


# High Precision Linear Shafts

## One End Tapped / One End Tapped with Wrench Flats

This type of Shaft is suitable for being used in environments where combination of high perpendicular precision ( $\perp 0.03$ ) and high accuracy is required.

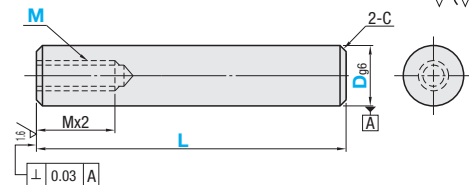


Type		D Tol.	Material	Hardness	Surface Treatment
W/o Wrench Flats	With Wrench Flats				
VFJT	VFJC	g6	SUJ2 Equivalent SUS440C or 13Cr stainless	Induction Hardened Effective Hardened Depth $\geq$ P.142	Hard Chrome Plating Plating Hardness HV750 ~ Plating Thickness: 5 $\mu$ or More Low Temp. Black Chrome Plating
VSFJT	VSFJC				
VPFJT	VPFJC				
VPSFJT	VPSFJC				
VRJT	VRJC				

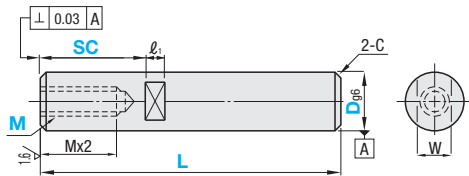
D Tol.	
D	g6
4	
5	-0.004 -0.012
6	
8	-0.005 -0.014
10	
12	
13	
15	-0.006 -0.017
16	
18	
20	
25	-0.007 -0.020
30	

For plated products, the surface roughness of D part is  $\sqrt{0.4}$ ; and for unplated products, it is  $\sqrt{0.4}$ .  
 $\sqrt{0.4}$  /  $\sqrt{1.6}$  /  $\sqrt{0.4}$  /  $\sqrt{0.4}$  /  $\sqrt{0.4}$  /  $\sqrt{0.4}$

**W/o Wrench Flats**



**With Wrench Flats**



**RoHS10**

- Annealing required for wrench flats machining and shaft end threading (effective thread length + approx. 10mm) may lower hardness.  $\geq$  P.142
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness  $\geq$  P.141
- Shafts may have centering holes at end faces.
- Features of Low Temp. Black Chrome Plating  $\geq$  P.156

Part Number Type	D	L specified in 1mm Increments	M (Coarse) Selection	Wrench Flats Dimensions			c
				SC	W	l <sub>1</sub>	
(W/o Wrench Flats) (D4~D30)	4	25~200	2	-	-	-	0.2 or Less
(With Wrench Flats) (D6~D30)	5	25~300	2.6 3				0.5 or Less
	6	20~350	3				
	8	20~350	3 4 5				
	10	20~400	3 4 5 6				
	12	20~400	4 5 6 8				
	13	20~400	4 5 6 8				
	15	20~400	4 5 6 8 10				
	16	20~400	4 5 6 8 10				
	18	20~400	4 5 6 8 10 12				
	20	25~500	4 5 6 8 10 12				
	25	25~500	4 5 6 8 10 12 16				1.0 or Less
	30	25~500	6 8 10 12 16 20				

For overall length L, when  $Mx2.5+4 \geq L$ , tap pilot holes may go through.




**Ordering Example**




Part Number	L	M	SC
VFJT20	100	M8	SC10
VFJC20	100	M8	SC10

**Alterations**

Part Number	L	M(MSC, MD)	SC	(LKC...etc.)
VFJC20	100	M8	SC10	LKC
VFJT20	100	M8	SC10	FC10-E8

Alteration Details  $\geq$  P.143

Alterations	Code	Spec.
	LKC	Alteration to L dimension tolerance (Ordering Code) LKC (Application Notes) Applicable when L=200 or less. L dimensions can be specified in 0.1mm increment for LKC. L <sub>200</sub> →L±0.03
	FC	Set Screw Flat at One Location (Ordering Code) FC10-E8 FC, E=1mm Increment FC≤5xD E=0 or A≥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≤5xD A(E)=0 or A(E)≥2 Orientation between set screw flats is not coplanar. Not available in combination with FC.

Alterations	Code	Spec.
	SX	Second Set of Wrench Flats (Ordering Code) SX15 (Application Notes) Applicable to D=6 or more SX=1mm increment SC+SX+l <sub>1</sub> 2<L SX≥0 Orientation between two set screw flats is not coplanar.
	MSC	Change to Fine Tapped Thread (Ordering Code) MSC14 (M is changed to MSC) NSC14 (N is changed to NSC) (Application Notes) Applicable to D=12 or more
	MD	Change the effective length of tapped part to Mx3. (Ordering Code) MD6 (M is changed to MD) (Application Notes) Only applicable to D=10~30 and M=6~20 One End Tapped: MDx3.5+4≤L

- Please see Shaft Alteration Overview for details if provided.  $\geq$  P.143
- 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  $\geq$  P.142.