

Shafts

One End Threaded One End Tapped with Undercut

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 ($\perp 0.03$), see **P.233**. For Shafts with Wrench Flats / Cross-Drilled Hole, see **P.175**.

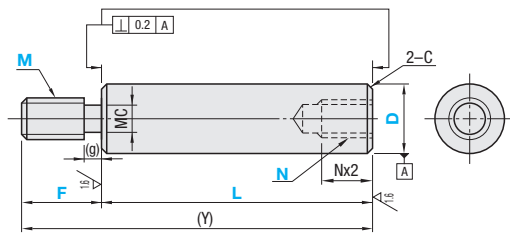


Type			Material	Hardness	Surface Treatment
D Tol. g6	D Tol. h5	D Tol. f8			
SAFD	SFDU	-	SUJ2 Equivalent	Effective Hardened Depth of Induction Hardening P.142	Hard Chrome Plating - Plating Hardness: HV750 - Plating Thickness: 5µ or More
SSAFD	SSFUDU	-	SUS40C or 13Cr stainless		
PSAFD	PSFDU	-	SUJ2 Equivalent	SUJ2 Equivalent 58HRC-SUS40C or 13Cr stainless 56HRC-	Low Temp. Black Chrome Plating
PSSAFD	PSSFDU	-	SUS40C or 13Cr stainless		
RSADF	-	-	SUJ2 Equivalent	S45C Equivalent	Hard Chrome Plating - Plating Hardness: HV750 - Plating Thickness: 10µ or More
-	-	PSAGD	-		
-	-	PSSAGD	SUS304	-	-

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

For plated products, the surface roughness of D part is $\sqrt{0.4}$; and for unplated products, it is $\sqrt{0.6}$.

$\sqrt{0.4} / (\sqrt{15} / \sqrt{0.4} / \sqrt{0.6})$



Part Number	Type	D	L	F
(D Tol. g6)	(D Tol. h5)	8	25~ 995	5≤F≤Mx3
SAFD	SFDU	10	25~ 995	
SSAFD	SSFUDU	12	25~1195	
PSAFD	PSFDU	13	25~1195	
PSSAFD	PSSFDU	15	25~1195	
RSADF	-	16	25~1195	
(D≤30, L≤500)	(D≤30, L≤500)	18	25~1195	
		20	25~1195	
		25	25~1193	
		30	25~1493	
(D Tol. f8)	(D Tol. f8)	35	25~1492	F-g≥Pitchx3
PSAGD	-	40	40~1490	
PSSAGD	-	50	50~1490	

1mm Increments		M (Coarse Selection)			N (Coarse Selection)			(Y) Max.	C
6	8	3	4	5	800	0.5 or Less	1.0 or Less		
6 8	3 4 5 6	800							
6 8 10	4 5 6 8	1000							
6 8 10 12	4 5 6 8	1000							
6 8 10 12	4 5 6 8 10	1000							
6 8 10 12	4 5 6 8 10	1200							
6 8 10 12 16	4 5 6 8 10 12	1200							
6 8 10 12 16	4 5 6 8 10 12	1200							
8 10 12 16 20 24	4 5 6 8 10 12 16	1200							
8 10 12 16 20 24	6 8 10 12 16 20	1500							
10 12 16 20 24 30	8 10 12 16 20 24	1500							
12 16 20 24 30	10 12 16 20 24 30	1500							
16 20 24 30	12 16 20 24 30	1500							

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	
24	3.0	19.6	5
30	3.5	25.0	

Full length L requires Nx2.5+4<L.

Ordering Example: **Part Number** - **L** - **F** - **M** - **N**
SAFD20 - 277 - F25 - M10 - N12

Alterations: **Part Number** - **L** - **F** - **M(MMC, MMS)** - **N(NSC, ND)** - **(LKC...etc.)**
SAFD30 - 250 - F40 - M20 - N20 - 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 → ±0.03 200<L<500 → ±0.05
	WSC	Wrench Flats at Two Locations (Ordering Code) WSC12-X8 WSC, X = 1mm increment WSC+X+δ1x2<L WSC(X)>0 Orientation between two set screw flats is not coplanar.
	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 E2 Not available in combination with WFC.
	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.

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 MMS)
	NSC	Change to Fine Tapped Thread (Ordering Code) NSC14 (N is changed to NSC) Application Notes: Applicable to D=12 or more
	ND	Change the effective length of tapped part to Nx3. (Ordering Code) ND6 (N is changed to ND) Application Notes: Only applicable to D=10~30 and N=6~20 One End Tapped: NDx3.5+7<L

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**.