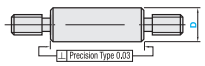
Shafts
Both Ends Threaded with Undercuts

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


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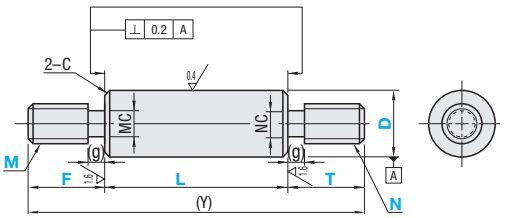
■For High Precision Linear Shafts with high perpendicular precision of the shaft end (⊥ 0.03), see P.239.

Type			Material	Hardness	Surface Treatment
D Tol. g6	D Tol. h5	D Tol. f8			
SAFM	SFMU	-	SUJ2 Equivalent	Effective Hardened Depth of Induction Hardening P.142	-
SSAFM	SSFMU	-	SUS440C or 13Cr stainless		
PSAFM	PSFMU	-	SUJ2 Equivalent		Hard Chrome Plating - Plating Hardness: HV750 ~, Plating Thickness: 5μ or More
PSSAFM	PSSFMU	-	SUS440C or 13Cr stainless	SUJ2 Equivalent 58HRC~ SUS440C or 13Cr stainless 56HRC~	Low Temp. Black Chrome Plating
RSAFM	-	-	SUJ2 Equivalent		
-	-	PSAGM	S45C Equivalent	-	Hard Chrome Plating - Plating Hardness: HV750 ~, Plating Thickness: 10μ or More
-	-	PSSAGM	SUS304		

For plated products, the surface roughness of D part is $\frac{0.4}{}$; and for unplated products, it is $\frac{0.4}{}$ G.

$\frac{6.3}{}$ ($\frac{1.6}{}$ $\frac{0.4}{}$ $\frac{0.4}{}$ G)



D Tol.			
D	g6	h5	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			

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

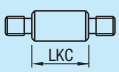
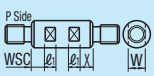
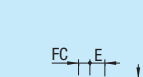
Part Number Type	D	1mm Increments L	F, T	Selection M, N (Coarse)	(Y) Max.	C
(D Tol. g6) SAFM SSAFM PSAFM PSSAFM RSAFM (D≤30,L≤500,Ymax≤800) (D Tol. f8) PSAGM PSSAGM / (D Tol. h5) SFMU SSFMU PSFMU PSSFMU	8	25~ 990	5≤F≤Mx3 5≤T≤Nx3 F-(g)≥Pitchx3 T-(g)≥Pitchx3	6	800	0.5 or Less
	10	25~ 990		6 8	800	
	12	25~1190		6 8 10	1000	
	13	25~1190		6 8 10 12	1000	
	15	25~1190		6 8 10 12	1000	
	16	25~1190		6 8 10 12	1200	
	18	25~1190		6 8 10 12 16	1200	
	20	25~1190		6 8 10 12 16	1200	1.0 or Less
	25	25~1190		8 10 12 16 20 24	1200	
	30	25~1490		8 10 12 16 20 24	1500	
	35	25~1490		10 12 16 20 24 30	1500	
	40	25~1490		12 16 20 24 30	1500	
	50	25~1490		16 20 24 30	1500	

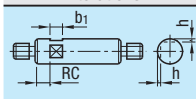
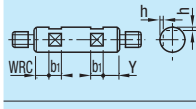
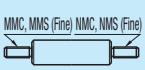
Coarse Thread Undercut Dimensions			
M N	Pitch	MC NC	(g)
6	1.0	4.4	2
8	1.25	6.0	3
10	1.5	7.7	
12	1.75	9.4	4
16	2.0	13.0	
20	2.5	16.4	5
24	3.0	19.6	
30	3.5	25.0	

Ordering Example: Part Number - L - F - M - T - N

Alterations: Part Number - L - F - M(MMC, MMS) - T - N - (LKC…etc.)
SAFM30 - 300 - F40 - M20 - T48 - N16 - LKC

Alteration Details P.143

Alterations	Code	Spec.
	LKC	Alteration to L dimension tolerance Ordering Code LKC 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
	WSC	Wrench Flats at Two Locations Ordering Code WSC12-X8 WSC, X = 1mm Increment WSC+X+ℓ1x2<L WSC(X)≥0 Orientation between two set screw flats is not coplanar. D: 8 10 12 13 15 16 18 / W: 7 8 10 11 13 14 16 / ℓ1: 8 10 D: 20 25 30 35 40 50 / W: 17 22 27 30 36 41 / ℓ1: 10 15 20
	FC	Set Screw Flat at One Location Ordering Code FC10-E8 FC, A=1mm Increment D≤30:FC≤5xD, D≥35:FC≥3xD A=0 or A≥2 Not available in combination with WFC. D: 8~18 / 20~40 / 50 — h: 1 / 2 / 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: 8~18 / 20~40 / 50 — h: 1 / 2 / 3

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 NMC NMS	Change to Fine Thread Ordering Code MMC14 (M is changed to MMC) MMS14 (M is changed to MMS) NMC14 (N is changed to NMC) NMS14 (N is changed to NMS)

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. P.144

Alterations may lower hardness. See P.142.