Precision Ball Screws (Shaft Diameter 12, Lead 2, 4, 5, 10)

Accuracy Grade C3, C5, C7

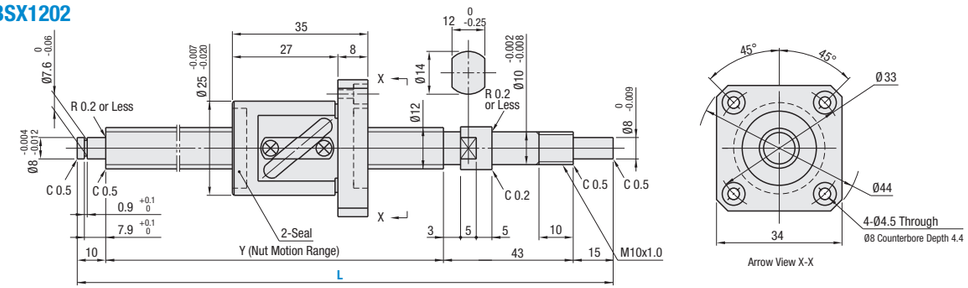
Precision Ball Screws (Shaft Diameter 12, Lead 2, 4, 5, 10) – Accuracy Grade C3, C5, C7

RoHS10

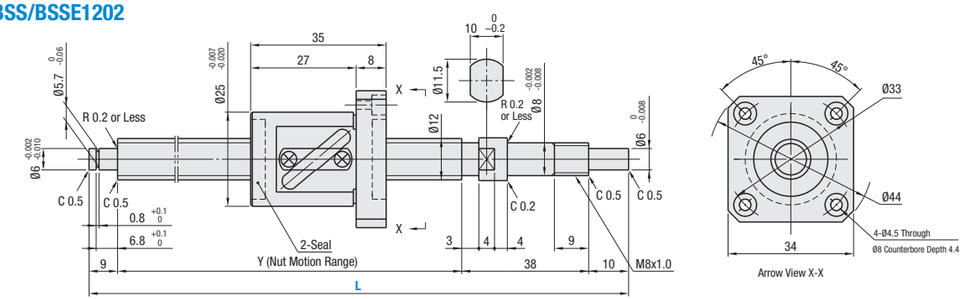
Nut Type	Type	Accuracy Grade	Shaft Diameter	Lead	Screw Shaft		Nut	
					Material	Hardness	Material	Hardness
Standard Nut	BSX	C3	12	2	*4150 Alloy Steel	*Induction Hardened 58–62 HRC min.	JIS SCM420	Carburized 58–62 HRC min.
	BSS	C5		2, 4, 5, 10				
	BSSE	C7		2, 5, 10				

*For 1202, screw shaft material JIS-SCM415 Alloy Steel is carburized.

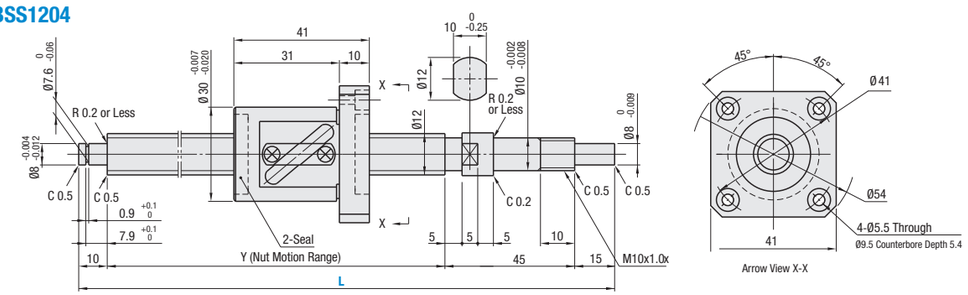
BSX1202



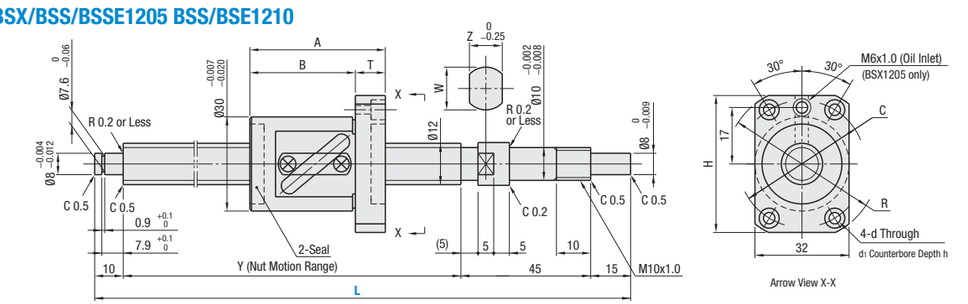
BSS/BSSE1202



BSS1204



BSX/BSS/BSSE1205 BSS/BSE1210



Precision Ball Screws (Shaft Diameter 12, Lead 2, 4, 5, 10)

Accuracy Grade C3, C5, C7, *continued*

Nut Type	Accuracy Grade	Part Number: Type	Part Number: Screw Shaft Dia.	Part Number: Lead	1 mm Increment L	Y	A	B	T	Z	W	H	R	C	d	d_1	h	Ball Dia.	Ball Center Dia.	Screw Root Dia.	Number of Circuits[1]	Basic Load Rating C (Dynamic) kN	Basic Load Rating Co (Static) kN	Axial Play	Preload Torque N•cm	Twisting Direction
Standard Ball Nut	C3	BSX	12	02	150–390	L-68	—											1.5875	12.3	(10.6)	2.5 Turns 1 Row	1.54	2.05	0 (Preloaded)	0.4–3.2	Right
	C5	BSS			150–445	L-57																2.45	4.1	0.005 or Less	1.0 or Less	
	C7	BSSE																						0.030 or Less	—	
	C5	BSS		04	150–400	L-70												2.3812	12.6	(10.1)		3.6	6.75	0.005 or Less	1.0 or Less	
	C3	BSX		05	150–440	L-70	44	34	10	12	14	45	50	40	4.5	8	4.4	3.175	12.8	(9.5)		3.74	4.9	0 (Preloaded)	1.5–5.0	Right
	C5	BSS			150–450					10	12											5.95	9.8	0.005 or Less	1.0 or Less	
	C7	BSSE																						0.030 or Less	—	Right
	C5	BSS		10	200–600	L-70	49	37	12			48	54	41	5.5	9.5	5.4				1.5 Turns 1 Row	3.85	5.9	0.005 or Less	2.0 or Less	
	C7	BSSE																						0.030 or Less	—	

[1]See **P.750** for details.

kgf=Nx0.101972

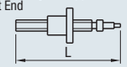
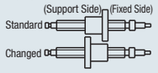
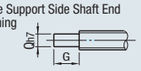
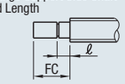
Part Number Alterations

Part Number	-	L	-	(FC, KC, etc.)
BSX1202	-	300	-	SWC13

Part Number Example

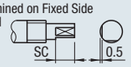
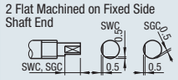
Part Number	-	L	
BSX1202	-	300	
BSSE1210L	-	420	L Type Greased
BSSE1210G	-	420	G Type Greased

Accuracy Grade	Part Number	Available Types L150–199	L200	L201–250	L251–290	L291–295	L296–300	L301–390	L391–400	L401–440	L441–445	L446–450	L451–600
C3	BSX1202	•	•	—	—	—	—	—	—	—	—	—	—
C5	BSS1202	•	•	•	•	•	•	•	•	•	•	—	—
C7	BSSE1202	•	•	•	•	•	•	•	•	•	•	—	—
C5	BSS1204	•	•	•	•	•	•	•	•	—	—	—	—
C3	BSX1205	•	•	•	•	•	•	•	•	•	—	—	—
C5	BSS1205	•	•	•	•	•	•	•	•	•	•	•	—
C7	BSSE1205	•	•	•	•	•	•	•	•	•	•	•	—
C5	BSS1210	—	•	•	•	•	•	•	•	•	•	•	•
C7	BSSE1210	—	•	•	•	•	•	•	•	•	•	•	•

Alterations	Code	Spec.
No Machining on Support Side Shaft End 	NC	No machining added on the support side shaft end. **Ordering Code:** NC
Ball Nut Orientation Reversed 	RLC	Changes the nut direction. **Ordering Code:** RLC
No Retaining Ring Groove on Support Side Shaft End	RNC	Retaining ring groove in not machined on the support side shaft end. **Ordering Code:** RNC ⓘ Combination with FC is not available.
Change Support Side Shaft End Machining 	GC	Changes the machining on the support side. Q is selectable from 6, 8 ⓘ Y dimension is shortened. G = 1 mm Increment **Ordering Code:** GC-Q8-G20 ⓘ 5≤G≤Qx3 ⊗ Not applicable to 1202 of C5 and C7.
Change Support Side Shaft End Length 	FC	Changes the length of the support side shaft end. FC = 1 mm Increment **Ordering Code:** FC20

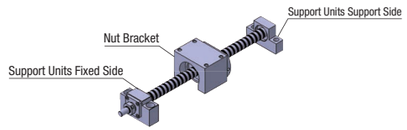
Size	ℓ	FC Range
1202	6.8	10≤FC≤20
1204 1205 1210	7.9	11≤FC≤20

ⓘ Y dimension is shortened.

Alterations	Code	Spec.
Keyway on Fixed Side Shaft End Detailed Keyway Dimensions **P.752**.	KC	Adds a keyway on the fixed side shaft end. KC = 1 mm Increment **Ordering Code:** KC10 ⓘ 3≤KC≤14 (9)
Keyway on Fixed Side Shaft End	KLC	Adds a keyway at a customer specified area on the fixed side shaft end. (Key groove dim. is the same as KC.) K, S = 1 mm Increment **Ordering Code:** KLC-K5-S1 ⓘ 4≤K+S≤14 (9)
Flat Machined on Fixed Side Shaft End 	SC	Adds a flat on the fixed side shaft end. SC = 1 mm Increment **Ordering Code:** SC7 ⓘ 5≤SC≤14 (9)
2 Flat Machined on Fixed Side Shaft End 	SWC SGC	Adds two flats on the fixed side shaft end. SWC: 90° Position SGC: 120° Position 1 mm Increment **Ordering Code:** SWC10 ⓘ 5≤SWC, SGC≤14 (9)

ⓘ Dimensions in ( ) are for 1202.

Peripherals: Combination of the following parts are available.



Combination with Support Units

Ball Screw Part Number: Type	Screw Shaft Outer Diameter	Lead	Recommended Support Units: Part Number Type	Part Number No.	Shape	Fixed Side	Support Side	Page
BSX	12	02	BRW	10	Round	○	—	800
			BUR	10		—	○	802
			BSW	10	Square	○	—	794
			BUN	10		—	○	798
		05	BRW	10	Round	○	—	800
			BUR	10		—	○	802
			BSW	10	Square	○	—	794
			BUN	10		—	○	798
BSS BSSE		02	BRW	8	Round	○	—	800
			BUR	8		—	○	802
			BSW	8	Square	○	—	794
			BUN	8		—	○	798
		04 05 10	BRW	10S	Round	○	—	800
			BUR	10S		—	○	802
			BSW	10S	Square	○	—	794
			BUN	10S		—	○	798

ⓘ Aside from the part numbers shown above, there are a variety of other Support Units available with various shapes and surface treatments. (**P.792–802**).

Combination with Nut Brackets

Ball Screw Part Number: Type	Screw Shaft Outer Diameter	Lead	Recommended Nut Brackets: Part Number Type	Part Number No.	Page
BSX BSS BSSE	12	02	BNFB	1202S	810
		04	BNFM	1204S	810
		05	BNFR	1205S	810
		10	BNFA	1210S	810

ⓘ Variety of materials and surface treatments for Nut Brackets are available. (**P.810**).

Note:

- ⓘ Filled with lithium soap based grease (Alvania Grease S2 made by Showa Shell Sekiyu K.K).
- ⓘ Caution: Do not remove nuts from screw shafts or allow nuts to overrun the stroke. It may cause balls to fall out or damage ball recirculation parts.
- ⓘ Various grease options are available. For specifications **P.752**. ⊗ BSX is not applicable.
- ⓘ For accuracy of Ball Screws, see **P.752–754**.
- ⓘ For details of Support Units, see **P.792–802**.