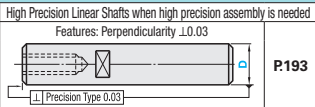


Shafts

One End Tapped with Wrench Flats / Cross-Drilled Hole



- For High Precision Linear Shafts with high perpendicularity precision of the shaft end ($\perp 0.03$), see **P.193**.
- For Shafts w/o Wrench Flats or Cross-Drilled Hole, see **P.123**.



RoHS 10

⚠️ Annealing may lower hardness at wrench flats, cross-drilled hole and shaft end machined areas (effective thread length + approx. 10mm). **P.112**

⚠️ Cross-drilled hole areas may be out of O.D. tolerances due to annealing-induced deformation.

⚠️ L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness **P.111**

⚠️ Features of UTBC Plating **P.128**

Type				Material	Hardness	Surface Treatment	
With Wrench Flats		With Cross-Drilled Hole					
D Tol. g6	D Tol. h5	D Tol. f8	D Tol. g6	D Tol. f8			
SFJC	SFUC	-	SFHC	-	EN 1.3505 Equiv.	Effective Hardened Depth of Induction Hardening P.112	
SSFJC	SSFUC	-	SSFHC	-	EN 1.4125 Equiv.		
PSFJC	PSFUC	-	PSFHC	-	EN 1.3505 Equiv.		
PSSFJC	PSSFUC	-	PSSFHC	-	EN 1.4125 Equiv.		
RSFJC	-	-	RSFHC	-	EN 1.3505 Equiv.	EN 1.3505 Equiv. 58HRC~56HRC	UTBC Plating
-	-	PSFGC	-	PSGHC	EN 1.1191 Equiv.	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 10µ or More	
-	-	PSSFGC	-	-	EN 1.4301 Equiv.		

With Wrench Flats

With Cross-Drilled Hole (8≤D≤30, L≤500)

D Tol.			
D	g6	h5	f8
6	-0.004 -0.012	0 -0.005	-0.010 -0.028
8	-0.005 -0.014	0 -0.006	-0.013 -0.035
10	-0.006 -0.017	0 -0.008	-0.016 -0.043
12	-0.007 -0.020	0 -0.009	-0.020 -0.053
13	-0.009 -0.025	0 -0.011	-0.025 -0.064
15			
16			
18			
20			
25			
30			
35			
40			
50			

Part Number		L		M (Coarse) Selection		Wrench Flats Dimensions		Cross-Drilled Hole Dimensions		C
Type	D	specified in 1mm Increment				SC	W	H	d	
(With Wrench Flats)	6	20~600	3			5	8	-	-	0.5 or Less
	8	20~800	3 4 5			7				
	10	20~800	3 4 5 6			8				1.0 or Less
	12	20~1000	4 5 6 8			10				
(D Tolerance g6)	13	25~1000	4 5 6 8			11				
(D Tolerance h5)	15	25~1000	4 5 6 8 10			13				
(D Tolerance g6)	16	30~1200	4 5 6 8 10			14				
	18	30~1200	4 5 6 8 10 12			16				
	20	30~1200	4 5 6 8 10 12			17				
	25	35~1200	4 5 6 8 10 12 16			22				
(D Tolerance f8)	30	35~1500	6 8 10 12 16 20			27				
	35	35~1500	8 10 12 16 20 24			30				
	40	50~1500	10 12 16 20 24 30			36				
	50	65~1500	12 16 20 24 30			41				

⚠️ When Mx2.5+4≥L, tap pilot holes may go through.

Ordering Example

Part Number	-	L	-	M	-	SC	-	H
SFJC10	-	200	-	M5	-	SC6	-	
SFHC20	-	425	-	M8	-		-	H20

Alterations

Part Number	-	L	-	M (MSC, MD)	-	SC	-	H	-	(LKC...etc.)
SFJC30	-	250	-	M12	-	SC10	-		-	LKC

Alteration Details **P.113**

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 L≥500 → ±0.1
	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.
	WFC	Set Screw Flats at Two Locations (Ordering Code) WFC8-A8-E2 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.
	SX	Second Set of Wrench Flats (Ordering Code) SX15 (Application Notes) Only applicable to Shafts with Wrench Flats. SX=1mm Increment ⚠️ SC+SX+L1x2<L ⚠️ SX≥0 ⚠️ Orientation between two set screw flats is not coplanar.

Alterations	Code	Spec.
	MSC	Change to Fine Tapped Thread (Ordering Code) MSC14 (M is changed to MSC) (Application Notes) Applicable to D=12 or more
	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.
	KC	Add keyway at one location. (Ordering Code) KC10-G10 (Application Notes) Only applicable to D=12, 16, 20, 25 and 30.
	MD	Change the effective length of tapped part to Mx3. (Ordering Code) MD6 (M is changed to MD) (Application Notes) Only applicable to D=6~30, M=6~20 ⚠️ One End Tapped: MDx3.5+4≥L

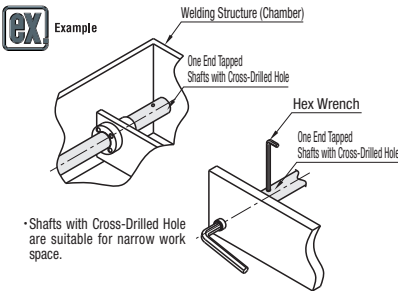
⚠️ Please see Shaft Alteration Overview for details if provided. **P.113**

⚠️ When selecting multiple alteration additions, the distance between machined areas should be greater than 2mm.

⚠️ The distance between wrench flats and cross-drilled holes should be greater than 2mm for alterations.

⚠️ Alterations may lower hardness. See **P.112**.

Part Number		Unit Price															
Type	D	Min. L	L51	L101	L151	L201	L251	L301	L351	L401	L451	L501	L551	L601	L651	L701	L751
SFJC ⚠️ SFUC ⚠️ SFHC	6	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
	8																
	10																
	12																
	13																
	15																
	16																
	18																
	20																
	25																
SSFJC ⚠️ SSFUC ⚠️ SSFHC	6																
	8																
	10																
	12																
	13																
	15																
	16																
	18																
	20																
	25																
PSFJC ⚠️ PSFUC ⚠️ PSFHC	6																
	8																
	10																
	12																
	13																
	15																
	16																
	18																
	20																
	25																
PSSFJC ⚠️ PSSFUC ⚠️ PSSFHC	6																
	8																
	10																
	12																
	13																
	15																
	16																
	18																
	20																
	25																



Shafts with Cross-Drilled Hole are suitable for narrow work space.

Part Number		Unit Price						
Type	D	Min. L	L101	L201	L401	L601	L801	L1001
PSFGC ⚠️ PSGHC	6	100	200	400	600	800	1000	1200
	8							
	10							
	12, 13							
	15, 16							
	18, 20							
	25							
	30							
	35							
	40							

Part Number		Unit Price						
Type	D	Min. L	L101	L201	L401	L601	L801	L1001
PSSFGC	6	100	200	400	600	800	1000	1200
	8							
	10							
	12, 13							
	15, 16							
	18, 20							
	25							
	30							
	35							
	40							