

Ball Splines

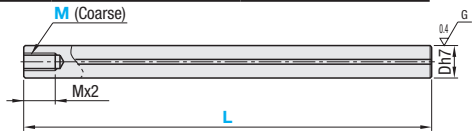
One End Tapped

One End Tapped



RoHS10

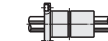
One End Tapped	Spline Shafts EN 1.3305 Equiv. Nut EN 1.7242 Equiv. Hardness: 50HRC~	Spline Shaft, Nut Material: EN 1.4125 Equiv. Hardness: 50HRC~
	Nut 1 pc.	Nut 1 pc.
With Round Flange Nut	BSFM	BSFMS
With Compact Flange Nut	BSFN	-
With Straight Nut	BSFS	-



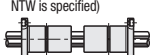
When selecting Overall Length (L Dimension), check the Annealing Range. P.340
Accuracy P.339 For the included nut, please select a shape from below.

Flanged Nut Orientation

1 Nut Type

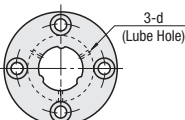


2 Nut Type (When Alteration NTW is specified)

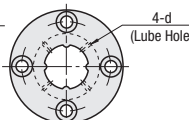


Round Flange Nuts

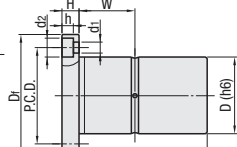
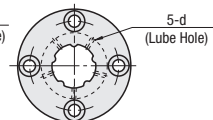
No.6, 8



No.10, 13

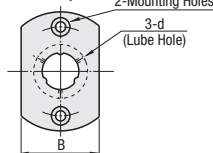


No.16, 20, 25, 30

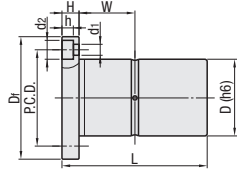
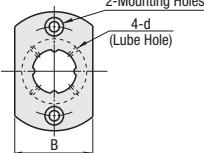


Compact Flange Nuts

No.6, 8

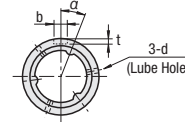


No.10

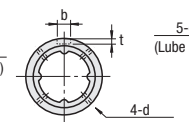


Straight Nuts

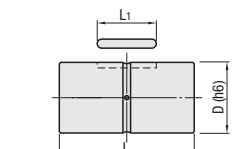
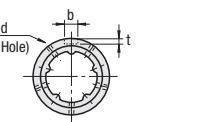
No.6, 8



No.10, 13

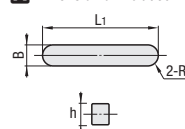


No.16, 20, 25, 30



* The key is press-fit into the nut.

Dimension of Included Key



Spline Shafts

Part Number	L 1mm Increment	M (Coarse) Selection	D	Mass (kg/m)
Type	No.	1-Nut Type		
BSFM BSFN BSFS BSFMS	*6	60~400(190)	3	0.23
	*8	60~400(190)	3	0.39
	*10	60~600(390)	3	0.65
	*13	60~600(390)	4	1.11
	*16	70~600(390)	4	1.65
	20	80~700	5	2.57
	25	90~900	5	4.04
	30	100~1150	6	5.85
			8	
			10	
			12	
			16	

For BSFMS, only * marked sizes are available, and the Max. L dimension is in ().

For BSFN, 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 Dynamic C _i (N·m)	Static C _o (N·m)	Basic Load Rating Dynamic C _i (kN)	Static C _o (kN)	Allowable Static Moment M ₀₁ (N·m)	M ₀₂ (N·m)	Mass (kg)
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)			4.4(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	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 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	d	α	Basic Rated Torque Dynamic C _i (N·m)	Static C _o (N·m)	Basic Load Rating Dynamic C _i (kN)	Static C _o (kN)	Allowable Static Moment M ₀₁ (N·m)	M ₀₂ (N·m)	Mass (kg)	Dimensions of Key (Included)
6	14						15°	3.8	7	1.2	2.1	5	36	0.012	
8	16	25	2.5	+0.014	1.2	1.5	25°	4.8	8.7	1.2	2.1	5	36	0.013	
10	21	40(33)	3	0				19(11)	34(21)	3.8(2.4)	6.9(4.3)	26(15)	181(102)	0.06	
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		2			51	93	6.2	11.1	56	386	0.15	
20	35	63						85	154	8.5	15.3	83	611	0.2	
25	42	71	4	+0.018	2.5	2		193	348	15.4	27.7	173	1248	0.29	
30	47	80				2.5		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
BSFM	6					-	-	-	-	-	-	-
	8					-	-	-	-	-	-	-
	10							-	-	-	-	-
	13							-	-	-	-	-
	16							-	-	-	-	-
	20							-	-	-	-	-
	25								-	-	-	-
BSFN	30										-	-
	6					-	-	-	-	-	-	-
	8					-	-	-	-	-	-	-
BSFS	10							-	-	-	-	-
	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
BSFMS	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		-	



Alterations



Part Number - L - M - (SC, FC, NTW)
BSFS10 - 350 - M5 - SC15



Ordering Example

Part Number - L - M
BSFS10 - 350 - M5

BSFS10G - 350 - M5

BSFS10L - 350 - M5

Alternative grease types available.

For Days to Ship, Price and Performance, see P.340

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+L1≤L	Adds a set screw flat. Ordering Code FC10-A8 FC, A=1mm Increment FC≤3xD 1.5xD<FC >> FC≤L/2 A=0 or A≥2	Adds a nut. (from one nut to two nuts) Applicable to BSFS, BSFN and BSFN only.

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

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.

