

Ball Screws and Support Units

Rolled Ball Screws (For transfer)



Price Reduced
Up to 26%



Price Reduced
Up to 26%

Product Name Rolled Ball Screws -Shaft Diameter 8, Lead 2 · 4- -Shaft Diameter 10, Lead 2 · 4 · 10-
Page 655 657



Price Reduced
Up to 26%



Price Reduced
Up to 26%

Rolled Ball Screws -Shaft Diameter 12, Lead 4 · 10- -Shaft Diameter 14, Lead 5-
659 659



Price Reduced
Up to 25%



Price Reduced
Up to 28%

Rolled Ball Screws -Shaft Diameter 15, Lead 5 · 10 · 20- -Shaft Diameter 20, Lead 5 · 10 · 20-
661 663



Price Reduced
Up to 28%



Price Reduced
Up to 11%



Price Reduced
Up to 28%

Rolled Ball Screws -Shaft Diameter 25, Lead 5 · 10 · 25- -Shaft Diameter 28, Lead 6- -Shaft Diameter 32, Lead 10 · 32-
665 667 667



Price Reduced
Up to 22%



Price Reduced
Up to 22%



Rolled Ball Screws -Block Nut, Lead 5- -Block Nut, Lead 10- -Shaft Ends Configurable-
669 669 671

Precision Ball Screws (For positioning)



Price Reduced
20%



Precision Ball Screws -Shaft Diameter 6, Lead 1- -Shaft Diameter 8, Lead 1 · 2- -Shaft Diameter 10, Lead 2 · 4 · 10-
673 673 675



Precision Ball Screws -Shaft Diameter 12, Lead 2 · 4 · 5 · 10- -Shaft Diameter 15, Lead 5 · 10 · 20 · 40- -Shaft Diameter 20, Lead 5 · 10 · 20 · 40- -Shaft Diameter 25, Lead 5 · 10 · 20-
677 679 681 683

Support Units



Price Reduced
Up to 5%



Price Reduced
Up to 5%



Price Reduced
Up to 5%



Price Reduced
Up to 5%

Support Units - Square -Fixed Side Standard- -Fixed Side - Economy Type- -Fixed Side with Dowel Hole- -Fixed Side - Radial Bearing Type-
687 687 688 688



Support Units - Square -Support Side- Stoppers for Ball Screws Support Units - Square -Fixed Side with Damper- -Support Side Unit with Damper-
689 689 690 690



Addition



Precision Collars for Support Units Support Units - Square -Fixed Side Compact- -Fixed Side Low Profile- -Fixed Side Mounting Hole Narrow Pitch- -Support Side Compact-
690 691 691 691 692

Addition



Price Reduced
Up to 8%



Price Reduced
Up to 8%

Support Units - Square -Support Side Low Profile- -Support Side Mounting Hole Narrow Pitch- Support Units - Round -Fixed Side Standard Type- -Support Side-
692 692 693 693



Price Reduced
Up to 4%



Price Reduced
Up to 4%

Ball screw Peripheral Components

Addition



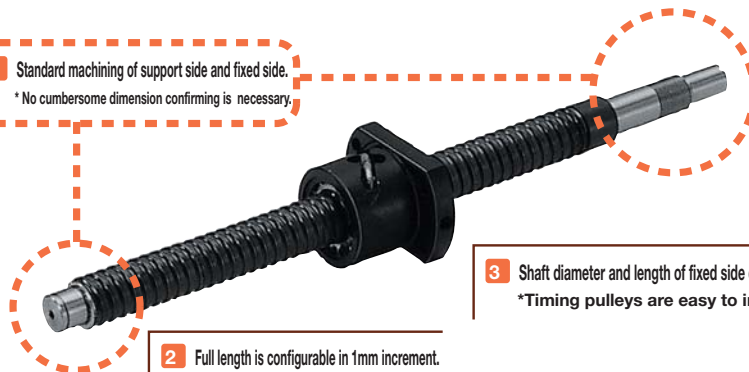
Support Units - Round -Fixed Side Economy- -Fixed Side - Radial Bearing Type- Brackets for Ball Screw Nuts -Block Type- Joint Units
694 694 695 696

Features of MISUMI Ball Screws

1 Standard machining of support side and fixed side.
* No cumbersome dimension confirming is necessary.

2 Full length is configurable in 1mm increment.
* Configurable for any space

3 Shaft diameter and length of fixed side can be changed.
* Timing pulleys are easy to install



Rolled Ball Screws · Precision Ball Screws

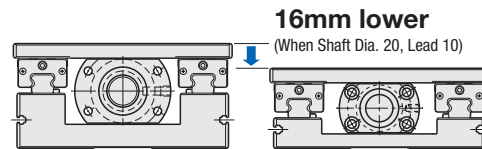
-Features-

■ Features of MISUMI Ball Screws

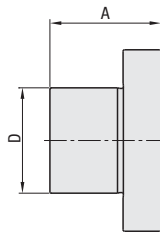
- Rolled Ball Screws with lower Nut capacity up to 40%, as well as Compact Nut Series are now available!

Reduced in volume up to 40%.

Lower profile linear units can be designed.



-Nut Size Comparison-



Screw Shaft Outer Diameter	Lead	D Dimensions		A Dimensions	
		Standard Ball Nut	Compact Ball Nut	Standard Ball Nut	Compact Ball Nut
8	2	20	16	28	22.5
10	4	26	22	34	31
12	4	30	24	35	31
15	5	34	31	40	33
	10	34	31	52	48
20	5	40	36	40	38
	10	52	36	57	58.5
25	5	43	42	40	35

Type	Shape	Features
Standard Nut		Most common type.
Compact Nut		Smaller by up to 40% than conventional Nuts
Block Nut		No need for a Nut Bracket for mounting the table directly.

•Up to 28% of price down is achieved. Enjoy smart shopping!

All prices shown in the table are calculated with the shaft length specified in 1mm increments, and Standard Shaft Ends Machining Alterations.

Type	Nut Types	Precision Grade	Type	Price Reduction Rate	Price Reduction Examples		
Rolled Ball screw	Compact Ball Nut	C10	BSSC	Max. reduction rate for previous types $\Delta 20\%$	BSSC2010-350	-	FY 10 151,20 EUR
	Standard Ball Nut	C10	BSSZ	Max. $\Delta 6\%$	BSSZ2010-350	FY 09 189,00 EUR	\Rightarrow FY 10 178,30 EUR
		C10	BSSR	Max. $\Delta 12\%$	BSSR2020-600	FY 09 299,10 EUR	\Rightarrow FY 10 264,70 EUR
	Block Ball Nut	C10	BSST	Max. $\Delta 28\%$	BSST2020-300	FY 09 442,00 EUR	\Rightarrow FY 10 319,60 EUR
				Max. $\Delta 22\%$	BSBR2005-300	FY 09 310,50 EUR	\Rightarrow FY 10 240,70 EUR

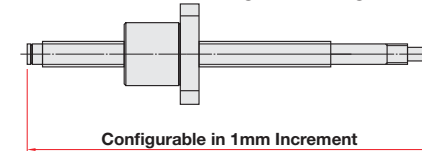
- Machined shaft ends screws require 8 day shipping. Express service is also available for the quickest delivery (Except for some products).

		1 day	2 days	3 days	4 days
Other companies	Part number selection Shaft Ends Shapes / Confirm dimensions	Quotation Requests Distributor Inquiry	Manufacturer Check lead-time	Distributor Quotes Generated	Will make it on time? Check for delivery dates and Coordinate
MISUMI	Part number selection Shaft Ends Shapes / Specify dimensions	Order	8 day shipping!	Delivery	Made it! Delivered while other companies are fumbling their quotes.

- The Screw Shaft Length is configurable in 1mm increments.
- With shaft ends machining (Partial dimension change is available.)
- Alterations for shaft ends (Flats machined, Keyways, etc.)

- Including any machining, 8 Day Shipping is available for all products.

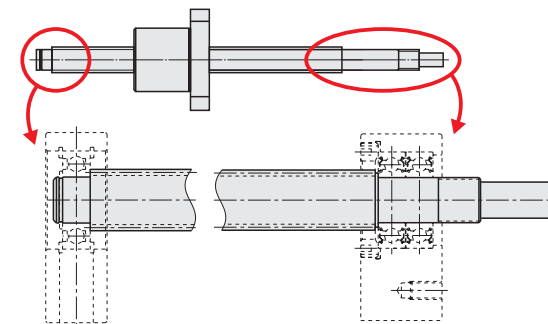
- The Screw Shaft Length is configurable in 1mm increments.



- Alterations for shaft ends are available.

- Machined Shaft Ends

Both support and fixed sides are machined and delivered so that the screw-end dimensions are fit to the suitable Support Units.



<Alterations on Support Side Shaft End>		<Alterations on Fixed Side Shaft End>	
Alterations	Code	Alterations	Code
No Machining on Support Side Shaft End	NC	Wrench Flats on Fixed Side	SZC
Ball Nut Orientation Reversed (Support Side) (Fixed Side)	RLC	Incomplete Hardening Area Keyway on Fixed Side Shaft End Detailed Keyway Dimensions P651	KC
Changed		Keyway on Fixed Side Shaft End	KLC
No Retaining Ring Groove on Support Side Shaft End	RNC	Flat Machined on Fixed Side Shaft End	SC
Change Support Side Shaft End Machining	GC	2 Flats on Fixed Side Shaft End	SWC SGC SWC SGC
Change Support Side Shaft End Length	FC		

*For machining details, refer to each product page.

- Various rolled and precision products are available for various purposes.

-Rolled Ball Screws Lineup-

Type	Example	Shaft Diameter	Lead	Axial Clearance (mm)	Shaft Length (mm)			
					MIN	MAX		
Standard Nut Accuracy Grade C7	BSST	8	2	0.03 or Less	100	380		
		10	4		150	585		
		12	4		150	795		
		15	5		150	1200		
		10	10		200	1200		
		20	5		200	1200		
		20	10	0.05 or Less	250	2000		
		20	20	0.03 or Less	250	2000		
		25	5	0.07 or Less	200	2000		
		25	10	0.05 or Less	300	2000		
		8	2		100	400		
		10	4		100	380		
10	2	150	585					
10	4	150	600					
10	10	150	585					
Standard Nut Accuracy Grade C10	BSSZ BSSR	12	4	0.10 or Less	150	800		
		14	5		150	800		
		15	5		150	1200		
		15	10		200	1200		
		20	5		200	1200		
		20	10		200	1200		
		20	10	0.15 or Less	250	2000		
		20	20	0.10 or Less	250	2000		
		25	5	200	2000			
		25	10	0.20 or Less	300	2000		
		25	25	0.12 or Less	300	2000		
		Compact Nut Accuracy Grade C10	BSSC	8	2	0.05 or Less	100	400
10	4			150	600			
12	4			150	800			
15	5			150	1200			
15	10			200	1200			
20	5			200	2000			
20	10			0.10 or Less	250	2000		
25	5			200	2000			
25	10			0.15 or Less	250	2000		
25	5			0.10 or Less	200	2000		
Block Nut Accuracy Grade C10	BSBR			15	5	0.10 or Less	150	1200
				20			200	1200
		25	200	1500				
		15	150	1200				
		20	10	0.15 or Less	200	1200		
		25			200	1500		
		20			200	1200		
		25			200	1500		

-Precision Ball Screws Lineup-

Type	Example	Shaft Diameter	Lead	Axial Clearance (mm)	Shaft Length (mm)	
					MIN	MAX
Standard Nut Accuracy Grade C3	BSX	6	1	0 (Preloaded)	80	205
		8	1		80	255
		10	2		100	240
		10	2		100	310
		12	2		150	390
		15	5		150	440
		15	5		150	590
Standard Nut Accuracy Grade C5	BSS BSL	8	2	0.005 or Less	100	210
		10	2		100	315
		10	4		150	380
		10	10		150	450
		12	2		150	445
		12	4		150	400
		15	5	150	450	
				200	600	
				150	1095	
				200	1095 (895)	
				230	1095	
				300	1095	
Standard Nut Accuracy Grade C7	BSSE	8	2	0.005 or Less	200	1000
		10	2		250	1500
		10	4		250	1500
		10	10		250	1500
		12	2		300	1495
		12	4		300	995
		15	5	300	1500	
				300	1500	
				150	1095	
				200	1095	
				230	1095	
				200	1000	
20	10	250	1500			
		200	1000			
		250	1500			
		200	1000			
		250	1500			
		200	1000			
		25	10	250	1500	
				250	1500	
				300	1500	
				300	1500	
				300	1500	
				300	1500	

The value in () is for BSL.

Rolled Ball Screws · Precision Ball Screws

-Features-

Available Greases

Grease type can be changed from the standard type to the following types.
Selecting L or G type allows great reduction of the grease particle dispersion caused by operation.

Part Number	Product Name	Principal Features
● L Type	ET-100 (Made by Kyodo Yushi)	Excels in heat resistance, oxidation stability, adhesion and adhesive power. In addition, splash or leakage is little.
● G Type	LG2 (Made by NSK Ltd.)	Special grease for linear guides, ball screws and etc. for clean-room use.

Item	Condition	Unit	Measurement Method	L Type	G Type	
Grease Performance	Thickener	-	-	Aromatic Diurea	Lithium Type	
	Base Oil	-	-	Ether Synthetic Oil	Mineral Oil + Synthetic Hydrocarbon Oil	
	Base Oil Viscosity	40°C	mm ² /s	JIS K2220 5.19	103	30
		100°C			12.8	-
	Worked Penetration	-	-	JIS K2220 5.3	280	207
	Dropping Point	-	°C	JIS K2220 5.4	<260	200
	Evaporation Amount	99°C x 22h	wt%	-	0.15%	1.40%
	Oil Separation Rate	100°C x 24h	wt%	JIS K2220 5.14	1.2%	0.8%
	Operating Temp.	In Air	°C	-	-40~200	-10~80

Available Ball Screws and Grease Types

Type	Precision Grade	Type	€ Unit Price (Add to the price of Standard Type)
Precision Ball Screws	C 5	BSS - BSL	L Type 100,00
	C 7	BSSE	L Type 120,00
	C 7	BSST	
Rolled Ball Screws	C10	BSSR BSSZ	G Type 140,00
		BSSRK BSSZK	G Type 170,00
		BSSR BSRK	

Not applicable to Precision Ball Screws Precision Grade C3

Price Add prices from the table above to corresponding standard prices.
<Price Calculation Example> BSS2010L-700 (Precision Ball Screws, Shaft Diameter 20, Lead 10)
(Regular Type € Unit Price) + € Unit Price = (Total)
551,70 EUR + 100,00 EUR = 651,70 EUR (Price per pc.)

Order Example Part Number - L
 ● BSS2010L - 700 (L Type Greased)
 ● BSS2010G - 700 (G Type Greased)

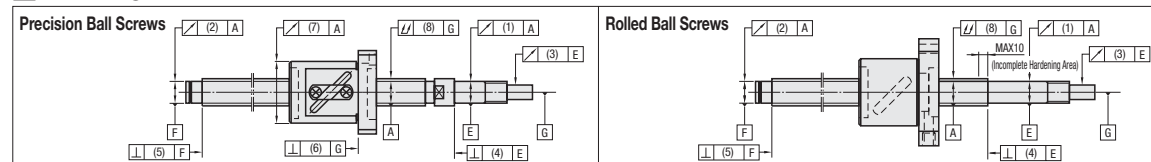
Please add L, G after the part number of Standard Type when placing an order.

Days to Ship 10 Days

Alterations Part Number - L (FC, MC...etc.)
 BSS2010L - 700 - RNC

Confirm the details of alterations from each page.

Mounting Interface Accuracies



Part Number	(1)(2) Runout Tolerance (Max.)	(3) Runout Tolerance (Max.)	(4)(5) Perpendicularity Tolerance (Max.)	(6) Perpendicularity Tolerance (Max.)	(7) Runout Tolerance (Max.)
BSX	6	0.008	0.008	0.004	0.008
	8				0.010
	10				0.012
	12				0.015
	15				0.019
BSS BSL	8	0.011	0.011	0.005	0.010
	10				0.012
	12				0.015
	15				0.019
	20				0.020
BSSE BSST	8	0.014	0.014	0.007	0.014
	10				0.018
	12				0.020
	15				0.020
	20				0.030
BSSR BSSZ BSSC FBS	8	0.040	0.040	0.010	-
	10				-
	12				-
	14				-
	15				-
BSBR	8	0.060	0.060	-	-
	10				-
	12				-
	15				-
	20				-

- (1), (2) Radial runout of the thread surface against the shaft support axis. These parameters are affected by "(8) Shaft's total radial runouts" and may be subject to compensation.
- (3) Radial runout of drive component interface surface in relation to screw shaft support axis.
- (4), (5) Perpendicularity of shaft's bearing shoulders in relation to screw shaft support axis.
- (6) Perpendicularity of ball nut mounting flange surface (datum) in relation to screw shaft axis.
- (7) Radial runout of ball nut body outer circumference in relation to screw shaft axis.
- (8) Shaft's total radial runouts.

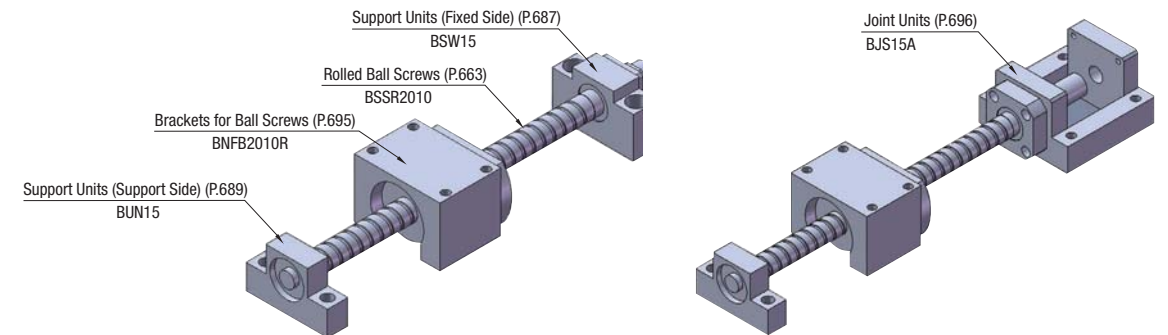
Keyway dimension details located at P on fixed side shaft end

Shaft Diameter	Reference Dim.	Tolerance (N9)	Reference Dim.	Tolerance
6-7	2	-0.004	1.2	
8-10	3	-0.029	1.8	+0.1
11-12	4	0	2.5	0
13-17	5	0	3.0	
18-20	6	-0.03	3.5	

Part Number	Screw Shaft Diameter	(8) Runout Tolerance (Max.)										
		Screw Shaft Length										
Type		-125	126-200	201-315	316-400	401-500	501-630	631-800	801-1000	1001-1250	1251-1600	1601-2000
BSX	6	0.025	0.035	0.050	-	-	-	-	-	-	-	-
	8			0.040	0.050	0.065	-	-	-	-	-	-
	10			0.030	0.040	0.050	0.055	-	-	-	-	-
	12			0.065	-	-	-	-	-	-	-	-
	15			0.055	0.065	0.080	0.090	-	-	-	-	-
BSS BSL	8	0.035	0.040	0.045	0.055	0.060	0.075	0.090	0.120	0.150	0.190	-
	10			0.040	0.045	0.050	0.060	0.070	0.085	0.100	0.130	-
	12			0.060	0.070	0.080	0.095	0.110	0.140	0.170	0.210	-
	15			0.060	0.070	0.080	0.090	0.100	0.130	0.150	0.190	-
	20			0.100	0.100	0.100	0.110	0.140	0.170	0.210	0.270	-
BSSE BSST	8	0.060	0.075	0.100	-	-	-	-	-	-	-	-
	10			0.060	0.070	0.080	0.090	0.100	0.130	0.150	0.190	-
	12			0.070	0.080	0.095	0.110	0.140	0.170	0.210	0.270	-
	15			0.060	0.070	0.080	0.090	0.100	0.130	0.150	0.190	-
	20			0.100	0.100	0.100	0.110	0.140	0.170	0.210	0.270	-
BSSR BSSZ BSSC FBS BSBR	8	0.100	0.140	0.210	(0.270)	-	-	-	-	-	-	-
	10			0.120	0.160	0.210	0.270	0.350	-	-	-	-
	12			0.110	0.130	0.160	0.200	0.250	-	-	-	-
	14			0.130	0.160	0.200	0.250	0.320	0.420	0.550	0.730	-
	15			0.110	0.130	0.160	0.200	0.250	0.320	0.380	0.500	0.690
BSBR	8	0.110	0.130	0.160	0.190	0.230	0.300	0.380	0.500	0.690	-	-
	10			0.110	0.130	0.160	0.190	0.230	0.300	0.380	0.500	0.690
	12			0.110	0.130	0.160	0.190	0.230	0.300	0.380	0.500	0.690
	15			0.110	0.130	0.160	0.190	0.230	0.300	0.380	0.500	0.690
	20			0.110	0.130	0.160	0.190	0.230	0.300	0.380	0.500	0.690

Combination with Peripherals

Support Units / Nut Brackets / Joint Units are designed for MISUMI Ball Screws.



- Support Units
 - Designed for the shaft ends sizes of MISUMI Ball Screws.
 - Widest variety of items and prices available in the industry.

Type	Standard Type			Compact Type			Economy Type			Radial Bearing Type		
	Type	Type	Features	Type	Type	Features	Type	Type	Features	Type	Type	Features
Fixed Side	Square Standard Type	BSW BSWN BSWR	Standard Type Angular Contact Bearing Class 5 (P.687)	Square Compact Type	BSQ BSQM	Angular Contact Bearing Class 0 (P.691) Most compact of Square Type	Square Economy Type	BSWE BSWEW BSWER	Angular Contact Bearing Class 0 (P.687) 20% more economical than Standard Type	Square Radial Bearing Type	BSWZ BSWM	Radial Bearing used (P.688) 30% more economical than Standard Type
	Square Standard Type with Dowel Holes	BSWG BSWGN BSWGR	Angular Contact Bearing Class 5 (P.687) Dowel holes added to Standard Type. (P.688)	Square Low Profile Type	BSV BSVM	Angular Contact Bearing Class 5 (P.691) Lowest height of all Square Types.						
	Square Standard Type with Damper	BSWD	Angular Contact Bearing Class 5 Urethane damper is glued to Standard Type (P.690)	Square, Narrow Mounting Hole Pitch	BSA BSAM	Angular Contact Bearing Class 5 (P.691) Most compact in width of Square Type						
	Round Standard Type	BRW BRWN BRWR	Standard Type Angular Contact Bearing Class 5 (P.693)				Round Economy Type	BRWE BRWEM BRWER	Angular Contact Bearing Class 0 (P.694) 20% more economical than Standard Type	Round Radial Bearing Type	BRWZ BRWZM	Radial Bearing used (P.694) 30% more economical than Standard Type

Type	Standard Type			Compact Type			Retaining Ring Type		
	Type	Type	Features	Type	Type	Features	Type	Type	Features
Support Side	Square Standard Type	BUN BUNM BUNR	Standard Type (P.689)	Square Compact Type	BUQ BUQM	Most compact of Square Type (P.692)	Square Standard Type with Retaining Ring	BTN BTNM	Retaining Ring Type (P.689) Prevents the Ball Screw Bearing from falling out.
	Square Standard Type with Dowel Holes			Square Low Profile Type	BUV BUVM	Lowest height of all Square Types. (P.692)			
	Square Standard Type with Damper	BUND	Urethane damper is glued to Standard Type. (P.690)	Square, Narrow Mounting Hole Pitch	BUA BUAM	Most compact in width of Square Type (P.692)			
	Round Standard Type	BUR BURM BURR	Standard Type (P.693)				Round Standard Type with Retaining Ring	BTR BTRM	Retaining Ring Type (P.693) Prevents the Ball Screw Bearing from falling out.

When the Rolled Ball Screw Shaft Diameter 15, Lead 10 is combined with Support Units Fixed Side (BRW12) Support Units Support Side (BUR12)
 → Fixed Side 63,30 EUR
 → Support Side 63,30 EUR

* For details of mounting method of a Ball Screw and a Support Unit, refer to P.686. * For details of combination of Ball Screws and Support Units, refer to the Ball Screws Product Page.

- Nut Brackets
 - Various sizes are available for the nut sizes of MISUMI Ball Screws.

When the Rolled Ball Screw Shaft Diameter 15, Lead 10 is combined with the Nut Bracket (BNFB1510R)
42,00 EUR

*For specification details, refer to P.695

- Joint Units
 - The Support Unit and motor locating feature are all-in-one, therefore, the precise shaft centering is possible.
 - Many flanges provided by motor manufacturers can be used.

When the Rolled Ball Screw Shaft Diameter 15, Lead 10 is combined with the Joint Unit (BJS12A)
158,00 EUR

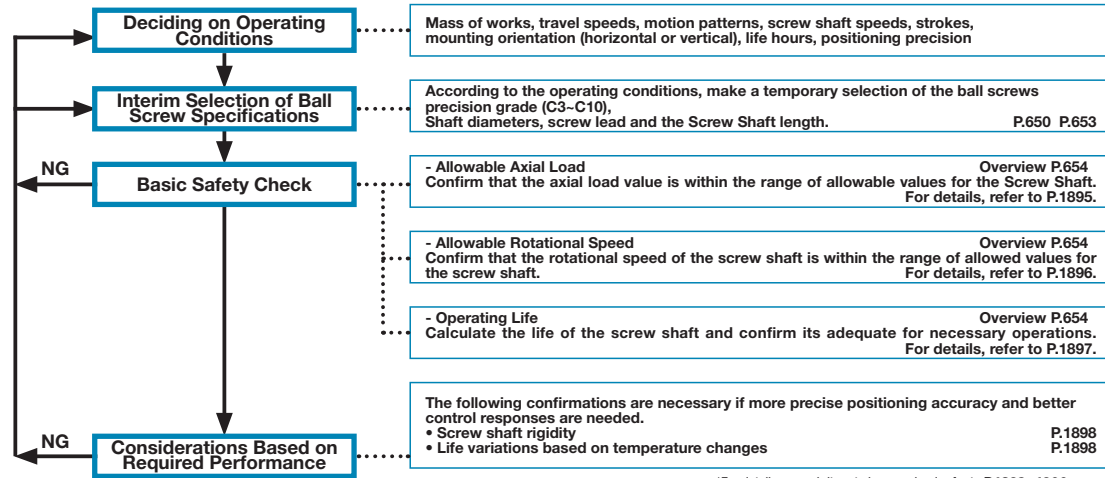
*For specification details, refer to P.696

Rolled Ball Screws · Precision Ball Screws

-Selection Process-

- Selection of Ball Screws

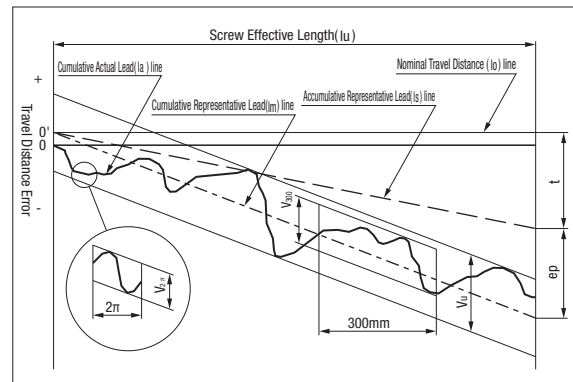
Refer to the following for the standard Ball Screws selection procedures.



*For details on each item to be examined, refer to P.1893-1900

- Lead Accuracy of Ball Screws (Details P.1893)

The lead accuracy of the Ball Screws is defined by the JIS Standard Characteristics (ep, Vu, V300 and V2π). In general, confirm the Actual Mean Travel Error for the Ball Screws is within the range of necessary positioning precision. Then select the precision grade for the Ball Screws to be used. Following are definitions and allowable values for each characteristic.



-Allowable Value-

Allowable value of Actual Mean Travel Error (ep) and Variation (Vu) for Positioning Screws (C series) Unit: μm

Effective Screw Length (mm)	Precision Grade	Precision Grade			
		C3		C5	
More than	or Less	Actual Mean Travel Lead Error	Variation	Actual Mean Travel Lead Error	Variation
315	315	12	8	23	18
400	400	13	10	25	20
500	500	15	10	27	20
630	630	16	12	30	23
800	800	18	13	35	25
1000	1000	21	15	40	27
1250	1250	24	16	46	30
1600	1600	29	18	54	35

Standard values for variations within 300mm of effective thread length (V300) and in one revolution (V2π) for Positioning Screws (JIS B 1192-1997, C accuracy grade series). Unit: μm

Precision Grade	C3		C5	
	Item	V300	V2π	V300
Standard Value	8	6	18	8

Standard values for variations within 300mm of effective thread length (V300) for Transfer Screws (JIS B 1192-1997, Ct accuracy grade series). Unit: μm

Precision Grade	Ct7		Ct10	
	Item	V300	V2π	V300
Standard Value	50	210		

Actual Mean Travel Error (ep) for Transfer Screws (JIS B 1192-1997, Ct accuracy grade series) is obtained by $ep=2 Lu/300 \cdot V300$.

Term	Symbol	Meaning
Actual Mean Travel Error	ep	Difference between Actual Mean Travel and Specified Travel.
Variation	Vu	Maximum difference of the actual travel contained between two lines drawn parallel to the actual mean travel. Defined by the following three parameters:
	V300	Vu: Maximum value for the effective thread length.
	V2π	V300: Variation for a 300mm span arbitrarily taken from the effective thread length. V2π: Variation for an arbitrary 1 revolution (2πrad).
Specified Travel	ls	While the Nominal Travel indicates the nominal travel distance, this is the amount of axial travel distance after compensating possible axis expansion and contraction caused by thermal rise and loads.
Specified Travel Target Value	t	Difference between Specified Travel and Nominal Travel over the effective thread length. This value is predetermined by compensating for possible expansion and contraction caused by thermal conditions and external loads. This is determined by experimental data or experiences.
Actual Travel	la	Actually measured travel distance.
Actual Mean Travel	lm	Straight line representing the trend of actual travel. Straight line obtained by least squares method or other simplified and optimal approximation method from the curve that indicates the actual travel distance.

• Allowable axial load of Ball Screws (Details P.1895)

The allowable axial load represents a maximum load, including a safety margin, that causes shaft buckling. The max. axial load to the Screw Shaft must be equal to or less than the allowable axial load value.

(1) Calculation of the Allowable Axial Load

Use the following 3 factors to find the value from the Allowable Axial Load Curve (Fig.2)
 - Screw Shaft Diameter (φ)
 - Method of Mount Support (See Fig. 3)
 - Distance between Load Acting Points (Refer to Fig. 3)
 * Use a formula to find more accurate Allowable Axial Load. (Refer to P.1895)

(2) Calculation of Maximum Axial Loads

Use the following formulas for calculating each axial load at acceleration, constant speed and deceleration (at horizontal installation). The largest load is regarded as the Maximum Axial Load.

- Constant speed → Axial Load (Pb)=μWg
- Acceleration → Axial Load (Pa)=Wα+μWg
- Deceleration → Axial Load (Pd)=Wα-μWg
- *When vertical mounting, omit "μ" from the calculation.

μ: Linear Guide Friction Constant (0.02 for the Linear Guides)
 W: Mass of Works
 g: Gravitational Acceleration 9.8m/s² (*) Acceleration (α)=(Vmax/t)X10⁻³
 α: Acceleration (*) Vmax:Fast-feed Velocity
 t: Acceleration / Deceleration Time

(3) Safety Check

Check the Allowable Axial Load Curve (Fig. 2) to confirm the maximum axial load value is equal to or less than the allowable axial load values.

- Allowable Rotational Speed (Details P.1896)

The rotational speed of Ball Screws is figured out by the necessary travel speed and the Ball Screw lead. The frequency must be equal to or less than the allowable rotational speed. The allowable rotational speed is examined by using the critical speed on the Rotary Shafts and the DmN value, which is the Rotary Speed limit of the ball circulating in the nuts.

(1) Allowable Rotational Speed

(1) Calculation of Allowable Rotational Speed
 Use the following 3 factors to find the value from the Allowable Rotational Speed Curve (Fig.4)
 - Screw Shaft Diameter (φ)
 - Method of Mount Support (See Fig. 3)
 - Distance between Load Acting Points (Refer to Fig. 3)
 * Use a formula to find more accurate Allowable Rotational Speed. (Refer to P.1896)

(2) Safety Check

Use the Allowable Rotational Speed (Fig. 4) to confirm the Screw shaft rotational speed is equal to or less than the allowable rotational speed values.

(2) DmN value

(1) Calculation of DmN

DmN= (Dm+A)XNmax
 Dm: Screw Shaft Diameter
 A: Factor determined by the Ball Dia. (Refer to Fig. 5)
 Nmax: Screw Shaft Max. revolutions

Ball Dia.	Value A
1.5875	0.3
2.3812	0.6
3.175	0.8
4.7625	1.0
6.35	1.8

(2) Confirm the DmN value satisfies the following conditions.
 Precision Ball Screws → DmN≤70000
 Rolled Ball Screws → DmN≤50000

- Operating Life Calculation (Details P.1897)

Use the following formula for calculating the operating hours of the Ball Screws.

$$\text{Life Hours} = \frac{10^6}{60Nm} \left(\frac{C}{Pm \cdot fw} \right)^3$$

C : Basic Dynamic Load Rating (N)
 Pm: Allowable Axial Average Load (N)
 Nm: Average Revolutions (min⁻¹)
 fw: Operation Factor
 Steady operation without impact fw=1.0-1.2
 Normal operation fw=1.2-1.5
 Operation with impact fw=1.5-2.0

C :Basic Dynamic Load Rating Definition

When a certain group of the same Ball Screws are operated with a certain Axial Load and 90% of the Screws achieve 1 million revolutions (10⁶) without flaking in its operating life, the Axial Load is defined as the Basic Dynamic Load Rating.

-Calculation of Allowable Axial Average Load and Average Revolutions-

It is required to calculate according to the operation patterns. Refer to the table below. Though it seems very difficult to calculate each condition such as the operation pattern and load, however, the Ball Screws' operating life is always inversely proportional by factor of 3 to the load. Therefore, the more exact calculation, the wider choice of Ball Screws will become available.

Operating Pattern	Allowable Axial Load	Revolutions	Hrs. Rate
A	P1/N	N1min ⁻¹	t1%
B	P2/N	N2min ⁻¹	t2%
C	P3/N	N3min ⁻¹	t3%

Formula:
 $Pm = \left(\frac{P1^3N1t1 + P2^3N2t2 + P3^3N3t3}{N1t1 + N2t2 + N3t3} \right)^{\frac{1}{3}}$ (N)
 $Nm = \frac{N1t1 + N2t2 + N3t3}{t1 + t2 + t3}$ (min⁻¹)

Fig.-2 Allowable Axial Load Chart

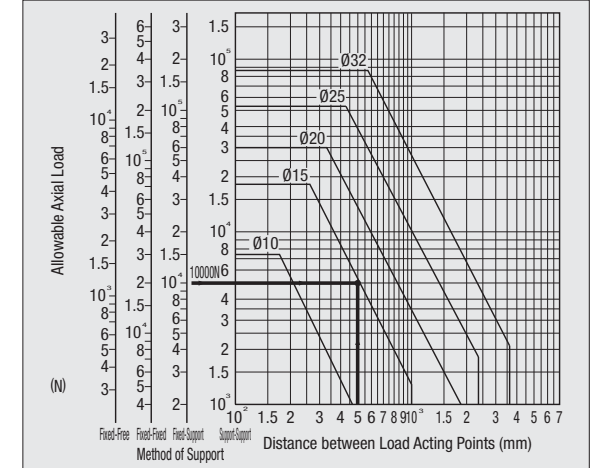
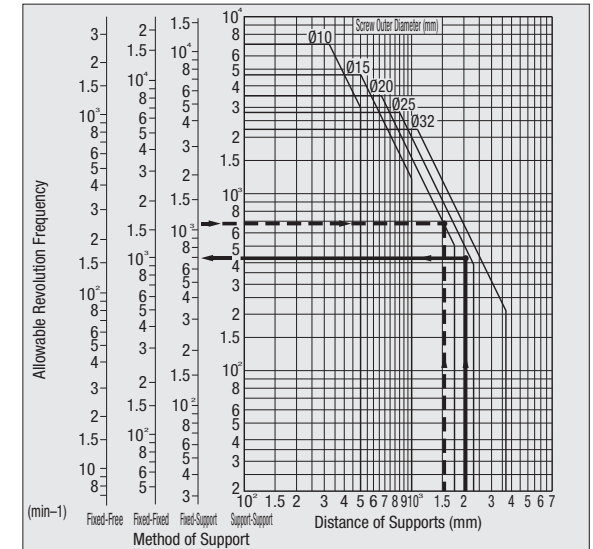


Fig.-3 Mount Support Orientation

Installation Methods	Characteristics
	<ul style="list-style-type: none"> Typically selected installation method Intermediate ~ high speed applications Medium ~ High accuracy For the Support Unit, Standard Type BRW and BUR were selected.
	<ul style="list-style-type: none"> Intermediate speed applications High accuracy For the Support Unit, Standard Type BRW was selected.
	<ul style="list-style-type: none"> Low speed applications For short shaft length Medium accuracy For the Support Unit, Economy Type BRWE

Fig.-4 Allowable Rotational Speed Chart





Rolled Ball Screws - Shaft Diameter 8, Lead 2 · 4- -Accuracy Grade C7 · C10-

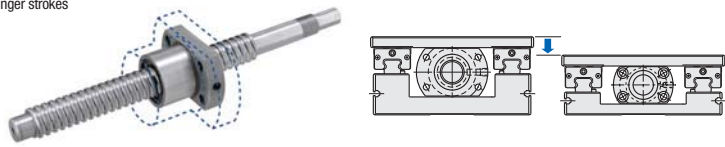
Price Reduction

Up to 26%

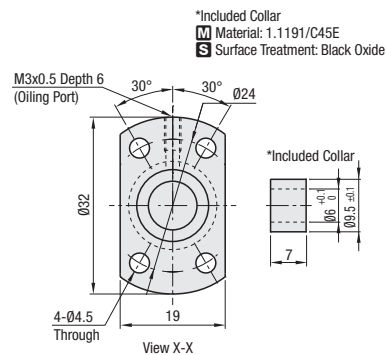
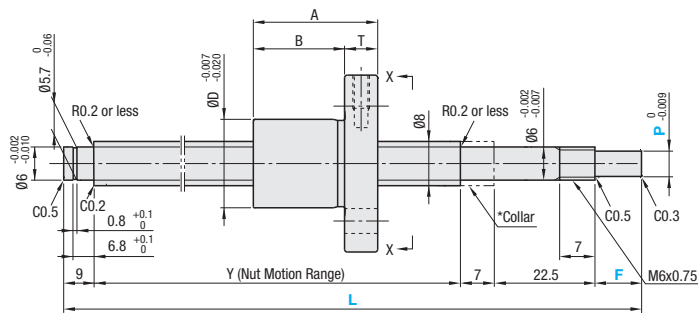
CAD Data

Ball Nut Type	Type		Precision Class	Shaft Diameter	Lead	Screw Shaft			Ball Nut			
	Standard	F · P Configurable				Material	Hardness	Surface Treatment	Material	Hardness	Surface Treatment	
Standard Nut	BSST	-	C7	8	2	1.1203/C55E	56~62HRC	Induction Hardening Phosphate Conversion Coating	1.7264/20CrNi65	58~62HRC	Phosphate Conversion Coating	
Standard Nut	BSSR	BSSRK	C10	8	2 · 4	1.1203/C55E	56~62HRC	Induction Hardening Phosphate Conversion Coating	1.7264/20CrNi65	Carburized	58~62HRC	Phosphate Conversion Coating
Standard Nut	BSSZ	BSSZK										
Compact Nut	BSSC	BSSCK										

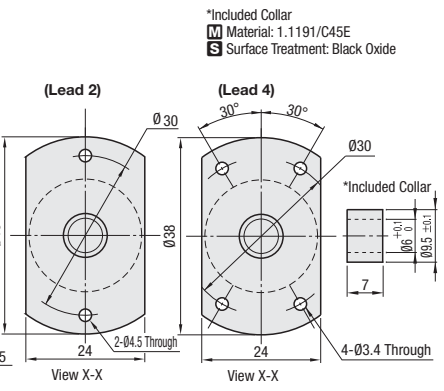
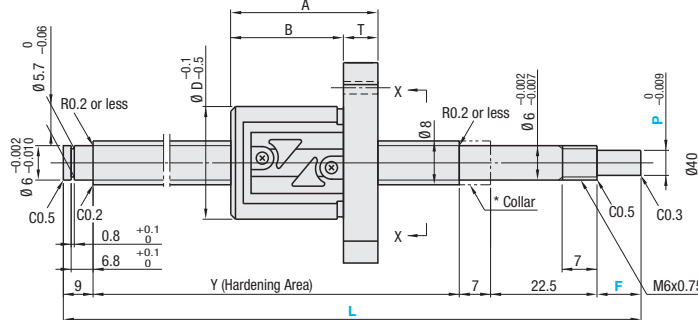
-Compact Nut Features-
- Compact outer diameters
- Lower profile Sliders can be used.
- Longer strokes



-Compact Nuts-
BSSC (K) 0802



-Standard Nuts-
BSST · BSSR (K) · BSSZ (K) 0802, 0804



Ball Nut Type	Precision Class	Part Number		1mm Increment			Y	D	A	B	T	Ball Dia.	Ball Center Dia.	Screw Root Dia.	# of Circuits	Basic Load Rating C (Dynamic) kN	Co (Static) kN	Allowable Axial Play	Twisting Direction			
		Type	Screw Shaft Diameter	L	F	P																
Standard Ball Nut	C7	BSST	08	02	100~380	7.5	4.5	L-46	20	28	22	6	1.5875	8.3	(6.6)	3.5 turns, 1 row	1.8	3.2	0.03 or Less	Right		
					BSSR	BSSZ	100~400	8~13	4 / 4.5	L-(38.5+F)												
	C10	BSSR	08	02	100~380	7.5	4.5	L-46	16	22.5	16.5	6	1.2	8.15	(7)	4 turns, 1 row	1.17	2.1			0.05 or Less	Right
					BSSZ	BSSCK	100~400	8~13	4 / 4.5	L-(38.5+F)												
Compact Ball Nut	C10	BSSC	08	04	100~380	7.5	4.5	L-46	23	28	23	5	2	8.4	(6.3)	2.5 turns, 1 row	1.9	3.1	0.05 or Less	Right		
					BSSCK	100~400	8~13	4 / 4.5	L-(38.5+F)													

*F and P are configurable for BSSRK, BSSZK and BSSCK only. *F ≤ Px3

kgf=Nx0.101972



Ball Nut Type	Precision Class	Part Number	€ Unit Price Qty. 1~4	
			L100~200	L201~400
Standard Nut	C7	BSST0802		
		BSSR0802		
		BSSZ0802		
Compact Nut	C10	BSSC0802		
		BSSR0804		

For orders larger than indicated quantity, please request a quotation.
For the price of BS...K (F, P Configurable Type), add 19.50 EUR to the standard type price.
ex) BSSZK0802-200-F8-P4
132.30 EUR+19.50 EUR=151.80 EUR



Part Number	L	F	P
BSSC0802	270		
BSSZK0802	270	F10	P4
BSSZ0802L	400		
BSSZ0802G	400		

(L Type Greased)
(G Type Greased)



Days to Ship	Express A	8,00 EUR/ piece	P.88
8 Days	Express A	8,00 EUR/ piece	P.88
10 Days			

For Days to Ship of this product, Saturday and Sunday are not included.

Note

- Mounting surface of BSST ball nut flange is not surface-treated.
- Filled with lithium soap based grease (Alvania Grease S2 made by Showa Shell Sekiyu K.K.).
- Notes: Do not let the nuts overrun, as well as remove the nuts from the screw shafts. It may cause the balls to fall out or damage the ball recirculation parts.
- Various grease options are available. For lead time, prices and Specifications, refer to P651. BSSC is not applicable.
- For accuracy of Ball Screws, refer to P651-653
- For details support units, refer to P685~P694



Part Number	L	F	P	(FC · SC...etc.)
BSSR0802	270			SC5

Alterations	Code	Spec.	Price Adder
No Machining on Support Side Shaft End	NC	No machining added on the support side shaft end. [Ordering Code] NC	BSST · BSSR BSSZ -20,00 BSSC -7,00
Ball Nut Orientation Reversed (Support Side)	RLC	Changes the nut direction. [Ordering Code] RLC	Free of charge
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.	Free of charge
Change Support Side Shaft End Length	FC	Changes the length of the support side shaft end. FC=1mm Increment [Ordering Code] FC20 10 ≤ FC ≤ 20 Y dimension is shortened.	BSST · BSSR BSSZ 7,00 BSSC 3,00

Alterations	Code	Spec.	Price Adder
Wrench Flats on Fixed Side	SZC	Adds wrench flats on the fixed side shaft end. [Ordering Code] SZC Ball bearings will fall out if the ball nut crosses the wrench flats.	BSST · BSSR BSSZ 7,00 BSSC 3,00
Flat Machined on Fixed Side Shaft End	SC	Adds a flat on the fixed side shaft end. SC=1mm Increment [Ordering Code] SC5 5 ≤ SC ≤ 12 SC ≤ F-1	BSST · BSSR BSSZ 6,00 BSSC 3,00
2 Flats on Fixed Side Shaft End	SWC SGC	Adds two flats on the fixed side shaft end. JIS SWC: 90° Position SGC: 120° Position 1mm Increment [Ordering Code] JIS SWC 5 ≤ JIS SWC, SGC ≤ 12 SWC, SGC ≤ F-1	BSST · BSSR BSSZ 7,00 each BSSC 3,00 each

Combination with Support Units

Ball Screw Part Number	Recommended Support Units							
	Type	Screw Shaft Outer Diameter	Lead	Part Number	Shape	Fixed Side	Support Side	Page
BSSC	08	02	04	BSV	Square Type	○		P691
				BUV	Low Profile		○	P692
				BRW	Round	○		P693
				BUR	Round		○	P693
BSST BSSR BSSZ	08	02	04	BSW	Square Type	○		P687
				BUN	Square Type		○	P689

Other than the above part numbers, variety of shapes and surface treatments for Support Units are available. (P685~P694)
Recommended products: Easy locating is possible with the Support Units with Dowel Holes as the dowel holes are provided on the units.

Combination with Nut Brackets

Ball Screw Part Number	Recommended Nut Brackets					
	Type	Screw Shaft Outer Diameter	Lead	Part Number	Page	
BSSC	08	02	04	BNFB	802C	P695
				BNFR	802R	P695
BSST BSSR BSSZ	08	02	04	BNFA	804R	P695

Variety of materials and surface treatments for Nut Brackets are available. (P695)



Rolled Ball Screws - Shaft Diameter 10, Lead 2 · 4 · 10- -Accuracy Grade C7 · C10-

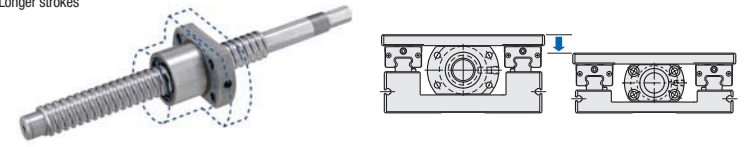
Price Reduction
Up to 26%

CAD Data

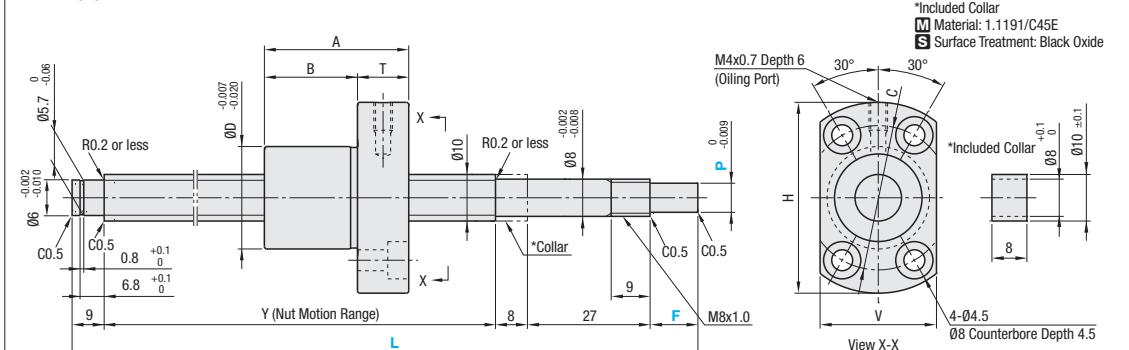


Ball Nut Type	Type		Precision Class	Shaft Diameter	Lead	Screw Shaft				Ball Nut		
	Standard	F · P Configurable				Material	Hardness	Surface Treatment	Material	Hardness	Surface Treatment	
Standard Nut	BSST	-	C7	10	4	1.1203/C55E	Induction Hardening	Phosphate Conversion Coating	1.7264/20CrMo5	58-62HRC	Phosphate Conversion Coating	
Standard Nut	BSSR	BSSRK	C10	10	2 · 4 · 10	1.1203/C55E	Induction Hardening	Phosphate Conversion Coating	1.7264/20CrMo5	58-62HRC	Phosphate Conversion Coating	
Standard Nut	BSSZ	BSSZK	C10	10	4	1.1203/C55E	Induction Hardening	Phosphate Conversion Coating	1.7264/20CrMo5	58-62HRC	Phosphate Conversion Coating	
Compact Nut	BSSC	BSSCK	C10	10	4	1.1203/C55E	Induction Hardening	Phosphate Conversion Coating	1.7264/20CrMo5	58-62HRC	Phosphate Conversion Coating	

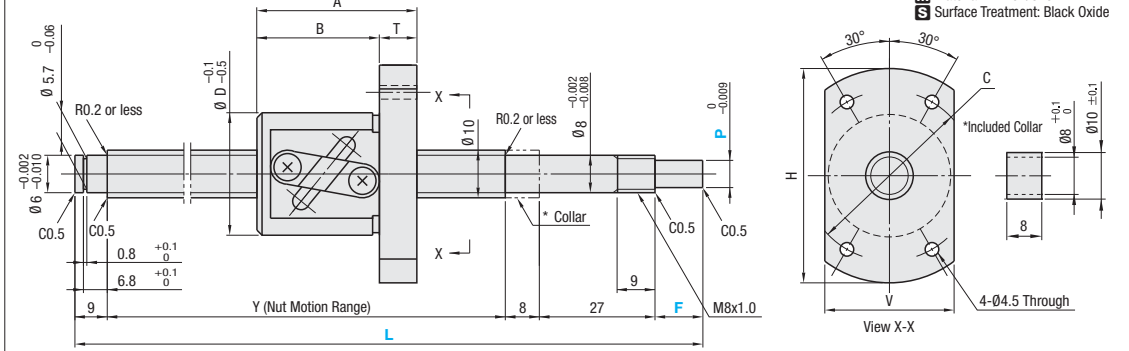
-Compact Nut Features-
- Compact outer diameters
- Lower profile Sliders can be used.
- Longer strokes



-Compact Nuts-
BSSC (K) 1004



-Standard Nuts-
BSST · BSSR (K) · BSSZ (K) 1002, 1004, 1010



Ball Nut Type	Precision Class	Part Number	1mm Increment		Y	D	A	B	T	H	C	V	Ball Dia.	Ball Center Dia.	Screw Root Dia.	# of Circuits	Basic Load Rating C (Dynamic) Co (Static)	Allowable Axial Play	Twisting Direction				
			L	*F																*P			
Standard Ball Nut	C10	BSSR	10	02	150-585	23	28	22	6	43	33	27	1.5875	10.3	-8.4	2.5 turns 1 row	1.7	3.0	0.05 or Less	Right			
		BSSRK																			10-18	5 · 6	L-54
	BSST	10																			6	L-54	L-(44+F)
	BSSZ	10-18																			5 · 6	L-(44+F)	L-(44+F)
Compact Ball Nut	C10	BSSR	10	04	150-600	22	31	20	11	41	31	25	2	10.25	-8.4	3 turns 1 row	1.87	3.0	0.05 or Less	Right			
		BSSRK																			10-18	5 · 6	L-54
	BSSZK	10-18																			5 · 6	L-(44+F)	L-(44+F)
	BSSC	10																			6	L-54	L-(44+F)
Standard Ball Nut	C10	BSSR	10	10	150-585	28	34	26	8	47	36	30	2.3812	10.6	-7.8	1.5 turns 1 row	1.85	3.2	0.05 or Less	Right			
		BSSRK																			10-18	5 · 6	L-54

*F and P are configurable for BSSRK · BSSZK and BSSCK only. (F) F=Px3

kgf=Nx0.101972



Ball Nut Type	Precision Class	Part Number	€ Unit Price Qty. 1-4		
			L150-200	L201-400	L401-600
Standard Nut	C10	BSSR1002			
	C7	BSST1004			
Compact Nut	C10	BSSR1004			
		BSSZ1004			
Standard Nut		BSSR1010			

For orders larger than indicated quantity, please request a quotation.
For the price of BS...K (F · P Configurable Type), add 19,50 EUR to the standard type price.
ex) BSSZK1004-300-F12-P6
144,50 EUR+19,50 EUR=164,00 EUR



Part Number	L	F	P
BSSC1004	270		
BSSZK1004	300	F15	P6
BSSZ1004L	550		
BSSZ1004G	550		

(L Type Greased)
(G Type Greased)



Days to Ship	Express A	8,00 EUR/ piece
8 Days		
10 Days		

Express A 8,00 EUR/ piece P.88
A Express Charge of 21,60 EUR for 3 or more identical pieces.

Note

- Mounting surface of BSST ball nut flange is not surface-treated.
- Filled with lithium soap based grease (Alvania Grease S2 made by Showa Shell Sekiyu K.K).
- Notes: Do not let the nuts overrun as well as remove the nuts from the screw shafts. Ball bearings will fall out, or ball recirculation parts may be damaged.
- Various grease options are available. For lead time, prices and Specifications, refer to P.651 BSSC is not applicable.
- For accuracy of Ball Screws, refer to P.651-653
- For details support units, refer to P.685-P.694



Alterations	Part Number	L	F	P	(FC · KC...etc.)
BSSR1004	270				SC7

Alterations	Code	Spec.	Price Adder
No Machining on Support Side Shaft End	NC	No machining added on the support side shaft end. [Ordering Code] NC	BSSR · BSSR BSSZ -20,00 BSSC -7,00
Ball Nut Orientation Reversed (Support Side) (Fixed Side)	RLC	Changes the nut direction. [Ordering Code] RLC	Free of charge
No Retaining Ring Groove on Support Side Shaft End	RNC	Retaining ring groove is not machined on the support side shaft end. [Ordering Code] RNC Combination with FC is not available.	Free of charge
Change Support Side Shaft End Length	FC	Changes the length of the support side shaft end. FC=1mm Increment [Ordering Code] FC20 11≤FC≤20 Y dimension is shortened.	BSSR · BSSR BSSZ 7,00 BSSC 3,00

Alterations	Code	Spec.	Price Adder
Wrench Flats on Fixed Side shaft end.	SZC	Adds wrench flats on the fixed side shaft end. [Ordering Code] SZC Ball bearings will fall out if the ball nut crosses the wrench flats.	BSSR · BSSR BSSZ 7,00 BSSC 3,00
Keyway on Fixed Side Shaft End	KC	Adds a keyway on the fixed side shaft end. P=5 is not applicable. KC=1mm Increment [Ordering Code] KC5 2≤KC≤Px3 KC≤F-1	BSSR · BSSR BSSZ 14,00 BSSC 6,00
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.) P=5 is not applicable. K.S=1mm Increment [Ordering Code] KLC-KS-S2 3≤K+S≤Px3 K+S≤F-1	BSSR · BSSR BSSZ 14,00 BSSC 6,00
Flat Machined on Fixed Side Shaft End	SC	Adds a flat on the fixed side shaft end. SC=1mm Increment [Ordering Code] SC7 5≤SC≤Px3 SC≤F-1	BSSR · BSSR BSSZ 6,00 BSSC 3,00
2 Flats on Fixed Side Shaft End	SWC SGC	Adds two flats on the fixed side shaft end. JIS SWC: 90° Position SGC: 120° Position 1mm Increment [Ordering Code] JIS SWC 5≤JIS SWC, SGC≤Px3 SWC, SGC≤F-1	BSSR · BSSR BSSZ 7,00 each BSSC 3,00 each

Combination with Support Units

Ball Screw Part Number	Recommended Support Units				
	Type	Screw Shaft Outer Diameter	Lead	Part Number	Page
BSSC	10	02	10	BSV 8S	P.691
				BUV 8	P.692
				BRW 8S	P.693
				BUR 6	P.693
	10	04	10	BSW 8S	P.687
				BUN 8	P.689

Combination with Nut Brackets

Ball Screw Part Number	Recommended Nut Brackets			
	Type	Screw Shaft Outer Diameter	Lead	Part Number
BSSC	10	04	10	1004C
				1002R
				1004R
				1010R

Variety of materials and surface treatments for Nut Brackets are available. (P.695)

- Other than the above part numbers, variety of shapes and surface treatments for Support Units are available. (P.685-P.694)
- Recommended products: Easy locating is possible with the Support Units with Dowel Holes as the dowel holes are provided on the units.



Rolled Ball Screws - Shaft Diameter 12 · 14, Lead 4 · 5 · 10- -Accuracy Grade C7 · C10-

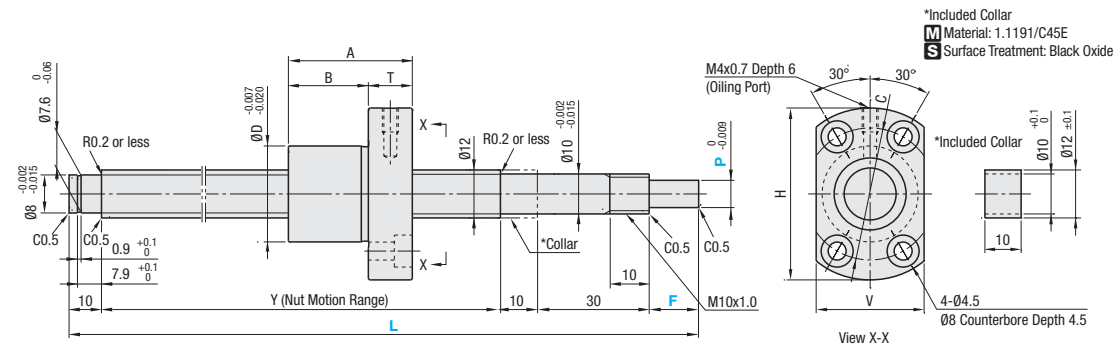
Price Reduction
Up to 26%

CAD Data

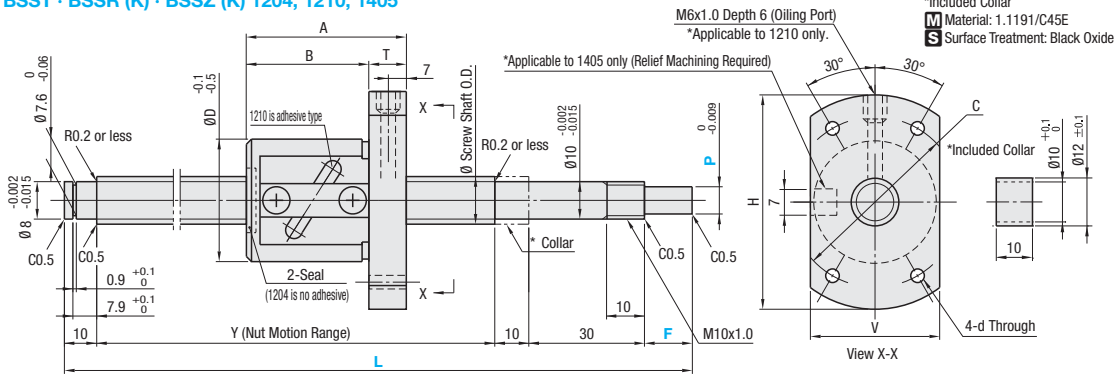
Ball Nut Type	Type	F · P Configurable	Precision Class	Shaft Diameter	Lead	Screw Shaft			Ball Nut		
						Material	Hardness	Surface Treatment	Material	Hardness	Surface Treatment
Standard Nut	BSST	-	C7	12	4	-	-	-	1.7264/20CrMo5	-	Phosphate Conversion Coating
Standard Nut	BSSR	BSSRK	C10	12 · 14	4 · 5 · 10	1.1203/C55E	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/20CrMo5	Carburized 58-62HRC	Low Temperature Black Chrome Plating
Standard Nut	BSSZ	BSSZK									
Compact Nut	BSSC	BSSCK	C10	12	4	-	-	-	1.7258/24CrMo5	-	-

-Compact Nut Features-
 - Compact outer diameters
 - Lower profile Sliders can be used.
 - Longer strokes

-Compact Nuts-
BSSC (K) 1204



-Standard Nuts-
BSST · BSSR (K) · BSSZ (K) 1204, 1210, 1405



Ball Nut Type	Precision Class	Part Number		1mm Increment			Y	D	A	B	T	H	C	V	d	Ball Dia.	Ball Center Dia.	Screw Root Dia.	# of Circuits	Basic Load Rating		Allowable Axial Play	Twisting Direction	
		Type	Screw Shaft Diameter	L	*F	*P														C (Dynamic) kN	Co (Static) kN			
Standard Ball Nut	C7	BSST	12	04	150-795	15	8	L-65	30	35	27	8	50	40	30	4.5	2.3812	12.6	(10)	2.5 turns, 1 row	2.6	5.8	0.03 or Less	Right
						BSSR	15-24	5-8	L-(50+F)	44	32	12	54	41	32	5.5	3.175	12.8	(9.6)	1.5 turns, 1 row	2.85	4.95	0.05 or Less	
						BSSZ	15-24	5-8	L-(50+F)	44	32	12	54	41	32	5.5	3.175	12.8	(9.6)	1.5 turns, 1 row	2.85	4.95	0.10 or Less	
Compact Ball Nut	C10	BSSC	12	04	150-800	15	8	L-65	24	31	20	11	43	33	27	-	2	12.25	(10.4)	4 turns, 1 row	2.79	5.27	0.03 or Less	Right
						BSSCK	15-24	5-8	L-(50+F)	44	32	12	54	41	32	5.5	3.175	12.8	(9.6)	1.5 turns, 1 row	2.85	4.95	0.10 or Less	
Standard Ball Nut	C10	BSSR	14	05	150-800	15	8	L-65	30	35	27	8	50	40	30	4.5	2.3812	12.6	(10)	2.5 turns, 1 row	2.6	5.8	0.03 or Less	Right
						BSSZ	15-24	5-8	L-(50+F)	44	32	12	54	41	32	5.5	3.175	12.8	(9.6)	1.5 turns, 1 row	2.85	4.95	0.05 or Less	
						BSSRK	15-24	5-8	L-(50+F)	44	32	12	54	41	32	5.5	3.175	12.8	(9.6)	1.5 turns, 1 row	2.85	4.95	0.10 or Less	
Standard Ball Nut	C10	BSSR	14	05	150-800	15	8	L-65	30	35	27	8	50	40	30	4.5	2.3812	12.6	(10)	2.5 turns, 1 row	2.6	5.8	0.03 or Less	Right
						BSSZK	15-24	5-8	L-(50+F)	44	32	12	54	41	32	5.5	3.175	12.8	(9.6)	1.5 turns, 1 row	2.85	4.95	0.10 or Less	

*F and P are configurable for BSSRK · BSSZK and BSSCK only. F ≤ Px3

kgf=Nx0.101972



Ball Nut Type	Precision Class	Part Number	€ Unit Price Qty. 1-4		
			L150~400	L401~ 600	L601~ 800
Standard Nut	C7	BSST1204			
		BSSR1204			
		BSSZ1204			
Compact Nut	C10	BSSC1204			
BSSR1210					
BSSZ1210					
Standard Nut	C10	BSSR1405			
		BSSZ1405			

For orders larger than indicated quantity, please request a quotation.
 The price of BS...K (F, P Configurable Type)
 -BSS_K12... add 19,50 EUR to the standard type price.
 ex) BSSZK1204-500-F18-P7 150,30 EUR+19,50 EUR=169,80 EUR
 -BSS_K1405... Add 19,50 EUR to the standard type price.
 ex) BSSZK1405-500-F18-P7 163,20 EUR+29,00 EUR=192,20 EUR



Part Number	L	F	P
BSSC1204	270		
BSSZK1204	270	F15	P6
BSSR1204L	300		
BSSR1204G	300		

(L Type Greased) (G Type Greased)



Days to Ship	Express A	8,00 EUR/ piece
8 Days	Express A	8,00 EUR/ piece
10 Days		

For Days to Ship of this product, Saturday and Sunday are not included.

Note

- Mounting surface of BSST ball nut flange is not surface-treated.
- Filled with lithium soap based grease (Alvania Grease S2 made by Showa Shell Sekiyu K.K).
- Notes: Do not let the nuts overrun as well as remove the nuts from the screw shafts. It may cause the balls to fall out or damage the ball recirculation parts.
- Various grease options are available. For lead time, prices and Specifications, refer to P651. BSSC is not applicable.
- For accuracy of Ball Screws, refer to P651, 653
- For details support units, refer to P685~P694



Part Number	L	F	P	FC · KC...etc.
BSSR1204	270			SC7

Alterations	Code	Spec.	Price Adder
No Machining on Support Side Shaft End	NC	No machining added on the support side shaft end. [Ordering Code] NC	BSST · BSSR BSSZ -25,00 BSSC -7,00
Ball Nut Orientation Reversed (Support Side) (Fixed Side) Changed	RLC	Changes the nut direction. [Ordering Code] RLC	Free of charge
No Retaining Ring Groove on Support Side Shaft End	RNC	No Retaining Ring Groove on the Support Side Shaft End [Ordering Code] RNC Combination with FC is not available.	Free of charge
Change Support Side Shaft End Machining	GC	Changes the machining on the support side. For the screw shaft 12, Q is selectable from 6 · 8. For the screw shaft 14, Q is selectable from 6 · 8 · 10. G=1mm Increment [Ordering Code] GC-08-G20 5-G-Qx3 Y dimension is shortened.	BSST · BSSR BSSZ 10,00 BSSC 4,00
Change Support Side Shaft End Length	FC	Changes the length of the support side shaft end. FC=1mm Increment [Ordering Code] FC20 11 ≤ FC ≤ 20 Y dimension is shortened.	BSST · BSSR BSSZ 7,00 BSSC 3,00

Alterations	Code	Spec.	Price Adder
Wrench Flats on Fixed Side	SZC	Adds wrench flats on the fixed side shaft end. [Ordering Code] SZC Shaft Diameter T A B (C) 12 8 5 20 14 10 7 22 Ball bearings will fall out if the ball nut crosses the wrench flats.	BSST · BSSR BSSZ 7,00 BSSC 3,00
Keyway on Fixed Side Shaft End Detailed Keyway Dimensions	KC	Adds a keyway on the fixed side shaft end. P=5 is not applicable. KC=1mm Increment [Ordering Code] KC10 3 ≤ KC ≤ Px3 KC ≤ F-1	BSST · BSSR BSSZ 14,00 BSSC 6,00
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.) P=5 is not applicable. K,S=1mm Increment [Ordering Code] KLC-KS-S2 4 ≤ K + S ≤ Px3 K + S ≤ F-1	BSST · BSSR BSSZ 14,00 BSSC 6,00
Flat Machined on Fixed Side Shaft End	SC	Adds a flat on the fixed side shaft end. SC=1mm Increment [Ordering Code] SC7 5 ≤ SC ≤ Px3 SC ≤ F-1	BSST · BSSR BSSZ 7,00 BSSC 3,00
2 Flats on Fixed Side Shaft End	SWC SGC	Adds two flats on the fixed side shaft end. JIS SWC: 90° Position SGC: 120° Position 1mm Increment [Ordering Code] JIS SWC 5 ≤ JIS SWC, SGC ≤ Px3 SWC, SGC ≤ F-1	BSST · BSSR BSSZ 7,00 each BSSC 3,00 each

Combination with Support Units

Type	Screw Shaft Outer Diameter	Lead	Recommended Support Units			
			Part Number Type No.	Shape	Fixed Side	Support Side
BSSC	12	04	BSV 10S	Square Type	0	P691
			BUV 10S	Low Profile	0	P692
BSST BSSR BSSZ	12	04 10	BRW 10S	Round	0	P693
			BUR 10S		0	P693
BSSR BSSZ	14	05	BSW 10S	Square Type	0	P687
			BUN 10S		0	P689
BSSR BSSZ	14	05	BRW 10	Round	0	P693
			BUR 10		0	P693
BSSR BSSZ	14	05	BSW 10	Square Type	0	P687
			BUN 10		0	P689

Other than the above part numbers, variety of shapes and surface treatments for Support Units are available. (P685~P694)

Combination with Nut Brackets

Type	Screw Shaft Outer Diameter	Lead	Recommended Nut Brackets		
			Part Number Type No.	Page	
BSSC	12	04	BNFB 1204C	P695	
			BNFM 1204R	P695	
BSST BSSR BSSZ	14	05	BNFA 1405R	P695	

Variety of materials and surface treatments for Nut Brackets are available. (P695)



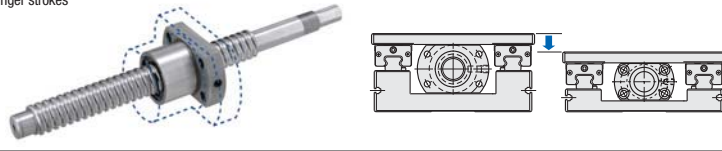
Rolled Ball Screws - Shaft Diameter 15, Lead 5 · 10 · 20- -Accuracy Grade C7 · C10-

Price Reduction
Up to 25%

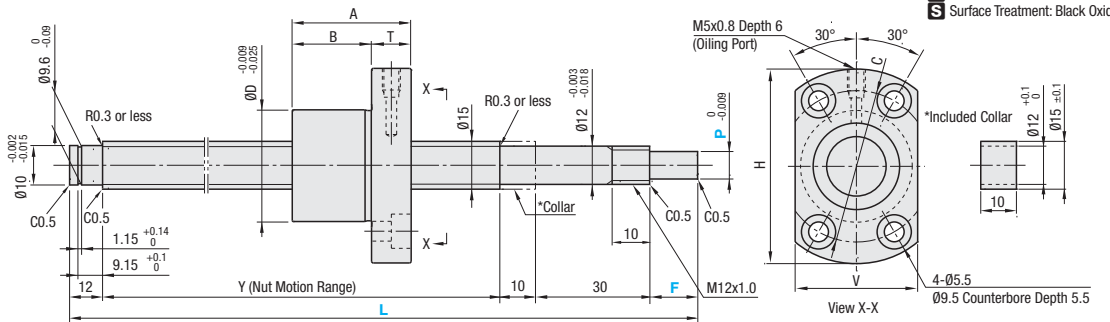
CAD Data

Ball Nut Type	Type	Precision Class	Shaft Diameter	Lead	Screw Shaft			Ball Nut		
					Material	Hardness	Surface Treatment	Material	Hardness	Surface Treatment
Standard Nut	BSST	C7	15	5 · 10 · 20	1.1203/ C55E	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/20CrMo5	Carburized 58-62HRC	Phosphate Conversion Coating
Standard Nut	BSSR	C10	15	5 · 10 · 20	1.1203/ C55E	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/20CrMo5	Carburized 58-62HRC	Low Temperature Black Chrome Plating
Standard Nut	BSSRK	C10	15	5 · 10 · 20	1.1203/ C55E	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/20CrMo5	Carburized 58-62HRC	Low Temperature Black Chrome Plating
Standard Nut	BSSZK	C10	15	5 · 10 · 20	1.1203/ C55E	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/20CrMo5	Carburized 58-62HRC	Low Temperature Black Chrome Plating
Compact Nut	BSSC	C7	15	5 · 10	1.1203/ C55E	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/20CrMo5	Carburized 58-62HRC	Low Temperature Black Chrome Plating
Compact Nut	BSSCK	C10	15	5 · 10	1.1203/ C55E	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/20CrMo5	Carburized 58-62HRC	Low Temperature Black Chrome Plating

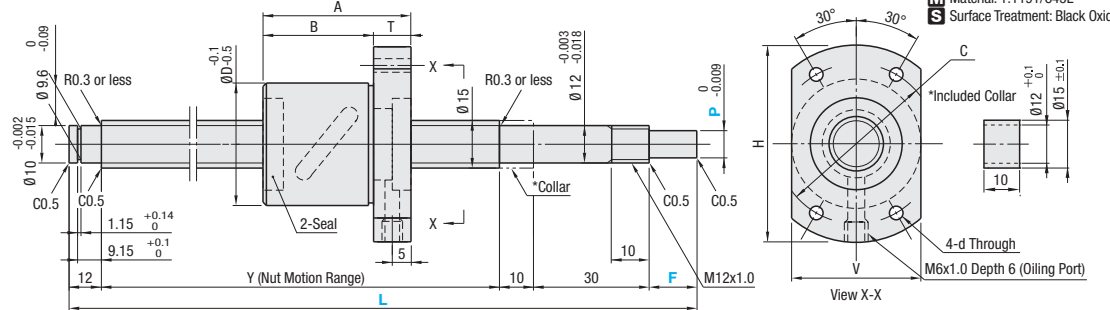
-Compact Nut Features-
- Compact outer diameters
- Lower profile Sliders can be used.
- Longer strokes



-Compact Nuts-
BSSC (K) 1505 · 1510



-Standard Nuts-
BSST · BSSR (K) · BSSZ (K) 1505, 1510, 1520



Ball Nut Type	Precision Class	Type	Screw Shaft Diameter	Lead	1mm Increment			Y	D	A	B	T	H	C	V	d	Ball Dia.	Ball Center Dia.	Screw Root Diameter	# of Circuits	Basic Load Rating		Allowable Axial Play	Twisting Direction
					L	*F	*P														C (Dynamic) KN	Co (Static) KN		
Standard Ball Nut	C7	BSST	15	05	150-1200	15	10	L-67	34	40	30	10	54	44	-	4.5	15.8	(12.5)	2.5 turns, 1 row	5.1	10.5	0.02 or Less	Right	
		BSSR				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.14	7.06	0.10 or Less		
		BSSZK				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.14	7.06	0.10 or Less		
Compact Ball Nut	C10	BSSRK	15	05	150-1200	15	10	L-67	34	52	42	10	57	45	34	5.5	3.175	15.8	(12.5)	2.5 turns, 1 row	5.1	10.5	0.10 or Less	Right
		BSSZK				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.25	7.45	0.10 or Less		
		BSSC				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.25	7.45	0.10 or Less		
Standard Ball Nut	C7	BSST	15	05	150-1200	15	10	L-67	34	40	30	10	54	44	-	4.5	15.8	(12.5)	2.5 turns, 1 row	5.1	10.5	0.02 or Less	Right	
		BSSR				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.14	7.06	0.10 or Less		
		BSSZK				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.14	7.06	0.10 or Less		
Compact Ball Nut	C10	BSSRK	15	05	150-1200	15	10	L-67	34	52	42	10	57	45	34	5.5	3.175	15.8	(12.5)	2.5 turns, 1 row	5.1	10.5	0.10 or Less	Right
		BSSZK				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.25	7.45	0.10 or Less		
		BSSC				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.25	7.45	0.10 or Less		
Standard Ball Nut	C7	BSST	15	05	150-1200	15	10	L-67	34	40	30	10	54	44	-	4.5	15.8	(12.5)	2.5 turns, 1 row	5.1	10.5	0.02 or Less	Right	
		BSSR				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.14	7.06	0.10 or Less		
		BSSZK				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.14	7.06	0.10 or Less		
Compact Ball Nut	C10	BSSRK	15	05	150-1200	15	10	L-67	34	52	42	10	57	45	34	5.5	3.175	15.8	(12.5)	2.5 turns, 1 row	5.1	10.5	0.10 or Less	Right
		BSSZK				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.25	7.45	0.10 or Less		
		BSSC				15-30	6-10	L-(52+F)	31	33	22	11	54	42	-	4.5	15.8	(12.5)	3 turns, 1 row	4.25	7.45	0.10 or Less		

Ball Nut Type	Precision Class	Part Number	€ Unit Price Qty. 1-4					
			L150-200	L201-400	L401-600	L601-800	L801-900	L901-1200
Standard Nut	C7	BSST1505						
	C10	BSSR1505						
Compact Nut	C7	BSSZ1505						
	C10	BSSC1505						
Standard Nut	C7	BSST1510						
	C10	BSSR1510						
Compact Nut	C7	BSSZ1510						
	C10	BSSC1510						
Standard Nut	C7	BSST1520						
	C10	BSSR1520						
Compact Nut	C7	BSSZ1520						
	C10	BSSC1520						

Order Example Part Number - L - F - P
 BSSC1505 - 350
 BSSZK1505 - 400 - F20 - P8
 BSSR1520L - 1000 (L Type Greased)
 BSSR1520G - 400 (G Type Greased)

Days to Ship 8 Days
 Express A 8,00 EUR/ piece
 Express Charge of 21.60 EUR for 3 or more identical pieces.

For orders larger than indicated quantity, please request a quotation.
 For the price of BS...K (F, P Configurable Type), Add 29,00 EUR to the standard type price.
 ex) BSSZK1510-200-F18-P7 153,30 EUR+29,00 EUR=182,30 EUR

For Days to Ship of this product, Saturday and Sunday are not included.

- Note**
- Mounting surface of BSST ball nut flange is not surface-treated.
 - Filled with lithium soap based grease (Alvania Grease S2 made by Showa Shell Sekiyu K.K).
 - Notes: Do not let the nuts overrun, as well as remove the nuts from the screw shafts. It may cause the balls to fall out or damage the ball recirculation parts.
 - Various grease options are available. For lead time, prices and Specifications, refer to P651. BSSC is not applicable.
 - For accuracy of Ball Screws, refer to P651, P653
 - For details support units, refer to P685-P694

Alterations	Code	Spec.	Price Adder
No Machining on Support Side Shaft End	NC	No machining added on the support side shaft end. [Ordering Code] NC	BSST - BSSR BSSZ -25,00 BSSC -8,00
Ball Nut Orientation Reversed (Support Side) (Fixed Side)	RLC	Changes the nut direction. [Ordering Code] RLC	Free of charge
No Retaining Ring Groove on Support Side Shaft End	RNC	No Retaining Ring Groove on the Support Side Shaft End [Ordering Code] RNC Combination with FC is not available.	Free of charge
Change Support Side Shaft End Length	FC	Changes the length of the support side shaft end. FC=1mm Increment [Ordering Code] FC20 13≤FC≤30 Y dimension is shortened.	BSST - BSSR BSSZ 7,00 BSSC 3,00
Change Support Side Shaft End Machining	GC	Changes the machining on the support side. G: Selectable from 8 - 10 - 12 G=1mm Increment [Ordering Code] GC-Q8-G20 5≤G≤Qx3 Y dimension is shortened.	BSST - BSSR BSSZ 10,00 BSSC 4,00
Female Thread Hole on Support Side	MC	Adds a tapped hole on the support side shaft end. MC=1mm Increment [Ordering Code] MC20 M5x0.8 12 18≤MC≤30 Y dimension is shortened.	BSST - BSSR BSSZ 14,00 BSSC 6,00

Alterations	Code	Spec.	Price Adder
Wrench Flats on Fixed Side	SZC	Adds wrench flats on the fixed side shaft end. [Ordering Code] SZC Ball bearings will fall out if the ball nut crosses the wrench flats.	BSST - BSSR BSSZ 7,00 BSSC 3,00
Keyway on Fixed Side Shaft End Detailed Keyway Dimensions P651	KC	Adds a keyway on the fixed side shaft end. KC=1mm Increment [Ordering Code] KC10 3≤KC≤Px3 KC≤F-1	BSST - BSSR BSSZ 14,00 BSSC 6,00
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=1mm Increment [Ordering Code] KLC-K5-S3 4≤K+S≤Px3 K+S≤F-1	BSST - BSSR BSSZ 14,00 BSSC 6,00
Flat Machined on Fixed Side Shaft End	SC	Adds a flat on the fixed side shaft end. SC=1mm Increment [Ordering Code] SC10 5≤SC≤Px3 SC≤F-1	BSST - BSSR BSSZ 7,00 BSSC 3,00
2 Flats on Fixed Side Shaft End	SWC SGC	Adds two flats on the fixed side shaft end. JIS SWC: 90° Position SGC: 120° Position 1mm Increment [Ordering Code] JIS SWC ≤S≤JIS SWC, SGC≤Px3SWC, SGC≤F-1	BSST - BSSR BSSZ 7,00 each BSSC 3,00 each

Combination with Support Units							
Type	Ball Screw Part Number		Recommended Support Units				
	Screw Shaft Outer Diameter	Lead	Part Number	Shape	Fixed Side	Support Side	
BSSC	15	05 10 20	BSV 12	Square Type	0	0	P.691
			BUV 12	Low Profile	0	0	P.692
			BRW 12	Round	0	0	P.693
			BUR 12	Round	0	0	P.693
BSST BSSR BSSZ	15	05 10 20	BSW 12	Square Type	0	0	P.687
			BUN 12	Square Type	0	0	P.689

Combination with Nut Brackets						
Type	Ball Screw Part Number		Recommended Nut Brackets			
	Screw Shaft Outer Diameter	Lead	Part Number	Type	No.	Page
BSSC	15	05 10 20	1505C	BNFB	1505C	P.695
			1510C	BNFM	1510C	P.695
			1520C	BNFR	1520C	P.695
BSST BSSR BSSZ	15	05 10 20	1505R	BNFB	1505R	P.695
			1510R	BNFR	1510R	P.695
			1520R	BNFR	1520R	P.695

Other than the above part numbers, variety of shapes and surface treatments for Support Units are available. (P685 - P694)

Variety of materials and surface treatments for Nut Brackets are available. (P695)



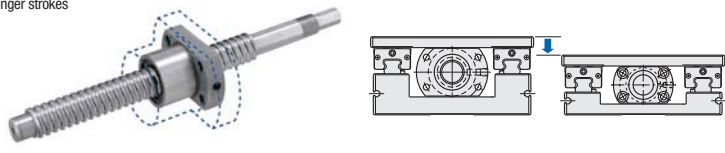
Rolled Ball Screws - Shaft Diameter 20, Lead 5 · 10 · 20- -Accuracy Grade C7 · C10-

Price Reduction
Up to 28%

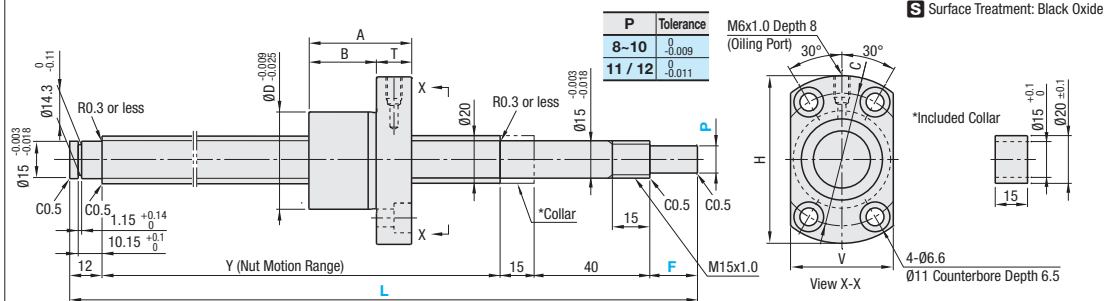
CAD Data

Ball Nut Type	Type		Precision Class	Shaft Diameter	Lead	Screw Shaft			Ball Nut		
	Standard	F · P Configurable				Material	Hardness	Surface Treatment	Material	Hardness	Surface Treatment
Standard Nut	BSST	-	C7	20	5 · 10 · 20	1.1203/ C55E	Induction Hardening 56-62HRC	-	1.7264/20CrMo5	Carburized 58-62HRC	Phosphate Conversion Coating
Standard Nut	BSSR	BSSRK	C10	20	5 · 10 · 20	1.1203/ C55E	Induction Hardening 56-62HRC	-	1.7264/20CrMo5	Carburized 58-62HRC	Low Temperature Black Chrome Plating
Standard Nut	BSSZ	BSSZK									
Compact Nut	BSSC	BSSCK	-	-	5 · 10	-	-	-	1.7258/24CrMo5	-	-

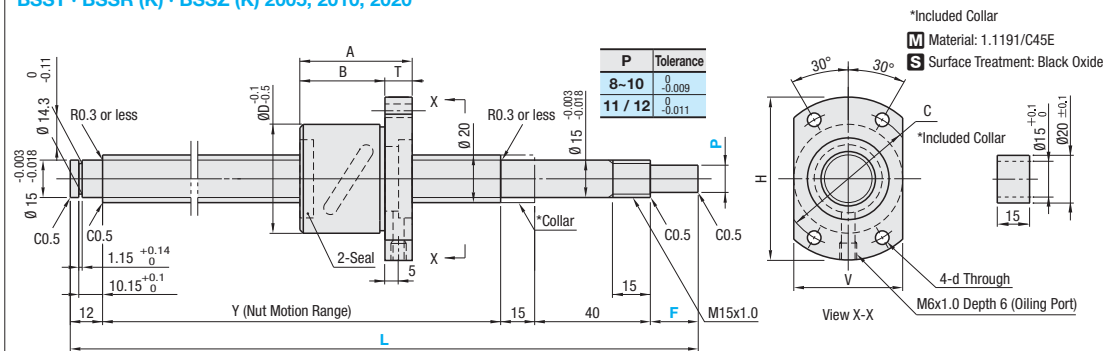
-Compact Nut Features-
- Compact outer diameters
- Lower profile Sliders can be used.
- Longer strokes



-Compact Nuts-
BSSC (K) 2005 · 2010



-Standard Nuts-
BSST · BSSR (K) · BSSZ (K) 2005, 2010, 2020



Ball Nut Type	Precision Class	Part Number	1mm Increment			Y	D	A	B	T	H	C	V	d	Ball Dia.	Ball Center Dia.	Screw Root Dia.	# of Circuits	Basic Load Rating		Allowable Axial Play	Twisting Direction																					
			L	*F	*P														C (Dynamic) kN	Co (Static) kN																							
Standard Ball Nut	C7	BSST	200-1200	20	12	L-87	40	30	10	60	50	40	4.5	3.175	20.8	(17.5)	2.5 turns 1 row	6.2	14.7	0.03 or Less	Right																						
																						C10	BSSR	200-2000	20-36	8-12	L-(67+F)	36	38	25	13	62	49	38	-	20.5	(17.2)	4 turns, 1 row	6.6	14.05	0.10 or Less		
																							BSSZ	200-2000	20-36	8-12	L-(67+F)	36	38	25	13	62	49	38	-	20.5	(17.2)	4 turns, 1 row	6.6	14.05	0.10 or Less		
Compact Ball Nut	C7	BSST	250-2000	20	12	L-87	52	57	45	12	82	67	52	6.5	4.7625	21	(16.3)	2.5 turns 1 row	10.6	22.7	0.05 or Less	Right																					
																							C10	BSSR	250-2000	20-36	8-12	L-(67+F)	36	58.5	45.5	13	62	49	38	-	20.5	(17.2)	4 turns, 1 row	6.53	13.93	0.15 or Less	
																								BSSZ	250-2000	20-36	8-12	L-(67+F)	36	58.5	45.5	13	62	49	38	-	20.5	(17.2)	4 turns, 1 row	6.53	13.93	0.15 or Less	
Standard Ball Nut	C10	BSST	250-2000	20	12	L-87	39	78	68	10	62	50	39	5.5	3.175	20.8	(17.5)	2.5 turns 1 row	6.2	14.7	0.03 or Less	Right																					
																							C7	BSSR	250-2000	20-36	8-12	L-(67+F)	39	78	68	10	62	50	39	5.5	3.175	20.8	(17.5)	2.5 turns 1 row	6.2	14.7	0.10 or Less
																								BSSZ	250-2000	20-36	8-12	L-(67+F)	39	78	68	10	62	50	39	5.5	3.175	20.8	(17.5)	2.5 turns 1 row	6.2	14.7	0.10 or Less

*F and P are configurable for BSSR · BSSZK and BSSCK only. Ⓞ F · P · X

kgf=Nx0.101972

Ball Nut Type	Precision Class	Part Number	€ Unit Price Qty. 1-4						
			L200-400	L401-600	L601-800	L801-1000	L1001-1200	L1201-1500	L1501-2000
Standard Nut	C7	BSST2005							
	C10	BSSR2005							
Compact Nut	C7	BSSZ2005							
	C10	BSSC2005							
Standard Nut	C7	BSST2010							
	C10	BSSR2010							
Compact Nut	C7	BSSZ2010							
	C10	BSSC2010							
Standard Nut	C7	BSST2020							
	C10	BSSR2020							
Compact Nut	C7	BSSZ2020							
	C10	BSSC2020							

Note
 Ⓞ For orders larger than indicated quantity, please request a quotation.
 Ⓞ For the price of BS...K (F · P Configurable Type), Add 29,00 EUR to the standard type price.
 ex. BSSZK2010-300-F22-P8 178,30 EUR+29,00 EUR=207,30 EUR

-BSSC (K)
10 Days Ⓞ For Days to Ship of this product, Saturday and Sunday are not included.

Alterations

Alterations	Code	Spec.	Price Adder
Wrench Flats on Fixed Side	SZC	Adds wrench flats on the fixed side shaft end. [Ordering Code] SZC Ⓞ Ball bearings will fall out if the ball nut crosses the wrench flats.	BSST · BSSR BSSZ 7,00 BSSC 3,00
Incomplete Hardening Area	KC	Adds a keyway on the fixed side shaft end. KC=1mm Increment [Ordering Code] KC15 Ⓞ 4≤KC≤Px3 KC≤F-1	BSST · BSSR BSSZ 14,00 BSSC 6,00
Keyway on Fixed Side Shaft End Detailed Keyway Dimensions P.651	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=1mm Increment [Ordering Code] KLC-K7-S2 Ⓞ 5≤K+S≤Px3 K+S≤F-1	BSST · BSSR BSSZ 14,00 BSSC 6,00
Flat Machined on Fixed Side Shaft End	SC	Adds a flat on the fixed side shaft end. SC=1mm Increment [Ordering Code] SC7 Ⓞ 5≤SC≤Px3 SC≤F-1	BSST · BSSR BSSZ 7,00 BSSC 3,00
2 Flats on Fixed Side Shaft End	SWC SGC SWC SGC	Adds two flats on the fixed side shaft end. SWC: 90° Position SGC: 120° Position 1mm Increment [Ordering Code] SWC10 Ⓞ 5≤JIS SWC, SGC≤Px3 SWC, SGC≤F-1	BSST · BSSR BSSZ 7,00 each BSSC 3,00 each

Combination with Support Units

Ball Screw Part Number			Recommended Support Units				
Type	Screw Shaft Outer Diameter	Lead	Part Number	Shape	Fixed Side	Support Side	Page
BSSC	20	05 10	BSV 15	Square Type Low Profile	0	0	P.691
			BUV 15				P.692
BSST BSSR BSSZ	20	05 10 20	BRW 15	Round	0	0	P.693
			BUR 15				P.693
			BSW 15				P.687
			BUN 15	Square Type	0	0	P.689

Ⓞ Other than the above part numbers, variety of shapes and surface treatments for Support Units are available. (P.685 - P.694)

Combination with Nut Brackets

Ball Screw Part Number			Recommended Nut Brackets		
Type	Screw Shaft Outer Diameter	Lead	Part Number	No.	Page
BSSC	20	05 10	BNFB	2005C	P.695
			BNFR	2010C	P.695
BSST BSSR BSSZ	20	05 10 20	BNFM	2005R	P.695
			BNFA	2010R	P.695
			2010R	P.695	

Ⓞ Variety of materials and surface treatments for Nut Brackets are available. (P.695)



Rolled Ball Screws - Shaft Diameter 25, Lead 5 · 10 · 25- -Accuracy Grade C7 · C10-

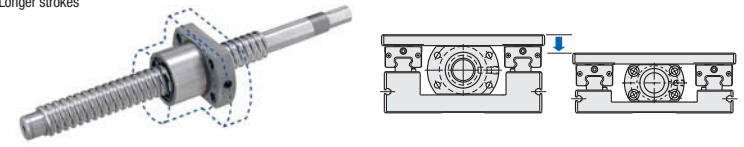
Price Reduction
Up to 28%

CAD Data

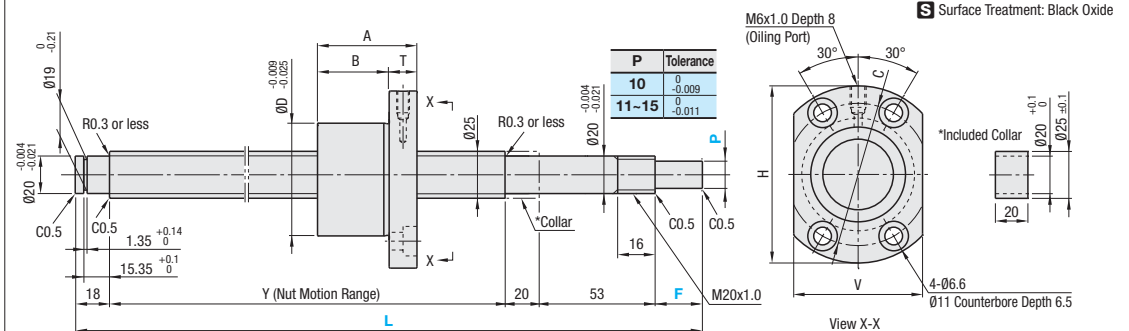


Ball Nut Type	Type		Precision Class	Shaft Diameter	Lead	Screw Shaft			Ball Nut		
	Standard	F · P Configurable				Material	Hardness	Surface Treatment	Material	Hardness	Surface Treatment
Standard Nut	BSST		C7	25	5 · 10	1.1203/C55E	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/20C/Mn5	58-62HRC	Phosphate Conversion Coating
Standard Nut	BSSR	BSSRK	C10	25	5 · 10 · 25	1.1203/C55E	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/20C/Mn5	Carburized 58-62HRC	Low Temperature Black Chrome Plating
Standard Nut	BSSZ	BSSZK									
Compact Nut	BSSC	BSSCK			5				1.7258/24C/Mn5		

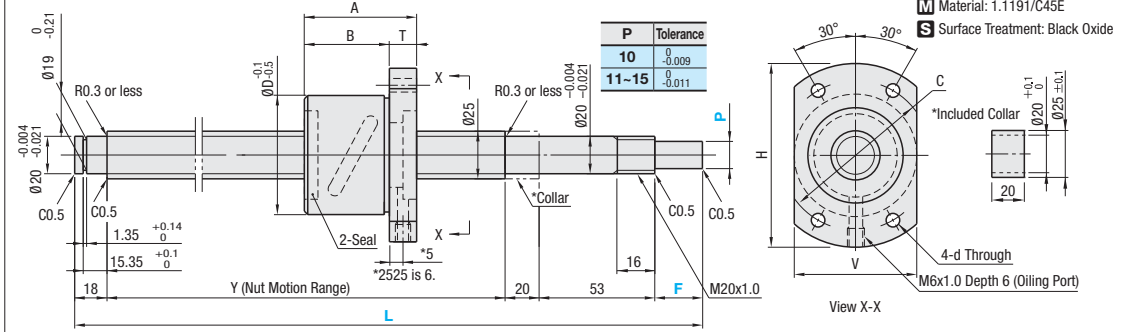
-Compact Nut Features-
- Compact outer diameters
- Lower profile Sliders can be used.
- Longer strokes



-Compact Nuts-
BSSC (K) 2505



-Standard Nuts-
BSST · BSSR (K) · BSSZ (K) 2505, 2510, 2525



Ball Nut Type	Precision Class	Part Number	1mm Increment			Y	D	A	B	T	H	C	V	d	Ball Dia.	Ball Center Dia.	Screw Root Dia.	# of Circuits	Basic Load Rating		Allowable Axial Play	Twisting Direction
			L	*F	*P														C (Dynamic) kN	Co (Static) kN		
Standard Ball Nut	C7	BSST	200-2000	27	15	L-118	43	40	30	10	67	55	43	5.5	3.175	25.8	(21.8)	2.5 turns, 1 row	6.6	18.7	0.03 or Less	Right
				27-45	10-15	L-(91+F)																
Compact Ball Nut	C10	BSSR BSSZ	300-2000	27	15	L-118	42	35	22	13	66	53	48	-	25.5	(22.5)	3 turns, 1 row	5.47	12.52	0.10 or Less	Right	
				27-45	10-15	L-(91+F)																
Standard Ball Nut	C7	BSST	300-2000	27	15	L-118	60	92	77	15	96	78	60	9	6.35	26.8	(20.3)	2.5 turn, 2 line	27.5	76.3	0.07 or Less	Right
				27-45	10-15	L-(91+F)																
Standard Ball Nut	C10	BSSR BSSZ	300-2000	27	15	L-118	47	96	84	12	74	60	47	6.6	3.969	25.8	(21.5)	2.5 turns, 1 row	9.3	22.7	0.12 or Less	Right
				27-45	10-15	L-(91+F)																

*F and P are configurable for BSSRK · BSSZK and BSSCK only. (F)F-Px3

kgf=Nx0.101972



Ball Nut Type	Precision Class	Part Number	€ Unit Price Qty. 1-4						
			L200-400	L401-600	L601-800	L801-1000	L1001-1200	L1201-1500	L1501-2000
Standard Nut	C7	BSST2505 BSSR2505 BSSZ2505							
	C10	BSSC2505							
Compact Nut	C7	BSST2510 BSSR2510 BSSZ2510							
Standard Nut	C7	BSSC2505							
	C10	BSST2510 BSSR2510 BSSZ2510 BSSC2525							



Order Example
Part Number - L - F - P
BSSC2505 - 200 - F27 - P12
BSSZ2525L - 2000 (L Type Greased)
BSSR2510G - 400 (G Type Greased)



Days to Ship **8 Days**
Express A 8,00 EUR/piece P.88
*A Express Charge of 21,60 EUR for 3 or more identical pieces.

For orders larger than indicated quantity, please request a quotation.
For the price of BS...K (F · P Configurable Type), Add 38,00 EUR to the standard type price.
ex) BSSZK2505-300-F30-P13
...216,50 EUR+38,00 EUR=254,50 EUR

Note

- Mounting surface of BSST ball nut flange is not surface-treated.
- Filled with lithium soap based grease (Alvania Grease S2 made by Showa Shell Sekiyu K.K).
- Notes: Do not let the nuts overrun, as well as remove the nuts from the screw shafts. It may cause the balls to fall out or damage the ball recirculation parts.
- Various grease options are available. For lead time, prices and Specifications, refer to P.651 P.653. BSSC is not applicable.
- For accuracy of Ball Screws, refer to P.651, 653
- For details support units, refer to P.685-P.694



Alterations BSSR2505 - L - F - P - (FC · MC...etc.)
BSSC2505 - 700 - RLC

Alterations	Code	Spec.	Price Adder
No Machining on Support Side Shaft End	NC	No machining added on the support side shaft end. (Ordering Code) NC	BSST · BSSR BSSZ -40,00 BSSC -9,00
Ball Nut Orientation Reversed (Support Side) (Fixed Side)	RLC	Changes the nut direction. (Ordering Code) RLC	Free of charge
No Retaining Ring Groove on Support Side Shaft End	RNC	No Retaining Ring Groove on the Support Side Shaft End (Ordering Code) RNC *Combination with FC is not available.	Free of charge
Change Support Side Shaft End Machining	GC	Changes the machining on the support side. Q is selectable from 10 · 12 · 15 · 20 (Ordering Code) GC-Q10-G20 *5<G<Qx3 *Y dimension is shortened.	BSST · BSSR BSSZ 15,00 BSSC 6,00
Change Support Side Shaft End Length	FC	Changes the length of the support side shaft end. FC=1mm Increment (Ordering Code) FC20 *19<FC<60 *Y dimension is shortened.	BSST · BSSR BSSZ 7,00 BSSC 3,00
Female Thread Hole on Support Side Shaft End	MC	Adds a tapped hole on the support side shaft end. MC=1mm Increment (Ordering Code) MC40 M x L x E *Y dimension is shortened. Mx1.25 20 20 *28<MC<60	BSST · BSSR BSSZ 14,00 BSSC 6,00

Alterations	Code	Spec.	Price Adder
Wrench Flats on Fixed Side	SZC	Adds wrench flats on the fixed side shaft end. (Ordering Code) SZC *Ball bearings will fall out if the ball nut crosses the wrench flats.	BSST · BSSR BSSZ 7,00 BSSC 3,00
Keyway on Fixed Side Shaft End Detailed Keyway Dimensions	KC	Adds a keyway on the fixed side shaft end. KC=1mm Increment (Ordering Code) KC20 *5<K<Px3 KC<F-1	BSST · BSSR BSSZ 14,00 BSSC 6,00
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=1mm Increment (Ordering Code) KLC-K20-S3 *6<K+S<Px3 K+S<F-1	BSST · BSSR BSSZ 14,00 BSSC 6,00
Flat Machined on Fixed Side Shaft End	SC	Adds a flat on the fixed side shaft end. SC=1mm Increment (Ordering Code) SC20 *5<SC<Px3 SC<F-1	BSST · BSSR BSSZ 7,00 BSSC 3,00
2 Flats on Fixed Side Shaft End	SWC SGC	Adds two flats on the fixed side shaft end. JIS SWC: 90° Position SGC: 120° Position 1mm Increment (Ordering Code) JIS SWC3 *5<JIS SWC, SGC<Px3 SWC, SGC<F-1	BSST · BSSR BSSZ 7,00 each BSSC each 3,00

Combination with Support Units

Ball Screw Part Number		Recommended Support Units				
Type	Screw Shaft Outer Diameter	Lead	Part Number	Shape	Fixed Side	Support Side
BSSC	25	05	BVV 20	Square Type Low Profile	0	0
			BUV 20	Round	0	0
BSST BSSR BSSZ	25	05 10 25	BRW 20	Round	0	0
			BUR 20		0	0
			BSW 20	Square Type	0	0
			BUN 20		0	0

Other than the above part numbers, variety of shapes and surface treatments for Support Units are available. (P.685 - P.694)

Combination with Nut Brackets

Ball Screw Part Number		Recommended Nut Brackets		
Type	Screw Shaft Outer Diameter	Lead	Part Number	Page
BSSC	25	05	BNFB 2505R	P.695
			BNFM 2505R	P.695
BSST BSSR BSSZ	25	10	BNFR 2510R	P.695
			BNFA 2510R	P.695

Variety of materials and surface treatments for Nut Brackets are available. (P.695)

Rolled Ball Screws - Shaft Diameter 28 · 32, Lead 6 · 10 · 32- -Accuracy Grade C10-

Price Reduction
Up to 28%

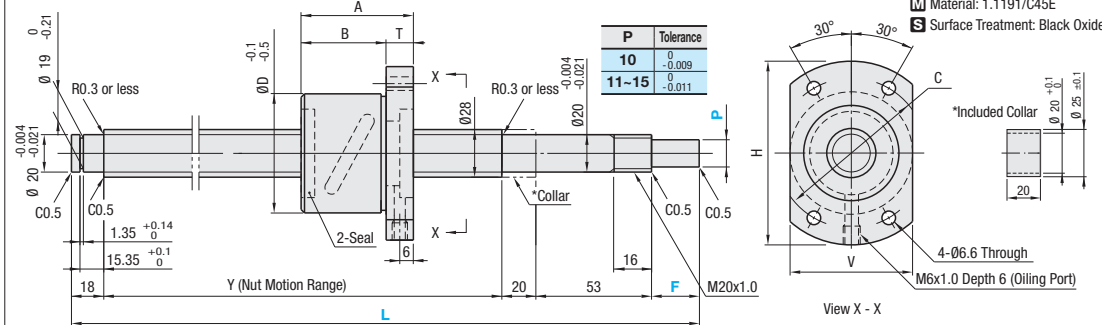
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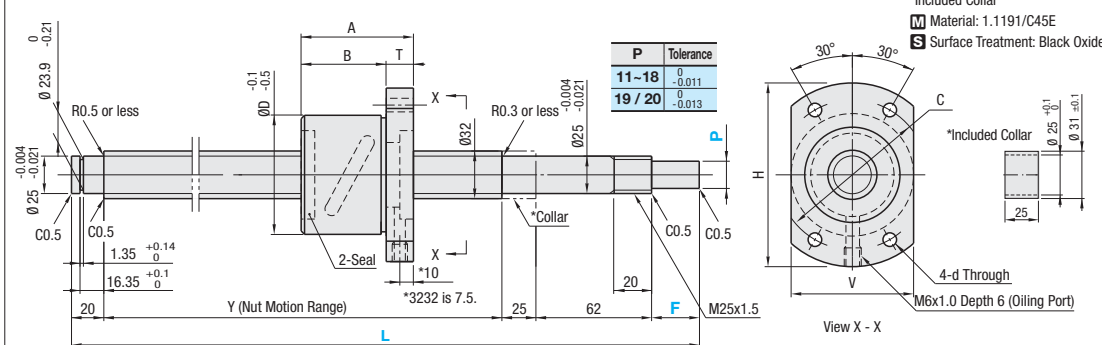
Ball Nut Type	Type		Precision Class	Shaft Diameter	Lead	Screw Shaft			Ball Nut		
	Standard	F · P Configurable				Material	Hardness	Surface Treatment	Material	Hardness	Surface Treatment
Standard Nut	BSSR	BSSRK	C10	28 · 32	6 · 10 · 32	1.1203/ C5E	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/ 20CrMo5	Carburized 58-62HRC	Low Temperature Black Chrome Plating
	BSSZ	BSSZK									

RoHS

-Standard Nuts- BSSR (K) · BSSZ (K) 2806



-Standard Nuts- BSSR (K) · BSSZ (K) 3210, 3232



Ball Nut Type	Precision Class	Part Number		1mm Increment			Y	D	A	B	T	H	C	V	d	Ball Dia.	Ball Center Dia.	Screw Root Diameter	# of Circuits	Basic Load Rating		Allowable Axial Play	Twisting Direction	
		Type	Screw Shaft Diameter	L	*F	*P														C (Dynamic) kN	Co (Static) kN			
Standard Ball Nut	C10	BSSR BSSZ	28	06	250-2000	27	15	L-118	50	65	53	12	80	65	50	6.6	3.175	28.8	(25.6)	2.5 turn, 2 line	12.1	42.3	0.10 or Less	Right
						27-45	10-15																	
		BSSRK BSSZK	32	10	300-2000	33	20	L-140	67	92	77	15	103	85	67	9	6.35	33.8	(27.2)	2.5 turn, 2 line	32.8	86.7	0.20 or Less	
						33-60	11-20																	
		BSSR BSSZ	32	32	300-2000	33	20	L-140	58	86	71	15	92	74	58	9	4.7625	33.0	(27.8)	1.5 turn, 2 line	14.6	38.9	0.15 or Less	
						33-60	11-20																	

*F and P are configurable for BSSRK and BSSZK only. *F ≤ Px3

kgf=Nx0.101972

Ball Nut Type	Precision Class	Part Number	€ Unit Price Qty. 1-4							
			L250-299	L300-400	L401-600	L601-800	L801-1000	L1001-1200	L1201-1500	L1501-2000
Standard Nut	C10	BSSR2806								
		BSSZ2806								
		BSSR3210								
		BSSZ3210								
		BSSR3232								

Order Example: Part Number - L - F - P
 BSSR2806 - 270
 BSSZ3232 - 270 - F40 - P15
 BSSR3210L - 370 (L Type Greased)
 BSSR3232G - 370 (G Type Greased)

Days to Ship: 8 Days
 Express A: 8,00 EUR/ piece
 P88: A Express Charge of 21,60 EUR for 3 or more identical pieces.

For orders larger than indicated quantity, please request a quotation.
 For the price of BS...K (F, P Configurable Type), Add 38,00 EUR to the standard type price.
 ex) BSSZ3210-400-F35-P13
 → 304,90 EUR+38,00 EUR=342,90 EUR

Note

- Filled with lithium soap based grease (Alvania Grease S2 made by Showa Shell Sekiyu K.K).
- Notes: Do not let the nuts overrun, as well as remove the nuts from the screw shafts. It may cause the balls to fall out or damage the ball recirculation parts.
- Various grease options are available. For lead time, prices and Specifications, refer to P651
- For accuracy of Ball Screws, refer to P651, 653
- For details support units, refer to P685-P694

Alterations: Part Number - L - F - P - (FC-MC...etc.)
 BSSZ2806 - 700 RLC

Alterations	Code	Spec.	Price Adder
No Machining on Support Side Shaft End	NC	No machining added on the support side shaft end. (Ordering Code) NC	-40,00
Ball Nut Orientation Reversed (Support Side) (Fixed Side)	RLC	Changes the nut direction. (Ordering Code) RLC	Free of charge
No Retaining Ring Groove on Support Side Shaft End	RNC	No Retaining Ring Groove on the Support Side Shaft End (Ordering Code) RNC *Combination with FC is not available.	Free of charge
Change Support Side Shaft End Machining	GC	Changes the machining on the support side. Q is selectable from 10 · 12 · 15 · 20 · 25 G=1mm Increment (Ordering Code) GC-Q10-G20 *5≤G<Q<3 *Y dimension is shortened.	20,00
Change Support Side Shaft End Length	FC	Changes the length of the support side shaft end. FC=1mm Increment (Ordering Code) FC20 *19≤FC≤60 (BS_2806) *21≤FC≤60 (BS_3210, 3232) *Y dimension is shortened.	7,00
Female Thread Hole on Support Side Shaft End	MC	Adds a tapped hole on the support side shaft end. MC=1mm Increment (Ordering Code) MC40 M8x1.25 20 *Y dimension is shortened. *28≤MC≤60	14,00

Alterations	Code	Spec.	Price Adder
Wrench Flats on Fixed Side	SZC	Adds wrench flats on the fixed side shaft end. (Ordering Code) SZC *Ball bearings will fall out if the ball nut crosses the wrench flats.	7,00
Keyway on Fixed Side Shaft End Detailed Keyway Dimensions	KC	Adds a keyway on the fixed side shaft end. KC=1mm Increment (Ordering Code) KC20 *5≤KC≤P×3 KC:F-1 (BS_2806) *6≤KC≤P×3 KC:F-1 (BS_3210, 3232)	14,00
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=1mm Increment (Ordering Code) KLC-K20-S3 *6≤K+S≤P×3 K+S:F-1 (BS_2806) *7≤K+S≤P×3 K+S:F-1 (BS_3210, 3232)	14,00
Flat Machined on Fixed Side Shaft End	SC	Adds a flat on the fixed side shaft end. SC=1mm Increment (Ordering Code) SC20 *5≤SC≤P×3 SC:F-1	7,00
2 Flats on Fixed Side Shaft End	SWC SGC	Adds two flats on the fixed side shaft end. JIS SWC: 90° Position SGC: 120° Position 1mm Increment (Ordering Code) JIS SWC *5≤JS SWC, SGC≤P×3 SWC, SGC:F-1	7,00 each

Combination with Support Units

Type	Screw Shaft Outer Diameter	Lead	Recommended Support Units				
			Part Number Type No.	Shape	Fixed Side	Support Side	
BSSR BSSZ	28	06	BRW 20	Round	○	○	P.693
			BUR 20	Round	○	○	P.693
			BSW 20	Square Type	○	○	P.687
			BUN 20	Square Type	○	○	P.689
			BRW 25	Round	○	○	P.693
			BUR 25	Round	○	○	P.693
BSSR BSSZ	32	10 32	BSW 25	Square Type	○	○	P.687
			BUN 25	Square Type	○	○	P.689

*Other than the above part numbers, variety of shapes and surface treatments for Support Units are available. (P.685 - P.694)

Combination with Nut Brackets

Type	Screw Shaft Outer Diameter	Lead	Recommended Nut Brackets		
			Part Number Type No.	Page	
BSSR BSSZ	28	06	BNFB 2806R	P.695	
			BNFR 3210R	P.695	
	32	10 32	BNFA 3232R	P.695	

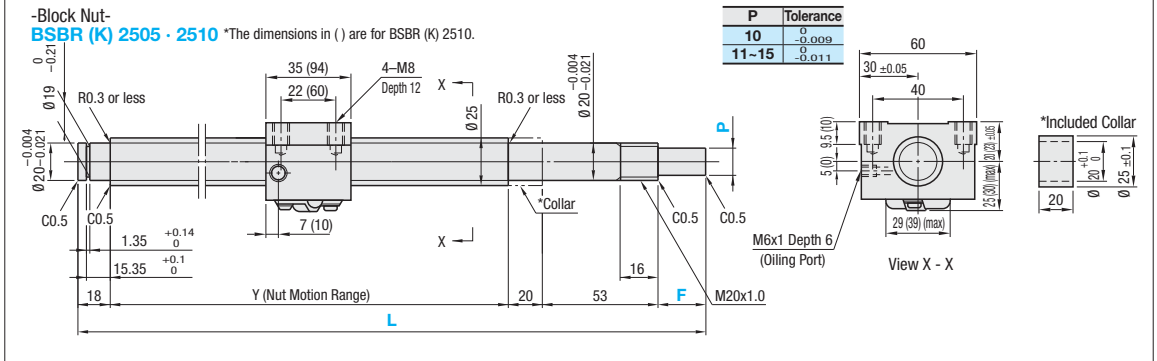
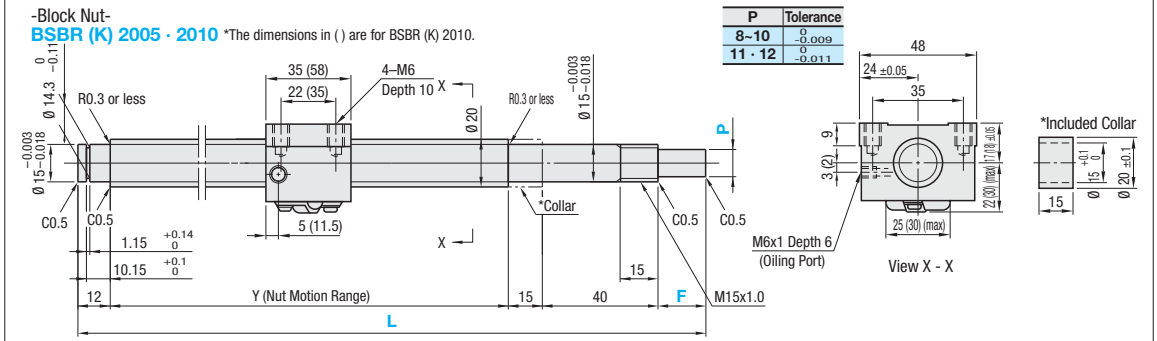
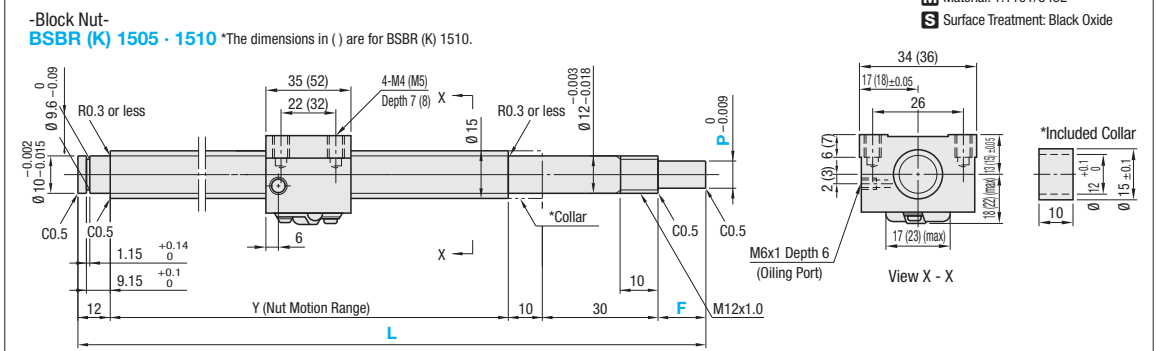
*Variety of materials and surface treatments for Nut Brackets are available. (P.695)

Rolled Ball Screws - Shaft Diameter 15 · 20 · 25, Lead 5 · 10- -Block Style Ball Nut -Accuracy Grade C10-

Price Reduction
Up to 22%

CAD Data

Ball Nut Type	Type	Precision Class	Shaft Diameter	Lead	Screw Shaft			Ball Nut		
					Material	Hardness	Surface Treatment	Material	Hardness	Surface Treatment
Block Nut	BSBR BSBRK	C10	15 · 20 · 25	5 · 10	1.1203/ C5SE	Induction Hardening 56-62HRC	Phosphate Conversion Coating	1.7264/ 20CrMo5	Carburized 58-62HRC	Phosphate Conversion Coating



Ball Nut Type	Precision Class	Part Number		1mm Increment		Y	Ball Dia.	Ball Center Dia.	Screw Root Dia.	# of Circuits	Basic Load Rating		Allowable Axial Play	Twisting Direction			
		Type	Screw Shaft Diameter	L	*F						*P	C (Dynamic) kN			Co (Static) kN		
Block Ball Nut	C10	BSBR BSBRK	15	05	150~1200	15	10	3.175	15.8	(12.5)	2.5 turns, 1 row	5.1	10.5	Right			
						L-(52+F)											
						L-(52+F)											
				05	200~1200	20	12					4.7625	21		(16.3)	6.2	14.7
						L-(67+F)											
						L-87											
		10	200~1500	20-36	8-12	3.175	25.8	(21.8)	10.6	22.7							
				L-(67+F)													
				L-118													
		BSBR BSBRK	25	05	200~1500	27	15	6.35	26.8	(20.3)	2.5 turn, 2 line	27.5	76.3		0.15 or Less		
						L-(91+F)											
						L-118											
10	200~1500			27-45	10-15	27.5	76.3					0.20 or Less					
				L-(91+F)													
				L-118													

*F and P are configurable for BSBRK only. *FC=Px3 kgf=Nx0.101972

Ball Nut Type	Precision Class	Part Number	€ Unit Price Qty. 1~4					
			L150~199	L200~400	L401~600	L601~800	L801~1000	L1001~1200
Block Nut	C10	BSBR1505						
		BSBR1510						
		BSBR2005						
		BSBR2010						
		BSBR2505 BSBR2510						

Order Part Number - L - F - P
Example BSBR1505 - 200
 BSBRK2510 - 370 - F40 - P15
 BSBR2505L - 370 (L Type Greased)
 BSBR2005G - 370 (G Type Greased)

Days to Ship 8 Days
 Express A 8,00 EUR/ piece P88
 *A Express Charge of 21,60 EUR for 3 or more identical pieces.

Note
 *Filled with lithium soap based grease (Alvania Grease S2 made by Showa Shell Sekiyu K.K.)
 *Notes: Do not let the nuts overrun, as well as remove the nuts from the screw shafts.
 *It may cause the balls to fall out or damage the ball recirculation parts.
 *Various grease options are available. For lead time, prices and Specifications, refer to P651
 *For accuracy of Ball Screws, refer to P651 · 653
 *For details support units, refer to P685 - P694

Alterations	Code	Spec.	Price Adder	Alterations	Code	Spec.	Price Adder
No Machining on Support Side Shaft End	NC	No machining added on the support side shaft end. [Ordering Code] NC	-40,00	Wrench Flats on Fixed Side	SZC	Adds wrench flats on the fixed side shaft end. *Ball bearings will fall out if the ball nut crosses the wrench flats.	7,00
Ball Nut Orientation Reversed (Support Side) (Fixed Side)	RLC	Changes the nut direction. [Ordering Code] RLC	Free of charge	Keyway on Fixed Side Shaft End Detailed Keyway Dimensions	KC	Adds a keyway on the fixed side shaft end. KC=1mm Increment *Combination with FC is not available.	14,00
No Retaining Ring Groove on Support Side Shaft End	RNC	No Retaining Ring Groove on the Support Side Shaft End [Ordering Code] RNC	Free of charge	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=1mm Increment [Ordering Code] KLC-K20-S3	14,00
Change Support Side Shaft End Machining	GC	Changes the machining on the support side. G: Selectable from 8 - 10 - 12 G=1mm Increment [Ordering Code] GC-Q8-G20 *5≤G<Q3 *Y dimension is shortened.	20,00	Flat Machined on Fixed Side Shaft End	SC	Adds a flat on the fixed side shaft end. SC=1mm Increment [Ordering Code] SC20	7,00
Change Support Side Shaft End Length	FC	Changes the length of the support side shaft end. FC=1mm Increment [Ordering Code] FC20 *13<FC≤30 (BSBR15_...20_...) *19<FC≤60 (BSBR20_...) *28<FC≤60 (BSBR25_...) *Y dimension is shortened.	7,00	2 Flats on Fixed Side Shaft End	SWC SGC	Adds two flats on the fixed side shaft end. JIS SWC: 90° Position SGC: 120° Position 1mm Increment [Ordering Code] JIS SWC *5≤JIS SWC, SGC≤Px3 SWC, SGC≤F-1	7,00 each
Female Thread Hole on Support Side Shaft End	MC	Adds a tapped hole on the support side shaft end. MC=1mm Increment [Ordering Code] MC40 *18≤MC≤30 (BSBR15_...) *21≤MC≤30 (BSBR20_...) *28≤MC≤60 (BSBR25_...) *Y dimension is shortened.	14,00				

Combination with Support Units

Ball Screw Part Number			Recommended Support Units				
Type	Screw Shaft Outer Diameter	Lead	Part Number Type	Shape	Fixed Side	Support Side	
BSBR	15	05 10	BRW 12	Round	○	○	
			BUR 12	○	○		
			BSW 12	Square Type	○	○	
		20	05 10	BRW 15	Round	○	○
				BUR 15	○	○	
				BSW 15	Square Type	○	○
	25	05 10	BRW 20	Round	○	○	
			BUR 20	○	○		
			BSW 20	Square Type	○	○	

*Other than the above part numbers, variety of shapes and surface treatments for Support Units are available. (P685 - P694)

Precision Ball Screws - Shaft Diameter 15, Lead 5 · 10 · 20 · 40- -Accuracy Grade C3 · C5 · C7-

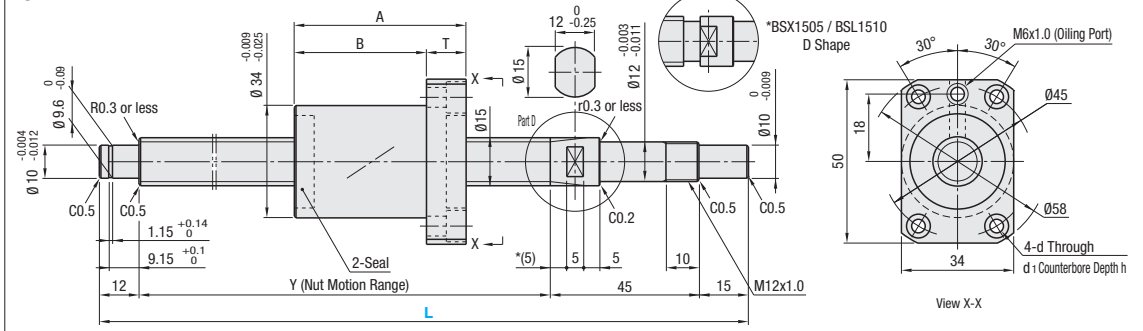
Price Reduction
20%

CAD Data



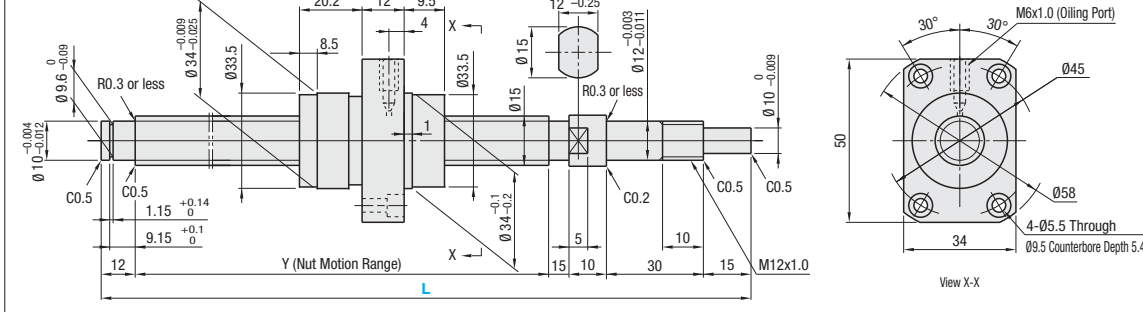
Ball Nut Type	Type		Precision Class	Shaft Diameter	Lead	Screw Shaft		Ball Nut	
	Screw Twist Direction Right	Screw Twist Direction Left				Material	Hardness	Material	Hardness
Standard Nut	BSX	-	C3	15	5	AISI4150	Induction Hardening 58~62HRC	1.7264/20CrMo5	Carburized 58~62HRC
	BSS	BSL	C5	5-10-20-40					
	BSSE	-	C7						

-Standard Nuts-
BSX · BSS · BSSE1505 BSS · BSSE · BSL1510 BSS · BSSE1520
Recirculation tube will show as reversed for left hand thread screws.



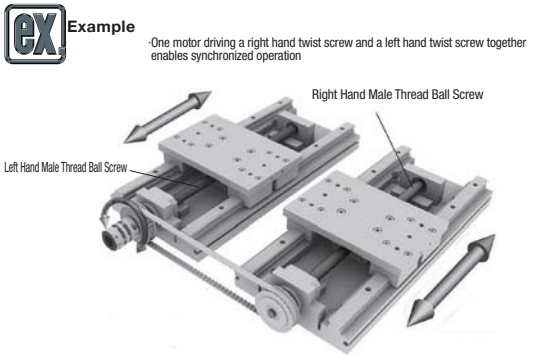
*BSS, BSSE1505 · 1510 and 1520 will change to D Shape at anytime without notice.

-Standard Nuts-
BSS1540



Ball Nut Type	Precision Class	Part Number	Screw Shaft Diameter	Lead	1mm Increment L	Y					Ball Dia.	Ball Center Dia.	Screw Root Dia.	# of Circuits	Basic Load Rating		Allowable Axial Play	Preload Torque N-cm	Twisting Direction	
						A	B	T	d	dr					h	C (Dynamic) kN				Co (Static) kN
Standard Ball Nut	C3	BSX	15	05	150~590	L-72	44	34	10	5.5	5.4	3.175	15.8	(12.5)	2.5 turns, 1 row	4.34	6.25	0 (Preloaded)	1.5~6.0	Right
	C5	BSS			150~1095	L-72	52	40			9.5					0.005 or Less	2.0 or Less			
	C7	BSSE			200~1095	L-72	52	40			9.5					0.030 or Less	-			
	C5	BSS			200~1095	L-72	62	50			12					6	6			
	C7	BSSE			200~1095	L-72	62	50			12					6	6			
	C5	BSS			230~1095	L-72	62	50			12					6	6			
	C7	BSSE	230~1095	L-72	62	50			12	6	6									
	C5	BSS	300~1095	L-82										1.5 turns, 1 row	4.4	7.9	0.005 or Less	3.0 or Less	Left	
	C7	BSSE	300~1095	L-82										1.5 turns, 1 row	4.4	7.9	0.030 or Less	-		
	C5	BSS	300~1095	L-82										0.67mm, 3 line	5.6	8.6	0.010 or Less	-		

kgf=Nx0.101972



***Precaution for use of Ball Screws**

The products shown in the Table 1 still have threads on their parts A. However, this is outside of the motion range, therefore, do not advance the nut into the A area.

Do not let the nuts overrun or remove the nuts from the screw shafts, as ball fall-outs and damages will occur.

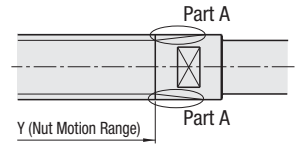


Table 1

Type	Screw Shaft Diameter	Lead
BSS	12	05
	15	10
	20	10
	25	10
	25	10
BSSE	12	10
	15	10
	20	10
	25	10
	25	10



Precision Class	Part Number	€ Unit Price Qty. 1~4													
		L150 ~199	L200	L201 ~229	L230 ~299	L300 ~390	L391 ~400	L401 ~590	L591 ~595	L596 ~600	L601 ~800	L801 ~895	L896 ~900	L901 ~1000	L1001 ~1095
C3	BSX1505														
C5	BSS1505														
C7	BSSE1505														
C5	BSS1510														
C5	BSL1510														
C7	BSSE1510														
C5	BSS1520														
C7	BSSE1520														
C5	BSS1540														

For orders larger than indicated quantity, please request a quotation.



Order Example

Part Number	L	Price
BSX1505	300	(L Type Greased)
BSSE1510L	420	(L Type Greased)
BSSE1510G	420	(G Type Greased)



Days to Ship **8 Days** (BSS only) **10 Days**

Note

- Filled with lithium soap based grease (Alvania Grease S2 made by Showa Shell Sekiyu K.K).
- Do not let the nuts overrun, as well as remove the nuts from the screw shafts. It may cause the balls to fall out or damage the ball recirculation parts.
- Various grease options are available. For lead time, prices and Specifications, refer to **P.651**. BSX is not applicable.
- For accuracy of Ball Screws, refer to **P.651** and **653**.
- For Support Units details, refer to **P.685~694**.



Alterations

Part Number	L	(FC · KC...etc.)
BSS1505	350	KC10

Alterations	Code	Spec.	Price Adder
No Machining on Support Side Shaft End	NC	No machining added on the support side shaft end. (Ordering Code) NC	-30,00
Ball Nut Orientation Reversed	RLC	Changes the nut direction. (Ordering Code) RLC	Free of charge
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.	Free of charge
Change Support Side Shaft End Length	FC	Changes the length of the support side shaft end. FC=1mm Increment (Ordering Code) FC20 13<FC<30 Y dimension is shortened.	14,00
Change Support Side Shaft End Machining	GC	Changes the machining on the support side. Q: Selectable from 8, 10, 12 G=1mm Increment (Ordering Code) GC-Q8-G20 5<G<Qx3 Y dimension is shortened. Not applicable to BSS1540	10,00

Alterations	Code	Spec.	Price Adder
Female Thread Hole on Support Side Shaft End	MC	Adds a tapped hole on the support side shaft end. MC=1mm Increment (Ordering Code) MC20 M x l Y dimension is shortened. Mx0.8 12 18<MC<30	14,00
Keyway on Fixed Side Shaft End Detailed Keyway Dimensions	KC	Adds a keyway on the fixed side shaft end. KC=1mm Increment (Ordering Code) KC10 3<KC<14	14,00
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=1mm Increment (Ordering Code) KLC-K5-S3 4<K<S<14	14,00
Flat Machined on Fixed Side Shaft End	SC	Adds a flat on the fixed side shaft end. SC=1mm Increment (Ordering Code) SC7 5<SC<14	7,00
2 Flats on Fixed Side Shaft End	SWC SGC	Adds two flats on the fixed side shaft end. JIS SWC: 90° Position SGC: 120° Position 1mm Increment (Ordering Code) JIS SWC 5<S<JIS SWC, SGC<14	1505-1510 -1520: 14,00 each 1540: 7,00 each

Combination with Support Units

Ball Screw Part Number	Recommended Support Units							
	Type	Screw Shaft Outer Diameter	Lead	Part Number	Shape	Fixed Side	Support Side	Page
BSX BSS BSSE BSL	15	05 10 20 40	12	BRW	12	Round	○	P.693
				BUR	12	Round	○	P.693
				BSW	12	Square	○	P.687
				BUN	12	Square	○	P.689

Other than the above part numbers, variety of shapes and surface treatments for Support Units are available. (P.685~P.694)

Combination with Nut Brackets

Ball Screw Part Number	Recommended Nut Brackets					
	Type	Screw Shaft Outer Diameter	Lead	Part Number	No.	Page
BSX BSS BSSE BSL	15	05 10 20 40	1505S	1505S	P.695	
				BNFB	P.695	
				BNFM	1510S	P.695
				BNFR	1520S	P.695

Variety of materials and surface treatments for Nut Brackets are available. (P.695)

Features of Support Units

Features of Support Units (Fixed Side)

Preloaded bearings are incorporated in the Support Units and they provides steady rotation performance with high-rigidity and high-accuracy. 3 types of fixed side Support Units are available depending on the purpose.

-Standard Type Support Units

Uses the preloaded JIS 5 class Angular Contact Bearings. It is preferable to use for high-accuracy and high-speed precision ball screws.

-Economy Type Support Units

Uses the preloaded JIS 0 class Angular Contact Bearing. While no Axial Play is regulated, it bears the axial load which is the same level to the JIS 5 class axial load. 20% lower in price comparing to those of the Standard Type. It is preferable to use for intermediate and low speed applications.

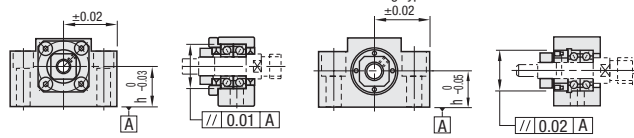
-Radial Bearing Type Support Units

Uses 2 preloaded JIS 0 class Angular Contact Bearings. Though the allowable axial load is low, it can bear the load from the axial direction. 30% lower in price comparing to those of the Standard Type. It is preferable to use for low speed screws.

Support Units (Fixed Side) Mounting Interface Accuracies

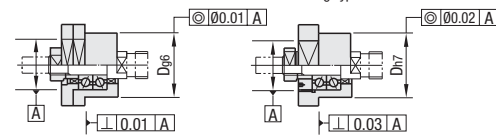
■Square Type

Standard Type



■Round

Standard Type



■Bearings

d	Standard Type		Economy Type		Radial Bearing Type	
	Bearings	Allowable Axial Load (N)	Bearings	Allowable Axial Load (N)	Bearings	Allowable Axial Load (N)
4	AC4-12DF/P5	1075	-	-	-	-
5	AC5-14DF/P5	1248	-	-	-	-
6	70M6DF/GMP5	1040	-	-	606ZZCNM	780
8	70M8DF/GMP5	1450	-	-	608ZZCNM	1300
10	7000DF/GMP5	2730	7000DF/Standard Class	2730	6000ZZCNM	2300
12	7001DF/GMP5	3040	7001DF/Standard Class	3040	6001ZZCNM	2600
15	7002DF/GMP5	3370	7002DF/Standard Class	3370	6002ZZCNM	2900
20	7204DF/GMP5	8260	7204DF/Standard Class	8260	6204ZZCNM	8100
25	7205DF/GMP5	9960	7205DF/Standard Class	9960	-	-

Keep radial bearing rotational speeds to under 3000rpm.

■Bearings Accuracy(extract)

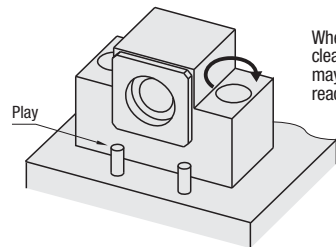
Nominal Bearings Inner Dia.		Flat Surface Average O.D. Dim. Differences				Radial Runout		Axial Play	
d	mm	ΔDmp		Kia		Sia		Unit: μm	
More than	or Less	Over	Under	Over	Under	Class 0	Class 5	Class 0	Class 5
2.5	10	0	-8	0	-5	10	4	-	7
10	18	0	-8	0	-5	10	4	-	7
18	30	0	-10	0	-6	13	4	-	8

Nominal Bearing O.D.		Flat Surface Average O.D. Dim. Differences				Radial Runout		Axial Play	
D	mm	ΔDmp		Kea		Sea		Unit: μm	
More than	or Less	Over	Under	Over	Under	Class 0	Class 5	Class 0	Class 5
6	18	0	-8	0	-5	15	5	-	8
18	30	0	-9	0	-6	15	6	-	8
30	50	0	-11	0	-7	20	7	-	8
50	80	0	-13	0	-9	25	8	-	10

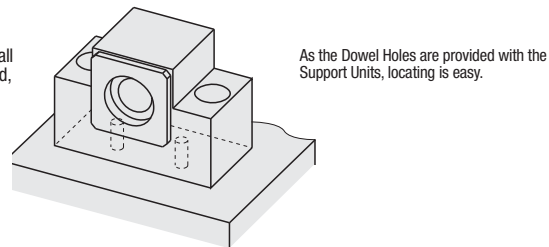
Features of Support Units with Dowel Holes P.688

There is a method of pressing against vertical dowel pins for locating support units. However, it required care in adjustments when tightening the mounting screws not cause clearances between the Pins and the support unit.

- Method of pressing against vertically placed dowel pins



- Using the Support Units with Dowel Holes



■Ball Screw Compatibility Chart

Support Units	No.6 No.6L	No.8S	No.8	No.10S	No.1022 No.10	No.12	No.152 No.15	No.20	No.25
Ball Screw Fixed Side Shaft Dia.	06	08	08	10	10	12	15	20	25
Oil Seal Applicable Diam.	010	010	011.5	012	014	015	020	025	031
Applicable Ball Screws	Accuracy Grade C3	BSX0601	-	BSX0801 BSX0802 BSX1002	-	BSX1202 BSX1205	BSX1505	-	-
	Accuracy Grade C5	-	BSS1002	BSS0802 BSL0802 BSS1202	BS-1004 BS-1205 BSS1204 BSS1210	BSS1010	BSS15 BSL1510	BSS20	BSS25
	Accuracy Grade C7	BSS1002	BSS1002 BSS1004	BSS0802 BSS1202	BSS1004 BSS1205 BSS1210 BSS1204	-	BSS15 BSS25	BSS20 BSS25	BSS25
	Accuracy Grade C10	BSSR08 BSSZ08 BSSC08	BSSR10 BSSZ10 BSSC10	-	BSSR12 BSRR12 BSSZ12 BSSC12	BSSR1405 BSRR1405 BSSZ1405	BSSR15 BSRR15 BSSZ15 BSSC15	BSSR20 BSRR20 BSSZ20 BSSC20	BSSR25 BSRR25 BSSZ25 BSSC25

■Support Units included Collars

No.	D	V	L
4	5.5	4	4.5
5	7.5	5	5.5
6	9.5	6	5
8S	10	8	5.5
8	11.5	8	5.5
10S	12	10	5.5
10	14	10	5.5
12	15	12	5.5
15	20	15	10
20	25	20	11
25	31	25	14

*For 6S and 10S, the inner diameter of oil seal is smaller than the previous type. Use in accordance with the ball screw fixed side dimensions.

Support Unit Installation

Assembly of Support Units

Installing the support units incorrectly would cause degradation of accuracies and service life expectancy, and the machines would not perform up to their full potential. Considerable care must be taken during installation. Assembly procedure and cautionary points are outlined below.

(1) Pre-assembly Preparation

Find a sufficient work area that is as dust-free and moisture-free as possible. Make sure there is little variation in temperature. Choose a clean location and prepare necessary tools on a workbench.

(2) Inspection of Shafts and Support Units

Confirm that there is no dust, foreign objects or burrs on the shaft and bearing inner bore. If burrs are recognized, remove with a oilstone or similar, and brush or wipe off chips thoroughly.

(3) Installing the support unit to the ball screw shaft

- Prepare a ball screws and a support unit.

- Insert the fixed side shaft end into the support unit.

Caution on Insertion

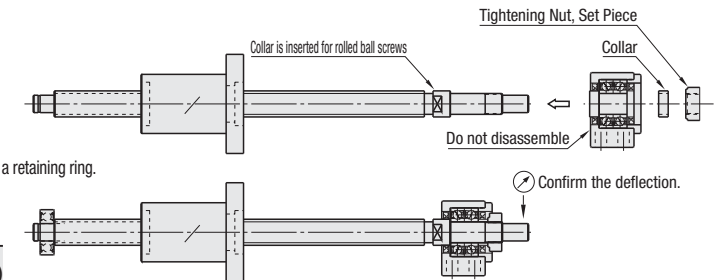
Insert the Shaft straight not to interfere with the Support Unit.

Also, watch for curled back oil seal lip. Apply some grease for smooth insertion.

- Temporarily tighten the bearing nut.

- Install a radial bearing on ball screw support side. Fix the bearing with a retaining ring.

- Maintain tip runout to be as small as possible.



M	Clamping Nut Tightening Torque (N-cm)	M	Clamping Nut Tightening Torque (N-cm)
4	160	12	1370
5	200	15	2350
6	245	20	4700
8	490	25	8430
10	930		

For reference only.

(4) Precautions on installation of bearing nut

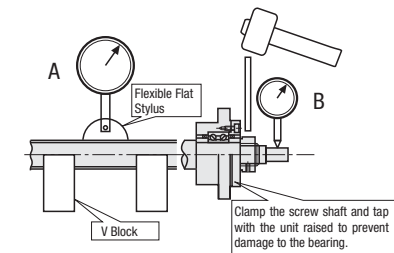
(1) Lightly tighten the bearing nut.

Tighten to 1/3 of the recommended torque (see table).

(2) Place the screw shaft on a set of V-blocks, place a dial indicator at A or B as shown, and rotate the shaft while seeking for a position where the largest indicator deflection is observed.

(3) Using a hammer or other appropriate tools as shown, lightly tap the bearing nut at the aforementioned angular position until the indicator reading becomes minimum.

(4) Progressively tighten the bearing nut by repeating the step (3) above 2 ~3 times until the specified tightening torque is fully reached.



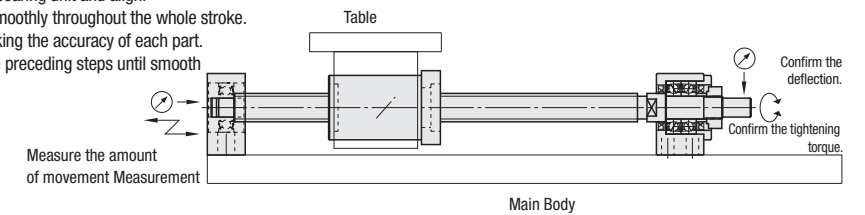
(5) Installation of support side bearing unit and accuracy check

- Move the carriage toward the support side bearing unit and align.

- Reciprocate the carriage so that it travels smoothly throughout the whole stroke.

- Fully tighten the mounting bolts while checking the accuracy of each part.

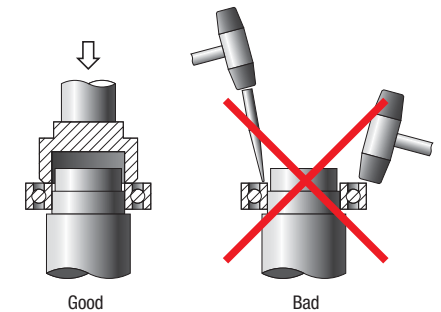
- If the outcome is not satisfactory, repeat the preceding steps until smooth motion is obtained.



Precautions on Support Unit Installation

When inserting ball screws into fixed side support units, some cases will be slip-fit and others may be light press-fit cases.

If the fit appears to be a light-press, do not force the bearing onto the screw shaft in a tilted manner, or do not strike the bearing inner ring and support unit housing. In case if there is any interferences between the screw shaft and bearing inner ring, do not insert the ball screw forcibly. Remove the screw at once and correct the swell on the shaft, then try reassembling.



Support Units · Square

-Fixed Side Standard Type / Fixed Side Economy Type-

Price Reduction
Up to 5%



Support Units · Square

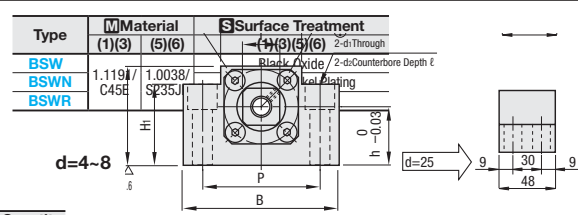
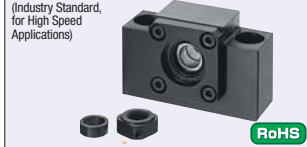
-Fixed Side Standard Type with Dowel Holes/Fixed Side Radial Bearing Type-

Price Reduction
Up to 5%

The Standard Type uses the preloaded JIS 5 class Angular Contact Bearings. It is preferable to use for high-accuracy and high-speed precision applications.

CAD Data

Support Units Fixed Side Standard Type



Component Details

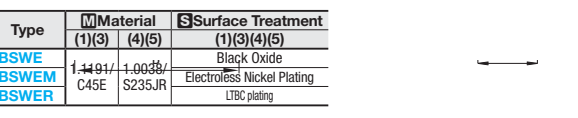
No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Angular Contact Bearing Class 5	1 Set
(3)	Cover	1
(4)	Hexagon Socket Head Cap Screw*	4
(5)	Collar	1
(6)	Clamping Nut (With Set Piece)	1
(7)	Oil Seal	2

- Oil seal (7) is not included when d=6.
- d=4, 5, 8 come with one oil seal (7) only.
- Do not disassemble (1), (2) and (3), as they must remain as an assembled unit.
- BSWR bearing is filled with low particulate generation grease.
- *Screws (4) for BSWR and BSWN are stainless steel type.
- For No.8S and 10S, the inner diameter of oil seal is smaller than the previous type.

d=10~25

Type	No.	d	L	L1	L2	L3	B	H	h	B1	H1	P	d1	d2	l	M (Fine)	T	Oil Seal Applicable Shaft Dia.	BSW		BSWN		BSWR			
																			€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount		
BSW BSWN BSWR	4	4	15	-	18	3	34	19	10	18	7	26	4.5	-	-	M4x0.5	10	6								
	5	5	16.5	-	19	3.5	36	21	11	20	8	28				M5x0.5	11	8								
	6	6	20	-	22.5	3.5	42	25	13	18	20	30	5.5	9.5		M6x0.75	12	-								
	8S	8	23	-	26	4	52	32	17	25	26	38	6.6	11		M8x1.0	14	10								
	8	8	23	-	26	4	52	32	17	25	26	38	6.6	11		M8x1.0	14	11.5								
	1022																									
	10	10	24	6	29.5	6	70	43	25	36	35	52	9	14		M10x1.0	17	12								
	10S	10	24	6	29.5	6	70	43	25	36	35	52	9	14		M10x1.0	17	14								
	1223	12															M12x1.0	19	15							
	12	12															M12x1.0	19	14							
	1526																									
	1528	15	25	6	38	5	80	48	28	41	38	60	11	17	15		M15x1.0	22	20							
	15	15	25	6	38	5	80	48	28	41	38	60	11	17	15		M15x1.0	22	20							
	20	20	42	10	52	10	95	58	30	56	45	75					M20x1.0	30	25							
	25	25	48	13	59	14	105	68	35	66	25	85	11	-	-		M25x1.5	35	31							

Support Units Fixed Side - Economy



Component Details

No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Angular contact bearing class 0	1 Set
(3)	Cover	1
(4)	Collar	1
(5)	Clamping Nut (With Set Piece)	1
(6)	Oil Seal	2

- Do not disassemble (1), (2) and (3), as they must remain as an assembled unit.
- For No.10S, the inner diameter of oil seal is smaller than the previous type.

d25 is not counterbored.

Type	No.	d	L	L1	L2	B	H	h	B1	H1	P	d1	d2	l	M (Fine)	T	Oil Seal Applicable Shaft Dia.	BSWE		BSWEM		BSWER		
																		€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	
BSWE BSWEM BSWER	1022																							
	10S	10																						
	10	10	27	29.5	6	70	43	25	36	35	52	9	14	11		M10x1.0	17	14						
	1223	12																						
	12	12																						
	1526																							
	1528	15	29	38	5	80	48	28	41	38	60	11	17	15		M15x1.0	22	20						
	15	15	29	38	5	80	48	28	41	38	60	11	17	15		M15x1.0	22	20						
	20	20	48	52	10	95	58	30	56	45	75						M20x1.0	30	25					
	25	25	58	59	14	105	68	35	66	25	85	11	-	-			M25x1.5	35	31					

*When No.=15, H dimension is taller than Standard Type in 2mm.

Order Part Number Example: BSW15 BSWE20

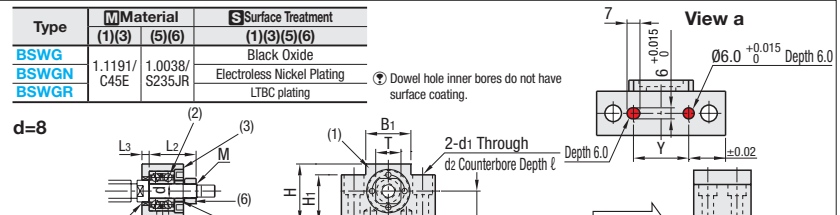
Days to Ship: 6 Days

- MISUMI Original Economy Type uses the angular contact bearing class 0 and is economical than the Standard Type. For features P.685
- For details of Support Units Mounting Interface Accuracies and bearings, refer to P.685
- Ball Screw Compatibility Chart P.685
- Raydent products are filled with Low Particulate Grease and for cleanrooms.

MISUMI original Standard Type with Dowel Holes achieves more accurate positioning than conventional products and repeatability. For features, P.685

CAD Data

Support Unit - Fixed Side - Standard with Dowel Holes



Component Details

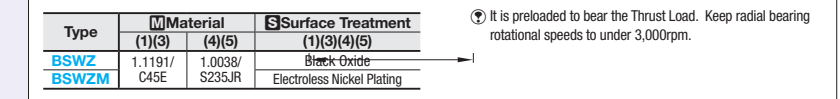
No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Angular Contact Bearing Class 5	1 Set
(3)	Cover	1
(4)	Hexagon Socket Head Cap Screw*	4
(5)	Collar	1
(6)	Clamping Nut (With Set Piece)	1
(7)	Oil Seal	2

- d=8 comes with one oil seal (7) only.
- Do not disassemble (1), (2) and (3), as they must remain as an assembled unit.
- BSWGR bearing is filled with low particulate generation grease.
- *Screws (4) for BSWGR and BSWGN are stainless steel type.
- For No.8S and 10S, the inner diameter of oil seal is smaller than the previous type.

d=10~25

Type	No.	d	L	L1	L2	L3	B	H	h	B1	H1	P	Y	d1	d2	l	M (Fine)	T	Oil Seal Applicable Shaft Dia.	BSWG		BSWGN		BSWGR		
																				€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	
BSWG BSWGN BSWGR	8S	8	23	-	26	4	52	32	17	25	26	38	20	6.6	11		M8x1.0	14	10							
	8	8	23	-	26	4	52	32	17	25	26	38	20	6.6	11		M8x1.0	14	11.5							
	1022																									
	10S	10																								
	10	10	24	6	29.5	6	70	43	25	36	35	52	9	14			M10x1.0	17	14							
	1223	12																								
	12	12																								
	1526																									
	1528	15	25	6	38	5	80	48	28	41	38	60	36	11	17	15		M15x1.0	22	20						
	15	15	25	6	38	5	80	48	28	41	38	60	36	11	17	15		M15x1.0	22	20						
	20	20	42	10	52	10	95	58	30	56	45	75	50					M20x1.0	30	25						
	25	25	48	13	59	14	105	68	35	66	25	85	60	11	-	-		M25x1.5	35	31						

Fixed Side - Radial Bearing



Component Details

No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Radial Bearing	1 Set
(3)	Cover	1
(4)	Collar	1
(5)	Clamping Nut (With Set Piece)	1
(6)	Oil Seal	1

- Oil seal (6) is not included when d=6.
- Do not disassemble (1), (2) and (3), as they must remain as an assembled unit.
- For No.8S and 10S, the inner diameter of oil seal is smaller than the previous type.

d25 is not counterbored.

Type	No.	d	L	L1	L2	B	H	h	B1	H1	P	d1	d2	l	M (Fine)	T	Oil Seal Applicable Shaft Dia.	BSWZ		BSWZM				
																		€ Unit Price	Volume Discount	€ Unit Price	Volume Discount			
BSWZ BSWZM	6	6	20	22.5	3.5	42	25	13	18	20	30	5.5	9.5											
	8S	8	23	26	4	52	32	17	25	26	38	6.6	11											
	8	8	23	26	4	52	32	17	25	26	38	6.6	11											
	1022																							
	10S	10																						
	10	10	27	29.5	6	70	43	25	36	35	52	9	14											
	1223	12																						
	12	12																						
	1526																							
	1528	15	29	38	5	80																		

Support Units / Stoppers for Ball Screws

-Support Side Type-

CAD Data

Support Units Support Side



Standard	Type With Retaining Ring	Material	Surface Treatment
BUN	BTN	1.1191/C45E	Black Oxide
BUNM	BTNM		Electroless Nickel Plating
BUNR	-		LTBC plating

No.1022-25 is not counterbored.

Retaining Ring Type

Component Details

No.	Part Name	Quantity
(1)	Housing	1
(2)	Radial Bearing	1
(3/4)	Retaining Ring*	1

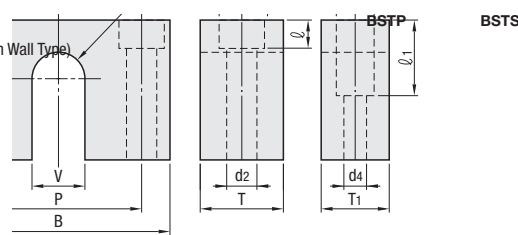
*BUNR bearing is stainless steel type filled with low particle generation grease.
*Retaining ring (3), (4) of BUNR and BUNM are stainless steel type.

Part Number	Type	No.	d	L	B	H	h	B ₁	H ₁	P	V	d ₁	d ₂	ℓ	Retaining Ring Type		BUN		BUNM		BUNR		BTN		BTNM			
															g	Retaining Ring	Bearings Type	Retaining Ring	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount
BUN BUNM BUNR	6	6	12	42	25	13	18	20	30	17	5.5	9.5	11	3	RTWN - S17	B606ZZ	STWN - S6											
		8	15	52	32	17	25	26	38	17	6.6	11																
	1022	8	10	40	22	21	22	22	9	3	RTWN - S22	B608ZZ	STWN - S8															
			1223	41	23	36	22	52	22	9																		
	12	10	12	43	25	24	26	26	3	RTWN - S26	B6000ZZ	STWN - S10																
			1526	43	25	24	26	26	3																			
	BTN BTNM	1526	15	46	26	21	21	32	11	4	RTWN - S32	B6002ZZ	STWN - S15															
														1528	48	28	41	23	60	32								
	15	20	26	95	58	30	75	47	11	4.5	RTWN - S47	B6204ZZ	STWN - S20															
														25	30	105	68	35	66	25	85	52						

Stoppers for Ball Screws



BSTP
BSTS (Thin Wall Type)

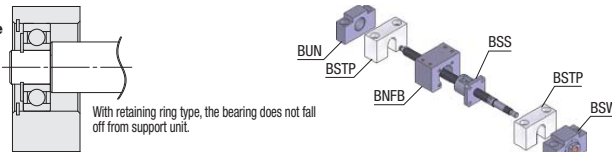


Material: Ether-based Polyurethane
Hardness: Shore A90

Part Number	Type	No.	B	H	h	P	V	BSTP				BSTS				BSTP		BSTS	
								T	d ₁	d ₂	ℓ	T ₁	d ₃	d ₄	ℓ ₁	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount
BSTP BSTS (Thin Wall Type)	6	6	42	25	13	30	12	20	9.5	5.5	5.5	13	8	4.5	15				
		8	52	32	17	38	14	11	6.5	6.5	15	9.5	5.5	17					
	1022	70	10	40	22	16	25	14	9	9	18	11	6.5	23					
			1223	41	23	52	18												
	12	80	12	43	25	18	30	17	11	11	20	14	9	30					
			1526	46	26	30	33												
	1528	95	15	48	28	22	28	33											
			20	50	30	75	28	38											
	25	105	25	58	35	28	35	38											
			25	68	35	85	35												

Order Example Part Number BUN15 BSTP15
Days to Ship 6 Days P87

EX Example



Raydent products are filled with Low Particulate Grease and for cleanrooms.

Support Units · Square

-Fixed Side With Damper/ Support Side With Damper-

CAD Data

Support Units with Damper integrate the Stopper for Ball Screw and the Support Unit, therefore, it fits in space-saving.

Support Units - Fixed Side with Damper



Type	Material	Surface Treatment
BSWD	1.1191/C45E	Black Oxide

d25 is not counterbored.

Component Details

No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Angular Contact Bearing Class 5	1 Set
(3)	Cover	1
(4)	Collar	1
(5)	Clamping Nut (With Set Piece)	1
(6)	Oil Seal	2
(7)	Urethane Damper (Shore A70)	1

*4 Mounting Holes

Do not disassemble (1), (2) and (3), as they must remain as an assembled unit. *4 Mounting Holes

(7) is adhesive bonded to housing. For No. 10S, the inner diameter of oil seal is smaller than the previous type.

Part Number	Type	No.	d	L	L ₁	L ₂	L ₃	B	H	h	B ₁	H ₁	P	d ₁	d ₂	ℓ	M (Fine)	Oil Seal Applicable Shaft Dia.	Damper Dimensions					€ Unit Price	Volume Discount
																			a	b	c	r	t		
BSWD	1022	10	24	6	29.5	6	70	40	22	32	35	52	9	14	11	M10x1.0	14	34	10	6	12	10			
																									12
	12	12	12	41	23	36	22	80	46	26	35	40	60	11	17	15	M12x1.0	20	46	12	7	15.5			
																									1526
	15	15	25	48	13	59	14	105	56	30	45	75	85	11	-	-	M25x1.5	31	60	19	10	25			
																									1528
	20	20	26	95	58	30	75	47	56	30	75	47	85	11	-	-	M20x1.0	25	50	15	10	18			
																									25

Support Units - Support Side with Damper

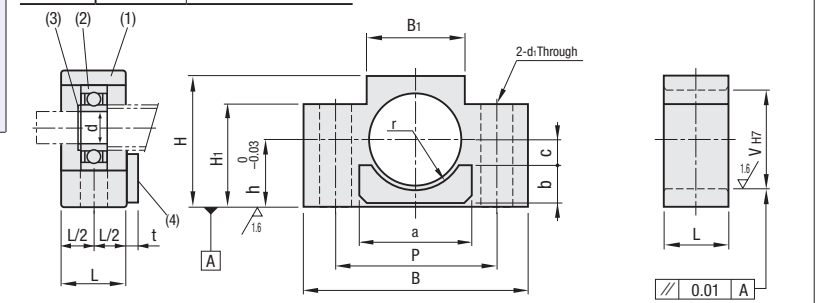


Type	Material	Surface Treatment
BUND	1.1191/C45E	Black Oxide

Component Details

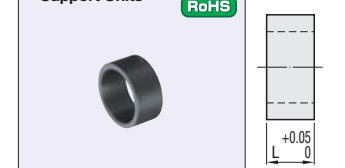
No.	Part Name	Quantity
(1)	Housing	1
(2)	Radial Bearing	1
(3)	Retaining Ring	1
(4)	Urethane Damper (Shore A70)	1

(4) is adhesive bonded to housing.

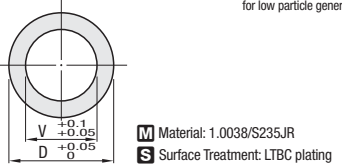


Part Number	Type	No.	d	L	B	H	h	B ₁	H ₁	P	V	d ₁	Damper Dimensions					Bearings Type	Retaining Ring	€ Unit Price	Volume Discount			
													a	b	c	r	t					Qty. 1-9	Qty. 10-	
BUND	1022	10	24	6	29.5	6	70	40	22	32	35	52	9	14	11	M10x1.0	14	34	10	6	12	10		
	12	12	12	41	23	36	22	80	46	26	35	40	60	11	17	15	M12x1.0	20	46	12	7	15.5		
	15	15	25	48	13	59	14	105	56	30	45	75	85	11	-	-	M25x1.5	31	60	19	10	25		
	20	20	26	95	58	30	75	47	56	30	75	47	85	11	-	-	M20x1.0	25	50	15	10	18		

Precision Collars for Support Units



As BUSC is slightly larger than the included collar in outer diameter, it is effective in bearing oil retention. The LTBC plating used helps for low particle generation.



Part Number	Type	No.	D	V	L	€ Unit Price	Volume Discount
BUSC		10	14.5	10	5.5		
		12	15.4	12	5.5		
		15	20.4	15	10		
		20	25.4	20	11		
25	31.3	25	14				

Order Example Part Number BSWD15 BUND15 BUSC15
Days to Ship 6 Days P87 2 Days

For details of Support Units Mounting Interface Accuracies and bearings, refer to P685



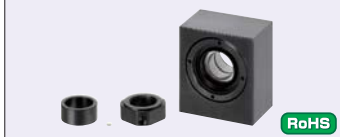
Support Units · Square

-Fixed Side Compact Type/ Fixed Side Low Profile Type/ Fixed Side Mounting Hole Narrow Pitch-

CAD Data

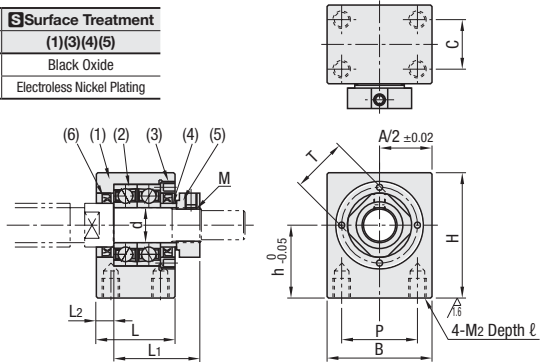
As compact in the height and width comparing to the conventional Support Units, it easily fits in space-saving and is best for small devices.

Support Units - Fixed Side - Compact



Type	Material	Surface Treatment
	(1)(3)	(4)(5)
BSQ	1.1191/C45E	1.0038/S235JR
BSQM		
		Black Oxide
		Electroless Nickel Plating

Most compact in size.



Component Details

No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Angular contact bearing class 0	1 Set
(3)	Cover	1
(4)	Collar	1
(5)	Clamping Nut (With Set Piece)	1
(6)	Oil Seal	2

Do not disassemble (1), (2) and (3), as they must remain as an assembled unit.
For d=8, only one oil seal (6) is provided.
Angular contact bearing class 5 is used for No.8.
For No.10S, the inner diameter of oil seal is smaller than the previous type.

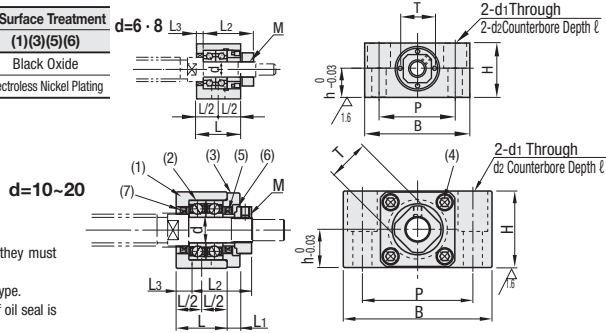
Type	No.	d	L	L1	L2	B	H	h	P	M2	ℓ	C	M (Fine)	T	Oil Seal Applicable Shaft Dia.	BSQ		BSQM	
																€ Unit Price Qty. 1-9	Volume Discount Qty. 10-	€ Unit Price Qty. 1-9	Volume Discount Qty. 10-
BSQ BSQM	8	8	23	26	4	32	32	17	23	5	6	14	M8x1.0	14	11.5				
	10S	10	27	29.5	6	36	43	25	26	6	10	17	M10x1.0	17	12				
	10	12	27	29.5	6	36	43	25	26	6		17	M12x1.0	19	15				
	12	12	27	29.5	6	36	43	25	26	6		17	M12x1.0	19	15				
	15	15	29	38	5	46	52	30	34	6	12	19	M15x1.0	22	20				

Support Units - Fixed Side - Low Profile



Type	Material	Surface Treatment
	(1)(3)	(5)(6)
BSV	1.1191/C45E	1.0038/S235JR
BSVM		
		Black Oxide
		Electroless Nickel Plating

Lowest profile type.



Component Details

No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Angular Contact Bearing Class 5	1 Set
(3)	Cover	1
(4)	Hexagon Socket Head Cap Screw	4
(5)	Collar	1
(6)	Clamping Nut (With Set Piece)	1
(7)	Oil Seal	2

Oil seal (7) is not included when d=6.
d=8 comes with one oil seal (7) only.
Do not disassemble (1), (2) and (3), as they must remain as an assembled unit.
Screws (4) for BSVM are Stainless Steel Type.
For No.8S and 10S, the inner diameter of oil seal is smaller than the previous type.

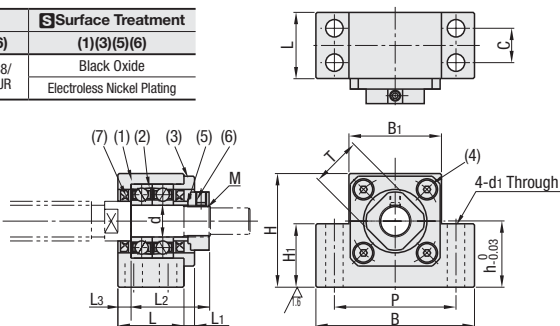
Type	No.	d	L	L1	L2	L3	B	H	h	P	d1	d2	ℓ	M (Fine)	T	Oil Seal Applicable Shaft Dia.	BSV		BSVM	
																	€ Unit Price Qty. 1-9	Volume Discount Qty. 10-	€ Unit Price Qty. 1-9	Volume Discount Qty. 10-
BSV BSVM	6	6	20	-	22.5	3.5	42	22	11	30	5.5	9.5	12	M6x0.75	12	-				
	8S	8	23	-	26	4	52	28	14	38	6.6	11	15	M8x1.0	14	10				
	10S	10	24	6	29.5	6	70	36	18	52	9	14	19	M10x1.0	17	12				
	10	12	24	6	29.5	6	70	36	18	52	9	14	19	M12x1.0	19	15				
	12	12	24	6	29.5	6	70	36	18	52	9	14	19	M12x1.0	19	15				
	15	15	25	6	38	5	80	41	21	60	11	17	21	M15x1.0	22	20				
20	20	42	10	52	10	95	56	28	75	11	17	29	M20x1.0	30	25					

Support Units Fixed Side - Mounting Hole Narrow Pitch



Type	Material	Surface Treatment
	(1)(3)	(5)(6)
BSA	1.1191/C45E	1.0038/S235JR
BSAM		
		Black Oxide
		Electroless Nickel Plating

Compact width design.



Component Details

No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Angular Contact Bearing Class 5	1 Set
(3)	Cover	1
(4)	Hexagon Socket Head Cap Screw	4
(5)	Collar	1
(6)	Clamping Nut (With Set Piece)	1
(7)	Oil Seal	2

Do not disassemble (1), (2) and (3), as they must remain as an assembled unit.
Screws (4) for BSAM are stainless steel type.
For No.10S, the inner diameter of oil seal is smaller than the previous type.
(4) The screw head (4) protrudes 2mm from the cover.

Type	No.	d	L	L1	L2	L3	B	H	h	B1	H1	P	C	d1	M (Fine)	T	Oil Seal Applicable Shaft Dia.	BSA		BSAM	
																		€ Unit Price Qty. 1-9	Volume Discount Qty. 10-	€ Unit Price Qty. 1-9	Volume Discount Qty. 10-
BSA BSAM	10S	10	25	4	29.5	5	60	39	22	34	21	46	13	6.6	M10x1.0	17	12				
	10	12	25	4	29.5	5	60	43	25	35	24	46	13		M12x1.0	19	15				
	12	12	25	4	29.5	5	60	43	25	35	24	46	13		M12x1.0	19	15				
	15	15	27	6	38	6	70	48	28	40	27	54	15		M15x1.0	22	20				



Support Units · Square

-Support Side Compact Type/ Support Side Low Profile Type/ Support Side Mounting Hole Narrow Pitch-

CAD Data

Same dimensions to the fixed side Support Units but compact in the height and width. Use the fixed side Support Units together.

Support Units Support Side - Compact

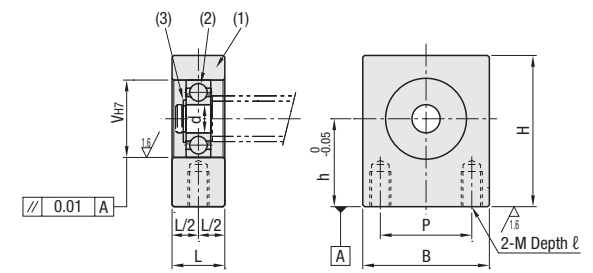


Type	Material	Surface Treatment
BUQ	1.1191/C45E	Black Oxide
BUQM		Electroless Nickel Plating

Component Details

No.	Part Name	Quantity
(1)	Housing	1
(2)	Bearings	1
(3)	Retaining Ring*	1

*Retaining ring (3) of BUQM is stainless steel type.



Type	No.	d	L	B	H	h	P	V	M	ℓ	Bearings Type	Retaining Ring	BUQ		BUQM	
													€ Unit Price Qty. 1-9	Volume Discount Qty. 10-	€ Unit Price Qty. 1-9	Volume Discount Qty. 10-
BUQ BUQM	8	6	15	32	32	17	23	17	5	6	B606ZZ	STWN - S6				
	10	8	22	36	43	25	26	22	6	10	B608ZZ	STWN - S8				
	12	10	20	36	43	25	26	26	6	10	B600ZZ	STWN - S10				
	12	10	20	36	43	25	26	26	6	10	B600ZZ	STWN - S10				
	15	15	46	52	30	34	32	12	12	12	B600ZZ	STWN - S15				

Support Units - Support Side - Low Profile

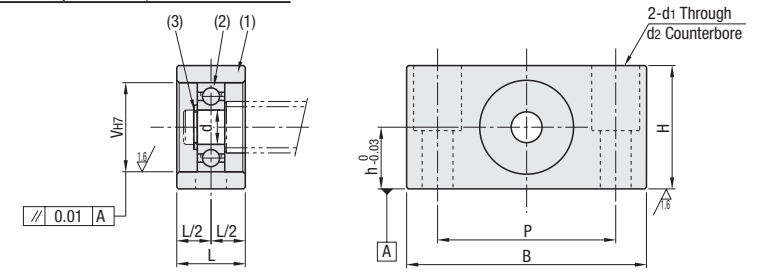


Type	Material	Surface Treatment
BUV	1.1191/C45E	Black Oxide
BUVM		Electroless Nickel Plating

Component Details

No.	Part Name	Quantity
(1)	Housing	1
(2)	Bearings	1
(3)	Retaining Ring*	1

*Retaining ring (3) of BUVM is stainless steel type.



Type	No.	d	L	B	H	h	P	V	d1	d2	ℓ	Bearings Type	Retaining Ring	BUV		BUVM	
														€ Unit Price Qty. 1-9	Volume Discount Qty. 10-	€ Unit Price Qty. 1-9	Volume Discount Qty. 10-
BUV BUVM	6	6	12	42	22	11	30	17	5.5	9.5	12	B606ZZ	STWN - S6				
	8	6	15	52	28	14	38	17	6.6	11	15	B606ZZ	STWN - S6				
	10	8	24	6	29.5	6	70	36	18	52	9	14	19	B608ZZ	STWN - S8		
	12	10	20	70	36	18	52	26	9	14	19	B600ZZ	STWN - S10				
	15	15	20	80	41	21	60	32	11	17	21	B600ZZ	STWN - S10				
	20	20	26	95	56	28	75	47	11	17	29	B620ZZ	STWN - S20				

Support Units Support Side - Mounting Hole Narrow Pitch

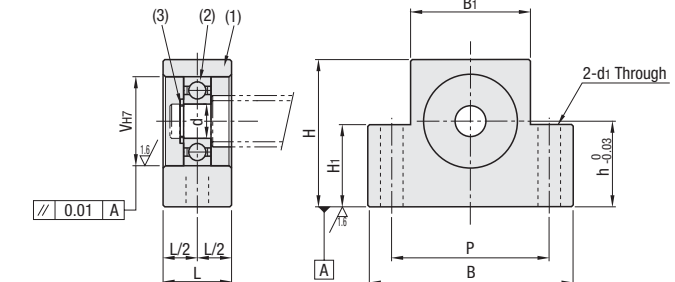


Type	Material	Surface Treatment
BUA	1.1191/C45E	Black Oxide
BUAM		Electroless Nickel Plating

Component Details

No.	Part Name	Quantity
(1)	Housing	1
(2)	Bearings	1
(3)	Retaining Ring*	1

*Retaining ring (3) of BUAM is stainless steel type.



Type	No.	d	L	B	H	h	B1	H1	P	V	d1	Bearings Type	Retaining Ring	BUA		BUAM	
														€ Unit Price Qty. 1-9	Volume Discount Qty. 10-	€ Unit Price Qty. 1-9	Volume Discount Qty. 10-
BUA BUAM	10	8	20	60	39	22	34	21	46	22	6.6	B608ZZ	STWN - S8				
	12	10	20	60	43	25	35	24	46	26		B600ZZ	STWN - S10				
	12	10	20	60	43	25	35	24	46	26		B600ZZ	STWN - S10				
	15	15	20	70	48	28	40	27	54	32		B600ZZ	STWN - S15				

Support Units - Round

-Fixed Side Standard Type / Support Side Type-

Price Reduction
Up to 8%

CAD Data

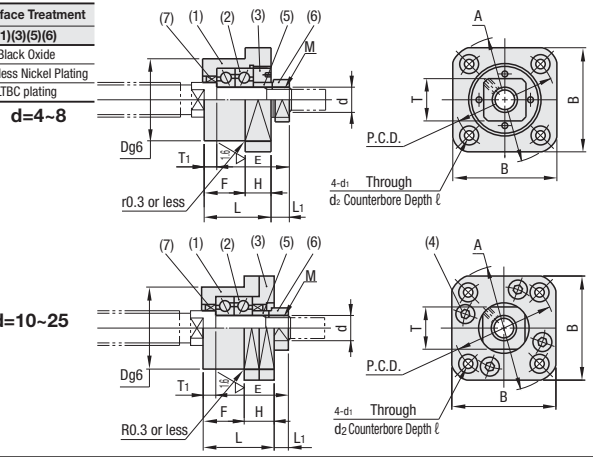
The Standard Type uses the preloaded JIS 5 class Angular Contact Bearings. It is preferable to use for high-accuracy and high-speed precision applications.

Support Units - Fixed Side - Standard Type
(Industry Standard, for High Speed Applications)



Type	Material		Surface Treatment	
	(1)(3)	(5)(6)	(1)(3)(4)(5)	(6)
BRW	1.1191/	1.0038/	Black Oxide	
BRWN	C45E	S235JR	Electroless Nickel Plating	
BRWR			LTBC plating	

For No.8S and 10S, the inner diameter of oil seal is smaller than the previous type.



No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Angular Contact Bearing Class 5	1 Set
(3)	Cover	1
(4)	Hexagon Socket Head Cap Screw	4
(5)	Collar	1
(6)	Clamping Nut (With Set Piece)	1
(7)	Oil Seal	2

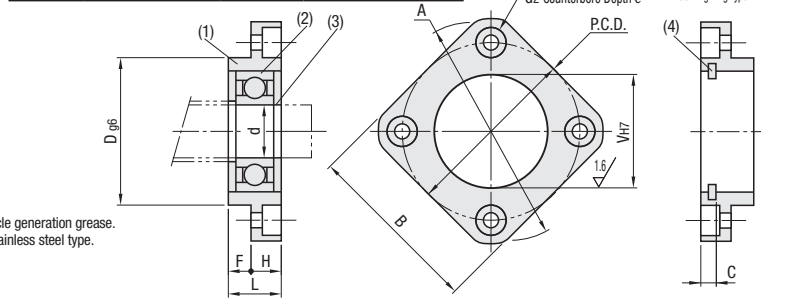
- Oil seal (7) is not included for No. 6.
- No.4, 5, 6L, 8S and 8 come with one oil seal.
- Do not disassemble (1), (2) and (3), as they must remain as an assembled unit.
- BSWR bearing is filled with low particulate generation grease.
- *Screws (4) for BRWR and BRWN are stainless steel type.
- BRW housing pilot section will change to surface coated version at anytime without notice.

Part Number	Type	No.	d	L	H	F	E	D	A	P.C.D.	B	L1	T1	d1	d2	ℓ	M (Fine)	T	Oil Seal Applicable Shaft Dia.	BRW		BRWN		BRWR	
																				€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount
		4	4	15	6	9	18	18	32	24	25		3	3.4	6.5	4	M4x0.5	10	6						
		5	5	16.5	6	10.5	19	20	34	26	26	6	3.5	3.4	6.5	4	M5x0.5	11	8						
		6L	6	20	7	13	22.5	22	36	28	28		3.5	3.4	6.5	4	M6x0.75	12	10						
		6	6	20	7	13	22.5	22	35	28	28		3.5	2.9	5.5	3.5	M6x0.75	12	-						
		8S	8	23	9	14	26	28	43	35	35	7	4	3.4	6.5	4	M8x1.0	14	10						
		8	8	23	9	14	26	28	43	35	35	7	4	3.4	6.5	4	M8x1.0	14	11.5						
		10S	10	29	13	16	29.5	34	52	42	42	5.5	5	4.5	8	6	M10x1.0	17	12						
		10	10	29	13	16	29.5	34	52	42	42	5.5	5	4.5	8	6	M10x1.0	17	14						
		12	12					36	54	44	44						M12x1.0	19	15						
		15	15	32	15	17	38	40	63	50	52	12	6	5.5	9.5	10	M15x1.0	22	20						
		20	20	52	22	30	52	57	85	70	68	10	10	6.6	11	10	M20x1.0	30	25						
		25	25	57	27	30	59	63	98	80	79	12	10	9	15	13	M25x1.5	35	31						

Support Units - Fixed Side



Type	Material	Surface Treatment
Standard	1.1191/C45E	Black Oxide
With Retaining Ring		Electroless Nickel Plating
BUR		LTBC plating
BURM		
BURR		



No.	Part Name	Quantity
(1)	Housing	1
(2)	Radial Bearing	1
(3)(4)	Retaining Ring*	1

- BURR bearing is stainless steel type filled with low particle generation grease.
- *Retaining ring (3), (4) of BURR · BURM and BTRM are stainless steel type.

Part Number	Type	No.	d	L	H	F	D	A	P.C.D.	B	V	d1	d2	ℓ	Retaining Ring Type		Bearings Type	Retaining Ring
															C	Retaining Ring		
		6	6	10	6	4	22	36	28	28	17	3.4	6.5	4	3	RTWN · S17	B606ZZ	STWN · S6
		10	8	12	7	5	28	43	35	35	22	3.4	6.5	4	3	RTWN · S22	B608ZZ	STWN · S8
		12	10	15	7	8	34	52	42	42	26	4.5	8	4	3	RTWN · S26	B6000ZZ	STWN · S10
		15	15	17	9	8	40	63	50	52	32	5.5	9.5	5.5	4	RTWN · S32	B6002ZZ	STWN · S15
		20	20	20	11	9	57	85	70	68	47	6.6	11	6.5	4.5	RTWN · S47	B6204ZZ	STWN · S20
		25	25	24	14	10	63	98	80	79	52	9	14	8.5	4.5	RTWN · S52	B6205ZZ	STWN · S25

Order Example: Part Number BRW15 BUR15

Days to Ship: 6 Days

No.	BUR		BURM		BURR		BTR		BTRM	
	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount
6										
10										
12										
15										
20										
25										

Support Units - Round

-Fixed Side Economy Type / Fixed Side Radial Bearing Type-

Price Reduction
Up to 4%

CAD Data

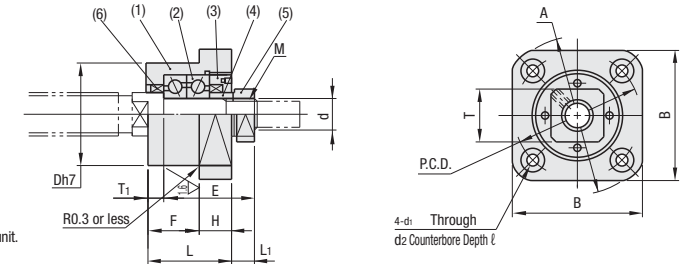
MISUMI Original Economy Type uses the angular contact bearing class 0 and economical than the Standard Type. For features P685

Support Units Fixed Side - Economy
(Economical, for intermediate and low speed applications)



Type	Material		Surface Treatment	
	(1)(3)	(4)(5)	(1)(3)(4)(5)	(6)
BRWE	1.1191/C45E	1.0038/	Black Oxide	
BRWEM		S235JR	Electroless Nickel Plating	
BRWER			LTBC plating	

For No.10S, the inner diameter of oil seal is smaller than the previous type.



No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Angular contact bearing class 0	1 Set
(3)	Cover	1
(4)	Collar	1
(5)	Clamping Nut (With Set Piece)	1
(6)	Oil Seal	2

- Do not disassemble (1), (2) and (3), as they must remain as an assembled unit.
- BRWER bearing is filled with low particulate generation grease.

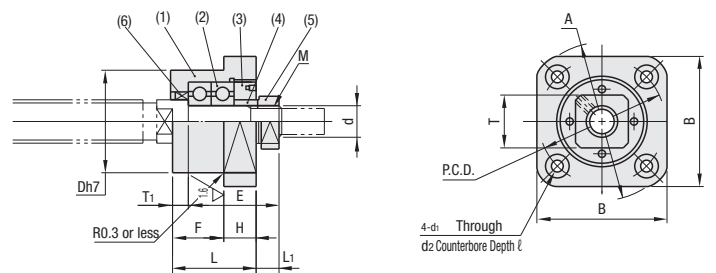
Part Number	Type	No.	d	L	H	F	E	D	A	P.C.D.	B	L1	T1	d1	d2	ℓ	M (Fine)	T	Oil Seal Applicable Shaft Dia.	BRWE		BRWEM		BRWER	
																				€ Unit Price	Volume Discount	€ Unit Price	Volume Discount	€ Unit Price	Volume Discount
		10S	10					34	52	42	42	8.5	5	4.5	8	4.5	M10x1.0	17	12						
		10	10	26	10	16	29.5	36	54	44	44						M12x1.0	19	15						
		15	15	30	13	17	38	40	63	50	52	14	6	5.5	9.5	5.5	M15x1.0	22	20						
		20	20	48	18	30	52	57	85	70	68	10	10	6.6	11	6.5	M20x1.0	30	25						
		25	25	54	24	30	59	63	98	80	79	15	10	9	15	8.5	M25x1.5	35	31						

Support Units - Fixed Side - Radial Bearing



Type	Material	Surface Treatment
BRWZ	1.1191/	Black Oxide
BRWZM	C45E	Electroless Nickel Plating

- Oil seal (6) is not included when d=6.
- For No.8S and 10S, the inner diameter of oil seal is smaller than the previous type.
- It is preloaded to bear the Thrust Load.
- Keep radial bearing rotational speeds to under 3,000rpm.



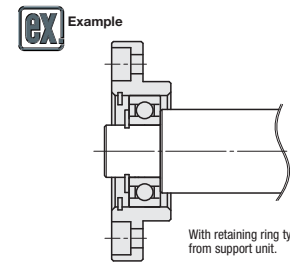
No.	Part Name	Quantity
(1)	Bearing Housing	1
(2)	Radial Bearing	1 Set
(3)	Cover	1
(4)	Collar	1
(5)	Clamping Nut (With Set Piece)	1
(6)	Oil Seal	1

- Do not disassemble (1), (2) and (3), as they must remain as an assembled unit.

Part Number	Type	No.	d	L	H	F	E	D	A	P.C.D.	B	L1	T1	d1	d2	ℓ	M (Fine)	T	Oil Seal Applicable Shaft Dia.	BRWZ		BRWZM	
																				€ Unit Price	Volume Discount	€ Unit Price	Volume Discount
		6	6	20	7	13	22.5	22	35	28	28	6	3.5	2.9	5.5	3.5	M6x0.75	12	-				
		8S	8	23	9	14	26	28	43	35	35	7	4	3.4	6.5	4	M8x1.0	14	10				
		8	8	23	9	14	26	28	43	35	35	7	4	3.4	6.5	4	M8x1.0	14	11.5				
		10S	10					34	52	42	42	8.5	5	4.5	8	4.5	M10x1.0	17	12				
		10	10	26	10	16	29.5	36	54	44	44						M12x1.0	19	15				
		15	15	30	13	17	38	40	63	50	52	14	6	5.5	9.5	5.5	M15x1.0	22	20				
		20	20	48	18	30	52	57	85	70	68	10	10	6.6	11	6.5	M20x1.0	30	25				

Order Example: Part Number BRWE15 BRWZ15

Days to Ship: 6 Days



- For details of Support Units Mounting Interface Accuracies and bearings, refer to P685
- Raydent products are filled with Low Particulate Grease and for cleanrooms.

For details of Support Units Mounting Interface Accuracies and bearings, refer to P685
Raydent products are filled with Low Particulate Grease and for cleanrooms.

