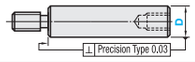
Shafts

One End Threaded One End Tapped with Undercut

High Precision Linear Shafts when high precision assembly is needed
Features: Perpendicularity ⊥0.03



P.203

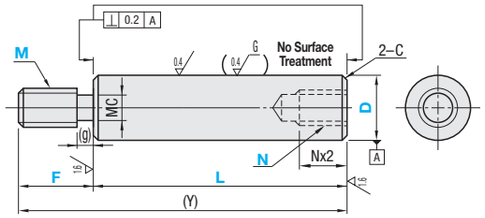
■For High Precision Linear Shafts with high perpendicular precision of the shaft end (⊥ 0.03), see P.203.
■For Shafts with Wrench Flats / Cross-Drilled Hole, see P.147.

RoHS10

- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm). P.112
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.111
- Features of LTBC Plating P.128

Type: D Tol. g6	Type: D Tol. h5	Type: D Tol. f8	Material	Hardness	Surface Treatment
SAFD	SFDU	-	EN 1.3505 Equiv.	Effective Hardened Depth of Induction Hardening P.112	-
SSAFD	SSFDU	-	EN 1.4037 Equiv.		
PSAFD	PSFDU	-	EN 1.3505 Equiv.	EN 1.3505 Equiv. 58HRC~	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 5μ or More
PSSAFD	PSSFDU	-	EN 1.4037 Equiv.	EN 1.4037 Equiv. 56HRC~	
RSAFD	-	-	EN 1.3505 Equiv.		LTBC Plating
-	-	PSAGD	EN 1.1191 Equiv.	-	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 10μ or More
-	-	PSSAGD	EN 1.4301 Equiv.		

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	1mm Increment L	1mm Increment F	M (Coarse) Selection	N (Coarse) Selection	(Y) Max.	C
(D Tolerance g6) SAFD, SSAFD, PSAFD, PSSAFD, RSAFD (D≤30, L≤500) / (D Tolerance h5) SFDU, SSFDU, PSFDU, PSSFDU	8	25~ 795	5≤F≤Mx3	6	3 4 5	800	0.5 or Less
	10	25~ 795		6 8	3 4 5 6	800	
	12	25~ 995		6 8 10	4 5 6 8	1000	
	13	25~ 995		6 8 10 12	4 5 6 8	1000	
	15	25~ 995		6 8 10 12	4 5 6 8 10	1000	
	16	25~1195		6 8 10 12	4 5 6 8 10	1200	
	18	25~1195		6 8 10 12 16	4 5 6 8 10 12	1200	
	20	25~1195		6 8 10 12 16	4 5 6 8 10 12	1200	1.0 or Less
	25	25~1193		8 10 12 16 20 24	4 5 6 8 10 12 16	1200	
(D Tolerance f8) PSAGD, PSSAGD	30	25~1493		8 10 12 16 20 24	6 8 10 12 16 20	1500	
	35	25~1492		10 12 16 20 24 30	8 10 12 16 20 24	1500	
	40	40~1490		12 16 20 24 30	10 12 16 20 24 30	1500	
	50	50~1490		16 20 24 30	12 16 20 24 30	1500	

Coarse Thread Undercut Dimension 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	

- Overall length L requires Nx3≤L.

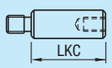
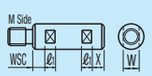
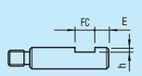
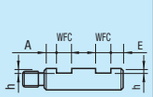
Ordering Example

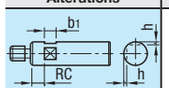
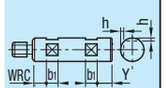
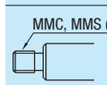
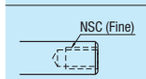
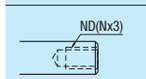
Part Number	-	L	-	F	-	M	-	N
SAFD20	-	277	-	F25	-	M10	-	N12

Alterations

Part Number	-	L	-	F	-	M (MMC, MMS)	-	N (NSC, ND)	-	(LKC…etc.)
SAFD30	-	250	-	F40	-	M20	-	N20	-	LKC

Alteration Details P.113

Alterations	Code	Spec.
	LKC	Alteration to L dimension tolerance Ordering Code LKC ⊗Not applicable when D-M≤2. L dimensions can be specified in 0.1mm increment for LKC. L<200 ···L±0.03 200≤L<500 ···L±0.05
	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 / W / ℓ1: 8 / 7 / 8; 10 / 8; 12 / 10; 13 / 11; 15 / 13; 16 / 14; 18 / 16; 20 / 17 / 10; 25 / 22; 30 / 27 / 15; 35 / 30; 40 / 36 / 20; 50 / 41
	FC	Set Screw Flat at One Location Ordering Code FC10-E8 FC, E=1mm Increment FC≤3xD When 1.5xD<FC, FC≤L/2 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 WFC≤3xD When 1.5xD<WFC, 2WFC≤L/2 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

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=8~30, N=6~20 One End Tapped: NDx3.5+4≥L

For details, see Shaft Alteration Overview. P.113

- Please see Shaft Alteration Overview for details if provided. P.113
- When selecting multiple alteration additions, the distance between machined areas should be greater than 2mm.
- Alterations may lower hardness. See P.112

Part Number Type	D	Unit Price 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 ~ 1493
SAFD SFDU	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
	15																					-	-	-	-	-
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	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									
SSAFD SSFDU	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
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	50																									
PSAFD PSFDU	8																	-	-	-	-	-	-	-	-	-
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PSSAFD PSSFDU	8																	-	-	-	-	-	-	-	-	-
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	40																									
	50																									

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

Part Number Type	D	Unit Price Min. L 100 ~	L101 ~ 200	L201 ~ 400	L401 ~ 600	L601 ~ 800	L801 ~ 1000	L1001 ~ 1200	L1201 ~ 1493
PSAGD	8						-	-	-
	10						-	-	-
	12, 13							-	-
	15, 16								-
	18, 20								-
	25								-
	30								
	35								
	40								
	50								
PSSAGD	8						-	-	-
	10						-	-	-
	12, 13							-	-
	15, 16								-
	18, 20								-
	25								-
	30								
	35								
	40								
	50								