6	26	27	34	5.5	P,Q	FKB 1602.5 A
FBS 1602.5 B	16	2.5	1.5875	16.30	2°48'	14.6	3.7×1	3400 / 2100	8600 / 4300	197 / 163	1	28	48	27	21	6	30	30	39	5.5	P,Q,R	FBS 1602.5 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	P,Q	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	P,Q,R	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	P,Q	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	P,Q,R	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	P,Q,R	FBS 1605 B

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

Preload type  
Backlash type

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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.  
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