

Rolled Ball Screws

Shaft Ends Configurable / Accuracy Grade C10

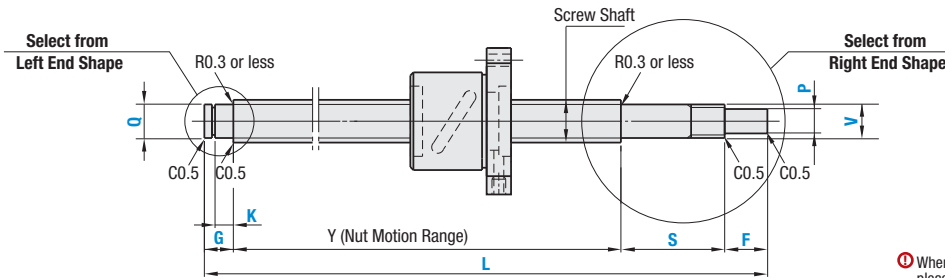
Rolled Ball Screws – Shaft Ends Configurable / Accuracy Grade C10



RoHS10

Nut Types	Type	Screw Shaft			Ball Nut		
		Material	Hardness	Surface Treatment	Material	Hardness	Surface Treatment
Standard Ball Nut	FBSSR	1055 Carbon Steel	Induction Hardened 56-62 HRC min.	Phosphate Conversion Coating	JIS-SCM420	Carburized 58-62 HRC min.	Low Temperature Black Chrome Plating (Screw Shaft 8 and 10 are applied with Phosphate conversion coating)
	FBSSZ			—			—

① Filled with lithium soap based grease (Alvania Grease S2 made by Showa Shell Sekiyu K.K.).



V	Tolerance
6	-0.002
8	-0.007
10	-0.002
12 / 15	-0.008
20 / 25	-0.015
12 / 15	-0.003
20 / 25	-0.018
12 / 15	-0.004
20 / 25	-0.021

① When mating with support units, please insert a collar.

Left (Support Side) Shaft End Shape		Right (Fix Side) Shaft End Shape	
A No Machining on the Shaft End ① With a Centering Hole	B Stepped Machining ① With a Centering Hole	A No Machining on the Shaft End ① With a Centering Hole	J Double Stepped End Machining ① V-P≥2
C Single Stepped (Retaining Ring Groove) ① K<G	D Single Stepped (Tapped Hole on End) ① V-P≥2	K Double Stepped (Keyway) ① V-P≥2	M Double Stepped (Tapped Hole on End) ① V-P≥2
E Single Stepped (Retaining Ring Groove – Tapped Hole on End) ① K<G	F Single Stepped (2 Width Specified Flats Machined) ① JC+J<G	N Double Stepped (One Flat) ① SC<F 2≤F-SC V-P≥2	P Double Stepped (90° Flats) ① SC<F 2≤F-SC V-P≥2
G Single Stepped (Square End Machining) ① Y<G 2≤G-Y	H Double Stepped End Machining ① Y<G 2≤G-Y	R Double Stepped (Square End Machining) ① X<F 2≤F-X V-P≥2	S Double Stepped (Tapped Hole – Square End Machining) ① X<F 2≤F-X V-P≥2

① For each ball nut dimensions and specifications, please refer to the page where each product is listed.
 ② When combining the left end shape F, G and the right end shape K, N, P, R, S, there is no angular phase relationship.

Rolled Ball Screws

Shaft Ends Configurable / Accuracy Grade C10, continued

Precision Class	Part Number		1 mm Increment		1 mm Increment		Selection		1 mm Increment		Selection																				
	Type	Left End Support Side	Right End Fixed Side	Screw Shaft Outer Dia.	Lead	L	F	P	S	U	C	KC	SC	X	Z	V	E (Coarse)	G	K	J	JC	H	Y	R	W	Q	N (Coarse)				
C10	FBSSR FBSSZ	A B C D E F G H	J K M N P R S	08	02	100-400											6										6	—			
				08	04	100-380													8										6	—	
				10	02	150-585														8										6	—
				10	04	150-600														10										6	—
				10	10	150-585														10										6	—
				12	04	150-800														8	10									6	8
				12	10	150-800														8	10									6	8
				14	05	150-800														10	12									6	8
				15	05	150-1200														10	12									6	8
				15	10	200-1200														10	12									6	8
				15	20	200-1200														10	12									6	8
				20	05	200-2000														10	12	15								6	8
				20	10	250-2000														15	20									6	8
				20	20	250-2000														15	20									6	8
				25	05	200-2000														15	20									6	8
				25	10	300-2000														20	25									6	8
				25	25	300-2000														20	25									6	8
				28	06	200-2000														20	25									6	8
32	10	300-2000														20	25									6	8				
32	32	300-2000														20	25									6	8				

① For FBSSZ type, sizes 0804, 1002 and 1010 are not available. ② E≤P-4 ③ N≤Q-4

Part Number Example: FBSSRAA1004 - 450
 FBSSZDJ2010 - 1200 - F36 - P12 - S60 - V15 - U15
 -G20-Q15 -N10

① Caution: Do not remove any nuts from their screw shafts or allow nuts to overrun the stroke. It may cause the balls to fall out or damage the ball recirculation parts.
 ② For Rolled Ball Screws accuracy, refer to P.752-754.
 ③ For the Support Unit, P.792-802.
 ④ For Nut Brackets, refer to P.810.

Shaft Dia.	Lead	Available Types															
		FBSSR						FBSSZ									
		Min. L-200	201-400	401-600	601-800	801-1000	1001-1200	1201-1500	1501-2000	Min. L-200	201-400	401-600	601-800	801-1000	1001-1200	1201-1500	1501-2000
08	02	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
08	04	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10	02	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10	04	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
12	04	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
12	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
14	05	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
15	05	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
15	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
15	20	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
20	05	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
20	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
20	20	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
25	05	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
25	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
25	25	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
28	06	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
32	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
32	32	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Part Number Alterations: FBSSZDJ2010 - 1200 - F36 - P12 - S60 - V15 - U15
 -G20-Q15 -N10 -RLC

Alterations	Code	Spec.
Ball Nut Orientation Reversed (Left Shaft / Right Shaft)	RLC	Changes the nut direction. Ordering Code: RLC
Wrench Flats on Fixed Side	SZC	Adds wrench flats on the shaft right end. Ordering Code: SZC ① Ball bearings will fall out if the ball nut crosses the wrench flats. ② ℓ indicates incomplete hardened area

Shaft Diameter	Z	ZC	S	ℓ
8	4	4	5	18
10	5	5	8	20
12	5	5	8	20
14	5	7	10	22
15	5	7	10	22
20	6	9	16	25
25	7	10	18	27
28	8	11	21	29
32	9	13	27	32

Retaining Ring Groove Details

Q	e Tolerance	m+0.14
6	5.7	0
8	7.6	-0.06
10	9.6	0
12	11.5	-0.09
15	14.3	-0.11
20	19	0
25	23.9	-0.21

Keyway Details

Applicable Shaft / Hole Dia. P	Key Groove Dimension			
	b ₁	Ref. Dim.	Tol.	t ₁
6-7	2	-0.004	1.2	+0.1
8-10	3	-0.029	1.8	
11/12	4	0	2.5	0
13-17	5	-0.030	3.0	
18-22	6	0	3.5	0.16
23	8	-0.036	4.0	

Square Machining Details

Q (P)	W (Z) 1 mm Increment
6-10	5-8
11-14	8-10
15-19	10-14
20-25	14-20

Q (P)/2 √2≤W (Z)
 Chamfering may not be available depending on the relationship between Q (P) and W(Z).

V (Fine Thread) Details

M	Pitch
6	0.75
8	1.0
10	1.0
12	1.0
15	1.0
20	1.0
25	1.5