

Ball Splines

Both Ends Stepped and Threaded

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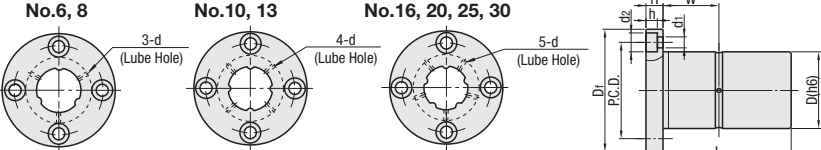


RoHS10

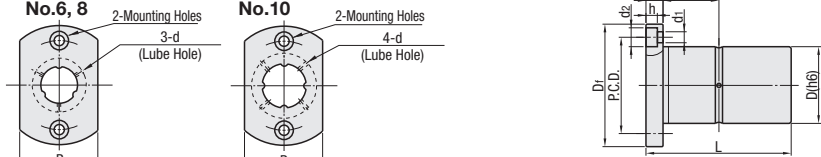
Both Ends Stepped and Threaded	Spline Shafts \square SU2 Equivalent Nut \square SCM15 Equivalent \square Hardness: 58HRC -	Spline Shaft, Nut \square Material: SUS440C Equivalent \square Hardness: 55HRC -
	Nut 1 pc.	Nut 1 pc.
With Round Flange Nut	BSYM	BSYMS
With Compact Flange Nut	BSYN	-
With Straight Nut	BSYS	-

When selecting Overall Length (L Dimension), check the Annealing Range. \square P.340
Accuracy \square P.339 For the included nut, please select a shape from below.

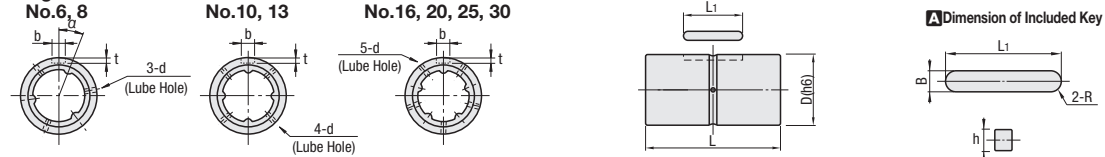
Round Flange Nuts



Compact Flange Nuts



Straight Nuts



* Please refrain from machining the nuts as it may have adverse effects on the accuracy.
* The key is press-fit into the nut.
Dimension of Included Key

Spline Shafts

Part Number	No.	L	1mm Increment		F, E	B, S	P, Q Selection	M (Coarse) / N (Coarse) Selection (M \geq P, N \geq Q)	D	(Y) 1-Nut Type min-max	Mass (kg/m)
			1-Nut Type	F, E							
BSYM	*6	60-400(190)					3 4 5	3 4 5	6	52-392(182)	0.23
	*8	60-400(190)					4 5 6	4 5 6	8	52-392(182)	0.39
	*10	60-600(390)	When P, Q=3	2 \leq B, S \leq M, N \times 3			4 5 6 8	4 5 6 8	10.4	52-592(382)	0.65
	*13	60-600(390)	When P, Q=4	2 \leq B, S \leq M, N \times 4			5 6 8 10	5 6 8 10	13.4	52-592(382)	1.11
	*16	70-600(390)	When P, Q \geq 5	2 \leq B, S \leq M, N \times 5			5 6 8 10 12 13	6 8 10 12	16.6	62-592(382)	1.65
	20	70-700	When P, Q \geq 5	4 \leq F, E \leq P, Q \times 5	B-S \geq Pitch \times 3 \pm 0.1	For SUS materials, M, N \leq 8, S \leq 11, N \leq 4	8 10 12 13 15 16	6 8 10 12 16	20.6	72-692	2.57
BSYN	25	90-900	4 \leq F, E \leq B, S \pm 2			8 10 12 13 15 16 20	6 8 10 12 16 20	25.8	82-892	4.04	
	30	100-1150				10 12 13 15 16 20 25	8 10 12 16 20 24	30.8	92-1142	5.85	

For BSYMS, only * marked sizes are available, and the Max. L and Y dimensions are in ().
For BSYN, only No. 6, 8 and 10 are available.

Round Flange Nuts, Compact Flange Nuts

No.	D (h6)	L	Df	H	P.C.D.	d1	d2	h	W	d	B	Basic Rated Torque		Basic Load Rating		Allowable Static Moment		Mass (kg)
												Dynamic Co (N·m)	Static Co (N·m)	Dynamic Co (kN)	Static Co (kN)	M01 (N·m)	M02 (N·m)	
6	14		30	6	22	3.5	6	3.1	6.5		18	3.8	7	1.2	2.1	5	36	0.03
8	16		32	6	24						21	4.8	8.7	1.2	2.1	5	36	0.04
10	21	40(33)	42(41)	6(8)	32(30)			4.4(5.3)	14(8.5)	1.5	25	19(11)	34(21)	3.8(2.4)	6.9(4.3)	26(15)	181(102)	0.09
13	24	44(36)	44(45)	7(8)	33(34)	4.5	8		15(10)			28(20)	52(37)	4.6(3.3)	8.3(5.9)	36(22)	251(148)	0.11
16	31	50	51	7	40			4.4	18			51	93	6.2	11.1	56	386	0.2
20	35	63	58	9	45	5.5	9.5	5.4	22.5	2	-	85	154	8.5	15.3	83	611	0.3
25	42	71	65	9	52			26.5				193	348	15.4	27.7	173	1248	0.4
30	47	80	75	10	60	6.6	11	6.5	30	2.5		272	490	18.5	33.3	212	1581	0.57

Dimensions in () are for SUS440C Equivalent. Allowable static moment M01 is a value measured when a single nut is used, and M02 is a value measured when two nuts are used.

Straight Nuts

No.	D (h6)	L	b	Tolerance	t	+0.05/0	d	α	Basic Rated Torque		Basic Load Rating		Allowable Static Moment		Mass (kg)	Dimensions of Key (Included)			
									Dynamic Co (N·m)	Static Co (N·m)	Dynamic Co (kN)	Static Co (kN)	M01 (N·m)	M02 (N·m)		M01 (kN)	M02 (kN)	B	Tolerance
6	14							15°	3.8	7	1.2	2.1	5	36	0.012	2.5	0	10.5	1.25
8	16	25	2.5	+0.014	1.2			25°	4.8	8.7	1.2	2.1	5	36	0.013			10.5	
10	21	40(33)	3	0	1.5	1.5			19(11)	34(21)	3.8(2.4)	6.9(4.3)	26(15)	181(102)	0.06			17(14)	
13	24	44(36)							28(20)	52(37)	4.6(3.3)	8.3(5.9)	36(22)	251(148)	0.07			17(14)	
16	31	50	3.5		2				51	93	6.2	11.1	56	386	0.15	3.5		18	1.75
20	35	63							85	154	8.5	15.3	83	611	0.2			29	
25	42	71	4	+0.018	2.5	2			193	348	15.4	27.7	173	1248	0.29			33	2
30	47	80			2.5				272	490	18.5	33.3	212	1581	0.37			42	

Dimensions in () are for SUS440C Equivalent. Allowable static moment M01 is a value measured when a single nut is used, and M02 is a value measured when two nuts are used.

Part Number	Type	No.	Unit Price																		
			Min. L ~150	L151 ~200	L201 ~300	L301 ~400	L401 ~500	L501 ~600	L601 ~700	L701 ~800	L801 ~900	L901 ~1000	L1001 ~1150								
BSYM		6																			
		8																			
		10																			
		13																			
		16																			
		20																			
BSYN		6																			
		8																			
		10																			
		13																			
		16																			
		20																			
BSYS		6																			
		8																			
		10																			
		13																			
		16																			
		20																			

Part Number	Type	No.	Unit Price						Additional Price for 2-Nut Type												
			Min. L ~150	L151 ~200	L201 ~250	L251 ~300	L301 ~350	L351 ~390	Round Flange Nuts	Compact Flange Nuts	Straight Nuts										
BSYMS		6																			
		8																			
		10																			
		13																			
		16																			
		20																			

Alterations Part Number - L - F - E - B - S - P - Q - M - N - (SC-FC-NTW)
BSYS8 - 250 - F26 - E20 - B8 - S8 - P6 - Q6 - M6 - N6 - SC15

Alterations	Wrench Flats	Set Screw Flat	Additional Spline Nuts
	SC	FC	NTW
Code	SC	FC	NTW
Spec.	Adds a wrench flat. SC=1mm Increment SC+ $\ell_1 \leq L$	Adds a set screw flat. Ordering Code FC10-A8 FC, A=1mm Increment FC $\leq 3 \times D$ When 1.5 $\times D < FC$, FC $\leq Y/2$ A=0 or A ≥ 2	Adds a nut. (from one nut to two nuts) Only available for BSYS, BSYM and BSYN.

When selecting multiple alteration additions, more than 2mm is needed between each feature to be added.

Ordering Example Part Number - L - F - E - B - S - P - Q - M - N
BSYS8 - 250 - F20 - E20 - B8 - S8 - P6 - Q6 - M6 - N6
BSYS8L - 250 - F20 - E20 - B8 - S8 - P6 - Q6 - M6 - N6
Alternative grease types available. For Days to Ship, Price and Performance, see P.340

Cautions for Ball Spline Assembly

- Check Assembly Position**
Match Mark No.'s are entered on nuts and spline shafts (see diagram on right).
When re-assembling, match the character orientations of Match Mark No.'s, and positional relationship.
- Tolerance for Mating Bores**
An H7 tolerance is recommended for mating bores for the spline nuts.