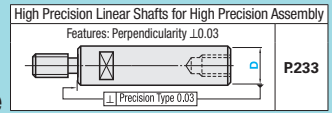


# Shafts

## One End Threaded One End Tapped with Undercut and Wrench Flats / Cross-Drilled Hole

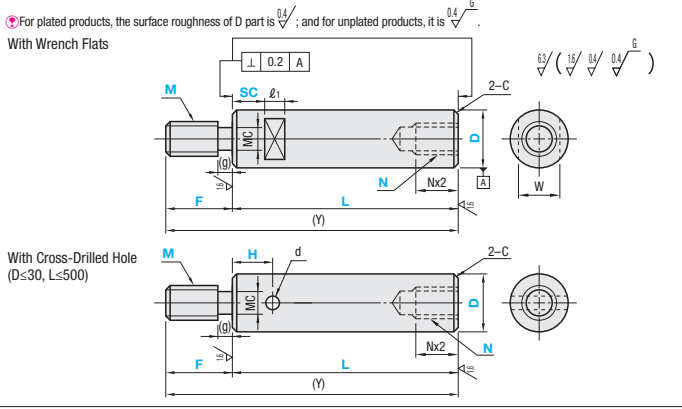


For High Precision Linear Shafts with high perpendicular precision of the shaft end ( $\perp 0.03$ ), see **P.223**. For Shafts w/o Wrench Flats or Cross-Drilled Hole, see **P.173**.



Type				Material	Hardness	Surface Treatment
With Wrench Flats		With Cross-Drilled Hole				
D Tol. g6	D Tol. h5	D Tol. f8	D Tol. f8			
SAFZ	SFBU	-	SAHD	SUU2 Equivalent	Effective Hardened	-
SSAFZ	SSFBU	-	SSAHD	SUS440C or 13Cr stainless	Depth of Induction	-
PSAFZ	PSFBU	-	PSAHD	SUU2 Equivalent	Hardening <b>P.142</b>	Hard Chrome Plating - Plating Thickness: 5µ or More
PSSAFZ	PSSFBU	-	PSSAHD	SUS440C or 13Cr stainless	58HRC	Low Temp. Black Chrome Plating
RSAFZ	-	-	RSAHD	SUU2 Equivalent	SUS440C or 13Cr stainless	58HRC
-	-	PSAGZ	-	PSHGD	S45C Equivalent	-
-	-	PSSAGZ	-	SUS304	-	Hard Chrome Plating - Plating Thickness: 10µ or More

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



Part Number	1mm Increments			M (Coarse) Selection	N (Coarse) Selection	Wrench Flats Dimensions			Cross-Drilled Hole Dimensions			(Y) Max.	C	Coarse Thread Undercut Dimensions			
	Type	D	L			F	SC	W	H	d	H			d	M	Pitch	MC
(With Wrench Flats) (With Cross-Drilled Hole) D:30, L:500	8	25-995		6	3 4 5	7	8	3	800	0.5 or Less	6	1.0	4.4	2			
(Tol. g6) (Tol. h5) (Tol. g6)	10	25-995		6 8	3 4 5 6 8	8		3	800		8	1.25	6.0				
SAFZ SFBU SAHD	12	25-1195		6 8 10	4 5 6 8	10		4	1000		10	1.5	7.7	3			
SSAFZ SSFBU SSAHD	13	25-1195		6 8 10 12	4 5 6 8	11		4	1000		12	1.75	9.4				
PSAFZ PSFBU PSAHD	15	25-1195		6 8 10 12	4 5 6 8 10	13		4	1000		16	2.0	13.0	4			
PSSAFZ PSSFBU PSSAHD	16	25-1195	5sF:Mx3	6 8 10 12	4 5 6 8 10	14		4	1200		20	2.5	16.4	5			
RSAFZ	18	25-1195		6 8 10 12 16	4 5 6 8 10 12	16		4	1200		24	3.0	19.6				
(D:30, L:500) (Tol. f8)	20	25-1195		6 8 10 12 16	4 5 6 8 10 12	17		4	1200		30	3.5	25.0				
PSAGZ SHGD	25	25-1193		8 10 12 16 20 24	4 5 6 8 10 12 16	22		7	1200	1.0 or Less							
PSSAGZ	30	25-1493	F-gPitchC	8 10 12 16 20 24	6 8 10 12 16 20	27		7	1500								
PSSAGZ	35	25-1492		10 12 16 20 24 30	8 10 12 16 20 24	30		7	1500								
	40	40-1490		12 16 20 24 30	10 12 16 20 24 30	36		7	1500								
	50	50-1490		16 20 24 30	12 16 20 24 30	41		7	1500								

Ordering Example: Part Number - L - F - M - N - SC - H

SAFZ20 - 277 - F25 - M10 - N12 - SC10 - H10

SSAHD20 - 277 - F25 - M12 - N12

Alterations Part Number - L - F - M(MMC, MMS) - N(NSC, ND) - SC - H - (LKC...etc.)

SAFZ30 - 250 - F40 - M20 - N20 - SC10 - LKC

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
	SX	Second Set of Wrench Flats (Ordering Code) SK15 (Application Notes) Only applicable to Shafts with Wrench Flats. Flats: SX=1mm Increment SC+SX=φ1x2<L SX>0 Orientation between two set screw flats is not coplanar.
	FC	Set Screw Flat at One Location (Ordering Code) FC10-E8FC. E=1mm Increment D≤30: FC≤5xD D≥35: FC≥3xD E=0 or E≥2 Not available in combination with WFC.
	WFC	Set Screw Flats at Two Locations (Ordering Code) WFC2-48-54 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

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**.