

Ball Splines

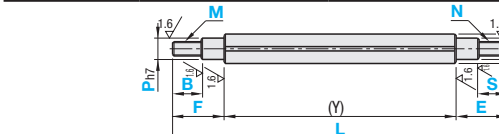
Both Ends Stepped and Threaded

Both Ends Stepped and Threaded



RoHS10

Both Ends Stepped and Threaded	Spline Shafts EN 1.3595 Equiv. Nut EN 1.7242 Equiv. Hardness: 55HRC ~	Spline Shaft, Nut Material: EN 1.4125 Equiv. Hardness: 55HRC ~
	Nut 1 pc.	Nut 1 pc.
	With Round Flange Nut BSYM	BSYMS
	With Compact Flange Nut BSYN	-
	With Straight Nut BSYS	-



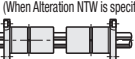
$$6.3 \sqrt[3]{(1.6/0.4)^G}$$

Flanged Nut Orientation

1 Nut Type



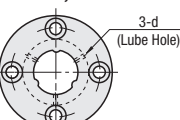
2 Nut Type (When Alteration NTW is specified)



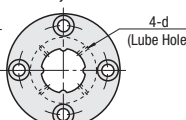
When selecting Overall Length (L Dimension), check the Annealing Range. P340
Accuracy P339 For the included nut, please select a shape from below.

Round Flange Nuts

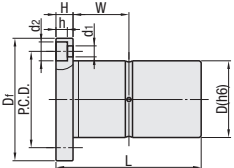
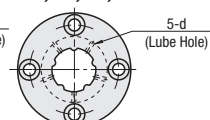
No.6, 8



No.10, 13

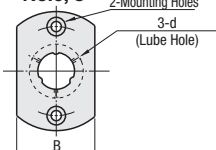


No.16, 20, 25, 30

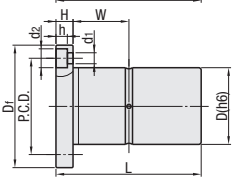
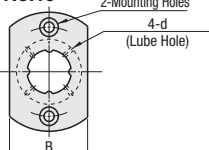


Compact Flange Nuts

No.6, 8

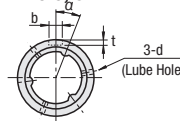


No.10

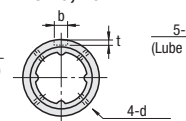


Straight Nuts

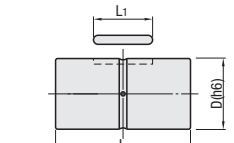
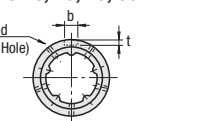
No.6, 8



No.10, 13



No.16, 20, 25, 30



* The key is press-fit into the nut.

Dimension of Included Key

* Please refrain from machining the nuts as it may have adverse effects on the accuracy.

Spline Shafts

Part Number		1mm Increment								P, Q Selection				M (Coarse) / N (Coarse) Selection (M≤P, N≤Q)				D		(Y)		Mass (kg/m)					
Type	No.	L		F, E	B, S													D	1-Nut Type min~max								
		1-Nut Type																									
BSYM BSYN BSYS BSYMS	*6	60~400(190)		When P, Q=3 4≤F, E≤9 When P, Q=4 4≤F, E≤16 When P, Q=5 4≤F, E≤P, Qx5 F, E≤B, Sx2 For Stainless Steel materials M, N, d1, d2, h, W, B, S, L, L1	When M, N=3 2≤B, S≤M, Nx3 When M, N=4 2≤B, S≤M, Nx4 When M, N=5 2≤B, S≤M, Nx5 B * S≤Pitchx3+L S≤L, N≤d	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)				4	5	6	8				4	5	6	8				10.4	52~392(382)	0.65					
	*13	60~600(390)				5	6	8	10				5	6	8	10				13.4	52~592(382)	1.11					
	*16	70~600(390)				5	6	8	10	12	13				6	8	10	12				16.6	62~592(382)	1.65			
	20	80~700				8	10	12	13	15	16				6	8	10	12	16				20.6	72~692	2.57		
	25	90~900				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 BSYM, 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 C _t (N·m)	Static C _t (N·m)	Dynamic C _t (kN)	Static C _t (kN)	M ₀₁ (N·m)	M ₀₂ (N·m)	
6	14	25	30	6	22	3.5	6	3.1	6.5	18	18	3.8	7	1.2	2.1	5	36	0.03
8	16		32		24					21	21	4.8	8.7	1.2	2.1	5	36	0.04
10	21	40(33)	42(41)	6(8)	32(30)	4.5	8	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)							28(20)	52(37)	4.6(3.3)	8.3(5.9)	36(22)	251(148)	0.11
16	31	50	51	7	40	5.5	9.5	5.4	18	2		51	93	6.2	11.1	56	386	0.2
20	35	63	58	9	45							85	154	8.5	15.3	83	611	0.3
25	42	71	65		52	6.5	11	6.5	30	2.5		193	348	15.4	27.7	173	1248	0.4
30	47	80	75	10	60							272	490	18.5	33.3	212	1581	0.57

Dimensions in () are for EN 1.4125 Equiv.

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 C _t (N·m)	Static C _t (N·m)	Dynamic C _t (kN)	Static C _t (kN)	M01 (N·m)	M02 (N·m)		B	Tolerance	h	Tolerance	L1	R
6	14	25	2.5	+0.014 0	1.2	1.5	15°	3.8	7	1.2	2.1	5	36	0.012	2.5	+0.016 +0.006	2.5	0 -0.025	10.5	1.25
8	16				25°		4.8	8.7	1.2	2.1	5	36	0.013							
10	21	40(33)	3	+0.018 0	1.5	2	-	19(11)	34(21)	3.8(2.4)	6.9(4.3)	26(15)	181(102)	0.06	3	+0.024 +0.012	3	0 -0.030	17(14)	1.5
13	24	44(36)			28(20)			52(37)	4.6(3.3)	8.3(5.9)	36(22)	251(148)	0.07							
16	31	50	3.5	+0.018 0	2	2	-	51	93	6.2	11.1	56	386	0.15	3.5	+0.024 +0.012	3.5	0 -0.030	18	1.75
20	35	63			85			154	8.5	15.3	83	611	0.2							
25	42	71	4	+0.018 0	2.5	2.5	-	193	348	15.4	27.7	173	1248	0.29	4	+0.024 +0.012	4	0 -0.030	33	2
30	47	80			272			490	18.5	33.3	212	1581	0.37							

Dimensions in () are for EN 1.4125 Equiv.

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		Unit Price										
Type	No.	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											
	25											
BSYN	6											
	8											
	10											
	13											
	16											
BSYS	6											
	8											
	10											
	13											
	16											
	20											
	25											
	30											

Part Number		Unit Price					
Type	No.	Min. L ~150	L151 ~200	L201 ~250	L251 ~300	L301 ~350	L351 ~390
BSYMS	6						
	8						
	10						
	13						
	16						

No.	Additional Price for 2-Nut Type		
	Round Flange Nuts	Compact Flange Nuts	Straight Nuts
6			
8			
10			
13			
16			
20			
25			
30			



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
	Adds a wrench flat. SC=1mm Increment SC+L1≤L	Adds a set screw flat. FC=1mm Increment FC, A=1mm Increment FC≤3xD When 1.5xD<FC, FC≤Y/2 A=0 or A≥2	Adds a nut. (from one nut to two nuts) Only available for BSYM, BSYN and BSYM.
Spec.	No. W L1 6 5 8 8 7 8 10 8 8 13 11 10 16 14 10 20 17 15 25 22 15 30 27 15	No. h 6 6 8 8 10 1 13 1 16 1 20 2 25 2 30 2	No. h 6 6 8 8 10 1 13 1 16 1 20 2 25 2 30 2

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



Part Number - L - F - E - B - S - P - Q - M - N
BSYS8 - 250 - F20 - E20 - B8 - S8 - P6 - Q6 - M6 - N6
BSYS8G - 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 P340

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.

