


# High Precision Linear Shafts

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

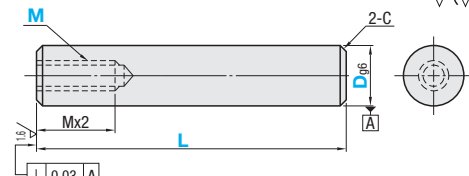
This type of Shaft is suitable for being used in environments where combination of high perpendicular precision ( $\perp 0.03$ ) and high accuracy is required.

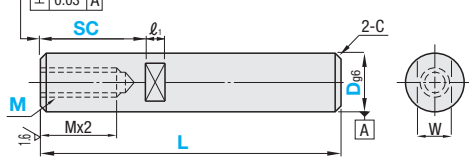
For products uncovered by the e-Catalog Standards, see P.131.



Type		D Tol.	Material	Hardness	Surface Treatment	D Tol.	
W/o Wrench Flats	With Wrench Flats					D	g6
VFJT	VFJC	g6	SUSJ2 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	4	-0.004
VSFJT	VSFJC					5	-0.012
VPFJT	VPFJC					6	
VPSFJT	VPSFJC					8	-0.005
VRJT	VRJC					10	-0.014
						12	
						13	
						15	-0.006
						16	-0.017
						18	
						20	
						25	-0.007
						30	-0.020

For plated products, the surface roughness of D part is  $Ra 0.4$ ; and for unplated products, it is  $Ra 0.8$ .

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. P.142
- Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.141
- Shafts may have centering holes at end faces.
- Features of Low Temp. Black Chrome Plating P.156

Part Number Type	D	L specified in 1mm Increments	M (Coarse) Selection	Wrench Flats Dimensions			c
				SC	W	l1	
(W/o Wrench Flats) (D4-D30) VFJT VSFJT VPFJT VPSFJT VRJT	4	25~200	2	-	-	-	0.2 or Less
	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	5	8	-	
	13	20~400	4 5 6 8	7	8	-	
	15	20~400	4 5 6 8 10	8	10	-	
	16	20~400	4 5 6 8 10	10	10	-	
	18	20~400	4 5 6 8 10 12	11	10	-	
	20	25~500	4 5 6 8 10 12	13	10	-	
	25	25~500	4 5 6 8 10 12 16	14	10	-	
	30	25~500	6 8 10 12 16 20	16	10	-	
				17	10	-	
				22	10	-	
				27	15	1.0 or Less	

SC = 1mm Increment  
 $SC + l_1 \leq L$   
 $SC \geq 0$   
 Details of Wrench Flats P.142

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 P.143

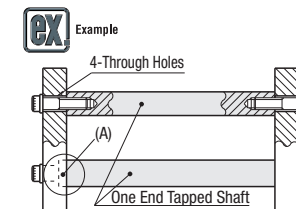
Alterations	Code	Spec.
	LKC	Alteration to L dimension tolerance Ordering Code LKC Application Notes Applicable when L=200 or less. L dimensions can be specified in 0.1mm increment for LKC. L $\leq$ 200 $\rightarrow$ L $\pm$ 0.03
	FC	Set Screw Flat at One Location Ordering Code FC10-E8 FC, E=1mm Increment FC $\leq$ 5xD E=0 or A $\geq$ 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 $\leq$ 5xD A(E)=0 or A(E) $\geq$ 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+ $l_1$ $\leq$ L SX $\geq$ 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 $\leq$ 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.
- The distance between wrench flats and cross-drilled holes should be greater than 2mm for alterations.
- Alterations may lower hardness. See P.142.

Part Number Type	D	Unit Price						
		Min. L 50	L51 100	L101 200	L201 300	L301 450	L451 500	
VFJT	4							
	5							
	6							
	8							
	10							
	12							
	13							
	15, 16							
	18							
	20							
	25							
	30							
	VSFJT	4						
		5						
		6						
		8						
10								
12								
13								
15, 16								
18								
20								
25								
30								
VPFJT		4						
		5						
		6						
		8						
	10							
	12							
	13							
	15, 16							
	18							
	20							
	25							
	30							
	VPSFJT	4						
		5						
		6						
		8						
10								
12								
13								
15, 16								
18								
20								
25								
30								
VRJT		4						
		5						
		6						
		8						
	10							
	12							
	13							
	15, 16							
	18							
	20							
	25							
	30							

Part Number Type	D	Unit Price						
		Min. L 50	L51 100	L101 200	L201 300	L301 450	L451 500	
VFJC	6							
	8							
	10							
	12							
	13							
	15, 16							
	18							
	20							
	25							
	30							
	VSFJC	6						
		8						
		10						
		12						
		13						
		15, 16						
18								
20								
25								
30								
VPFJC		6						
		8						
		10						
		12						
		13						
		15, 16						
	18							
	20							
	25							
	30							
	VPSFJC	6						
		8						
		10						
		12						
		13						
		15, 16						
18								
20								
25								
30								
VRJC		6						
		8						
		10						
		12						
		13						
		15, 16						
	18							
	20							
	25							
	30							



Precision Type does not require stepped machining as (A), which enables effective assembly.

