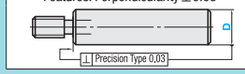
Shafts

One End Threaded with Undercut

High Precision Linear Shafts for High Precision Assembly
Features: Perpendicularity ⊥0.03



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For products uncovered by the e-Catalog Standards, see P.131.

■For High Precision Linear Shafts with high perpendicular precision of the shaft end (⊥ 0.03), see P.243. ■For Shafts With Wrench Flats, see P.197.

RoHS

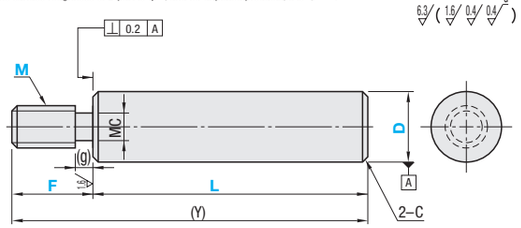
- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm). P.142
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.141
- Features of Low Temp. Black Chrome Plating P.156

Type			Material	Hardness	Surface Treatment
D Tol. g6	D Tol. h5	D Tol. f8			
SAFN	SFNU	-	SUJ2	Effective Hardened Depth of Induction Hardening P.142 SUJ2 58HRC~ SUS440C Equivalent 56HRC~	-
SSAFN	SSFNU	-	SUS440C Equivalent		
PSAFN	PSFNU	-	SUJ2		Hard Chrome Plating - Plating Hardness: HV750 ~, Plating Thickness: 5μ or More
PSSAFN	PSSFNU	-	SUS440C Equivalent		
RSAFN	-	-	SUJ2		Low Temp. Black Chrome Plating
-	-	PSAGN	S45C Equivalent	-	Hard Chrome Plating - Plating Hardness: HV750 ~, Plating Thickness: 10μ or More
-	-	PSSAGN	SUS304		

For plated products, the surface roughness of D part is 0.4; and for unplated products, it is 0.4 6.

6.3 (1.6 0.4 0.4 6)

D	D Tol. g6	D Tol. h5	D Tol. f8
8	-0.005 -0.014	0 -0.006	-0.013 -0.035
10			
12	-0.006 -0.017	0 -0.008	-0.016 -0.043
13			
15			
16			
18			
20	-0.007 -0.020	0 -0.009	-0.020 -0.053
25			
30			
35	-0.009 -0.025	0 -0.011	-0.025 -0.064
40			
50			



Part Number Type	D	L	F	M (Coarse)	(Y) Max.	C
(D Tol. g6) SAFN (D Tol. h5) SFNU	8	25~ 995	5≤F≤Mx3	6	800	0.5 or Less
	10	25~ 995		6 8	800	
	12	25~1195		6 8 10	1000	
SSAFN SSFNU	13	25~1195		6 8 10 12	1000	
PSAFN PSFNU	15	25~1195		6 8 10 12	1000	
PSSAFN PSSFNU	16	25~1195		6 8 10 12	1200	
RSAFN (D≤30,L≤500)	18	25~1195		6 8 10 12 16	1200	
(D Tol. f8) PSAGN	20	25~1195		6 8 10 12 16	1200	1.0 or Less
PSSAGN	25	25~1195		8 10 12 16 20 24	1200	
	30	25~1495		8 10 12 16 20 24	1500	
	35	25~1495		10 12 16 20 24 30	1500	
	40	25~1495		12 16 20 24 30	1500	
	50	25~1495	F-(g)≥Pitchx3	16 20 24 30	1500	

1mm Increments

Coarse Thread Undercut Dimensions

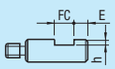
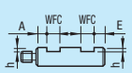
M	Pitch	MC	(g)
6	1.0	4.4	2
8	1.25	6.0	3
10	1.5	7.7	
12	1.75	9.4	4
16	2.0	13.0	
20	2.5	16.4	5
24	3.0	19.6	
30	3.5	25.0	

Ordering Example

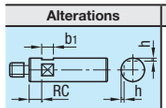
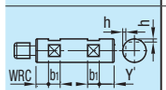
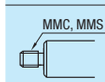
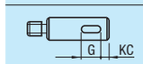
Part Number	-	L	-	F	-	M
SAFN13	-	200	-	F20	-	M10
SFNU13	-	800	-	F23	-	M10

Alterations

Part Number	-	L	-	F	-	M(MMC, MMS)	-	(LKC…etc.)
SAFN30	-	250	-	F20	-	M10	-	LKC

Alterations	Code	Spec.
	LKC	Alteration to L dimension tolerance Ordering Code LKC Application Notes L dimensions can be specified in 0.1mm increment for LKC. L<200 …L±0.03 200≤L<500…L±0.05 L≥500 …L±0.1
	FC	Set Screw Flat at One Location Ordering Code FC10-E8 FC, E=1mm Increment D≤30:FC≤5xD,D≥35:FC≥3xD E=0 or E≥2 Not available in combination with WFC. D / h: 8~18 / 1; 20~40 / 2; 50 / 3
	WFC	Set Screw Flats at Two Locations Ordering Code WFC8-A8-E4 WFC, A, E=1mm Increment D≤30:WFC≤5xD,D≥35:WFC≥3xD A(E)=0 or A(E)≥2 Orientation between set screw flats is not coplanar. Not available in combination with FC. D / h: 8~18 / 1; 20~40 / 2; 50 / 3

Alteration Details P.143

Alterations	Code	Spec.
	RC	90-deg. Set Screw Flat at One Location Ordering Code RC10 Application Notes Only applicable to D=10 ~ 30. Not available in combination with WRC.
	WRC	90-deg. Set Screw Flats at Two Locations Ordering Code WRC10-Y10 Application Notes Only applicable to D=10 ~ 30. Not available in combination with RC. Orientation between two set screw flats is not coplanar.
	MMC MMS	Change to Fine Thread Ordering Code MMC14 (M is changed to MMC) MMS14 (M is changed to MSC)
	KC	Add keyway at one location. Ordering Code KC10-G10 Application Notes Only applicable to D=12, 16, 20, 25 and 30.

For details, see Shaft Alteration Overview. P.143

- Please see Shaft Alteration Overview for details if provided. P.143
- When selecting multiple alteration additions, the distance between machined areas should be greater than 2mm.
- Alterations may lower hardness. See P.142

Part Number Type	D	Min. L ~ 50	L51 ~ 100	L101 ~ 150	L151 ~ 200	L201 ~ 250	L251 ~ 300	L301 ~ 350	L351 ~ 400	L401 ~ 450	L451 ~ 500	L501 ~ 550	L551 ~ 600	L601 ~ 650	L651 ~ 700	L701 ~ 750	L751 ~ 800	L801 ~ 850	L851 ~ 900	L901 ~ 950	L951 ~ 1000	L1001 ~ 1100	L1101 ~ 1200	L1201 ~ 1300	L1301 ~ 1400	L1401 ~ 1495
SAFN SFNU	8																					-	-	-	-	-
	10																					-	-	-	-	-
	12																							-	-	-
	13																							-	-	-
	15																							-	-	-
	16																							-	-	-
	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									
SSAFN SSFNU	8																					-	-	-	-	-
	10																					-	-	-	-	-
	12																							-	-	-
	13																							-	-	-
	15																							-	-	-
	16																							-	-	-
	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									
PSAFN PSFNU	8																					-	-	-	-	-
	10																					-	-	-	-	-
	12																							-	-	-
	13																							-	-	-
	15																							-	-	-
	16																							-	-	-
	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									
PSSAFN PSSFNU	8																					-	-	-	-	-
	10																					-	-	-	-	-
	12																							-	-	-
	13																							-	-	-
	15																							-	-	-
	16																							-	-	-
	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									

For D tolerance h5, add the relevant surcharge to the prices above.

Part Number Type	D	Min. L ~ 100	L101 ~ 200	L201 ~ 400	L401 ~ 600	L601 ~ 800	L801 ~ 1000	L1001 ~ 1200	L1201 ~ 1495
PSAGN	8						-	-	-
	10						-	-	-
	12, 13							-	-
	15, 16								-
	18, 20								-
	25								-
	30								
	35								
	40								
	50								
PSSAGN	8						-	-	-
	10						-	-	-
	12, 13							-	-
	15, 16								-
	18, 20								-
	25								-
	30								
	35								
	40								
	50								

Part Number Type	D	Min. L ~ 50	L51 ~ 100	L101 ~ 150	L151 ~ 200	L201 ~ 300	L301 ~ 400	L401 ~ 500
RSAFN	8							
	10							
	12							
	13							
	15							
	16							
	18							
	20							
	25							
	30							