

High Precision Linear Shafts

Both Ends Tapped / Both Ends 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.



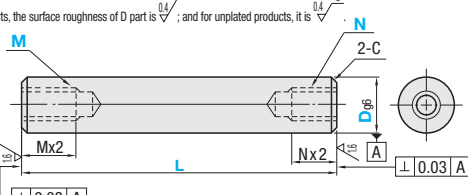
RoHS10

- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm). **P.142**
- Full Length Hardness Guaranteed Shafts **P.155**
- Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness **P.141**
- Features of Low Temp. Black Chrome Plating **P.156**

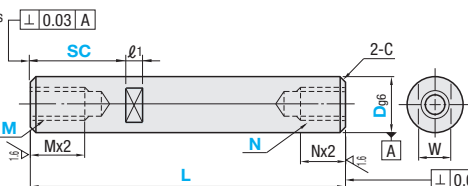
Type		D Tol.	Material	Hardness	Surface Treatment
W/o Wrench Flats	With Wrench Flats				
VFJW	VFJZ	g6	SUJ2	Induction Hardened Effective Hardened Depth P.142 SUJ2 58HRC~ SUS440C Equivalent 56HRC~	Hard Chrome Plating Plating Hardness HV750 ~ Plating Thickness: 5μ or More Low Temp. Black Chrome Plating
VSFJW	VSFJZ				
VPFJW	VPFJZ				
VPSFJW	VPSFJZ				
VRJW	VRJZ				

For plated products, the surface roughness of D part is $\sqrt{0.4}$; and for unplated products, it is $\sqrt{0.6}$.

W/o Wrench Flats



With Wrench Flats



Part Number		L		M (Coarse), N (Coarse) Selection		Wrench Flats Dimensions			C
Type	D	specified in 1mm Increments				SC	W	ℓ ₁	
(W/o Wrench Flats) (D4~D30)	4	25~200	2			-	-	-	0.2 or Less
	5	25~300	2.6	3					
	6	25~350	3						
	8	25~350	3	4	5		5	8	
	10	25~400	3	4	5	6	7	8	
	12	25~400		4	5	6	8		
	13	25~400		4	5	6	8		
	15	25~400		4	5	6	8	10	
	16	25~400		4	5	6	8	10	
	18	25~400		4	5	6	8	10	12
	20	30~500		4	5	6	8	10	12
	25	30~500		4	5	6	8	10	12
	30	30~500		6	8	10	12	16	20
(With Wrench Flats) (D6~30)	4	25~200	2						
	5	25~300	2.6	3					
	6	25~350	3						
	8	25~350	3	4	5		5	8	
	10	25~400	3	4	5	6	7	8	
	12	25~400		4	5	6	8		
	13	25~400		4	5	6	8		
	15	25~400		4	5	6	8	10	
	16	25~400		4	5	6	8	10	
	18	25~400		4	5	6	8	10	12
	20	30~500		4	5	6	8	10	12
	25	30~500		4	5	6	8	10	12
	30	30~500		6	8	10	12	16	20

L requires Mx2+Nx2≤L. When Mx2.5+4+Nx2.5+4≥L, tap pilot holes may go through and the effective length of the smaller tap part may be shortened.

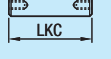
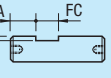
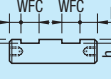
 **Ordering Example**

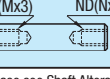
Part Number	-	L	-	M	-	N	-	SC
VFJW20	-	100	-	M8	-	N8	-	SC10
VFJZ20	-	100	-	M8	-	N8	-	SC10

 **Alterations**

Part Number	-	L	-	M(MSC, MD)	-	N(NSC, ND)	-	SC	-	(LKC--etc.)
VFJW20	-	100	-	M8	-	N8	-	SC10	-	LKC
VFJZ20	-	100	-	M8	-	N8	-	SC10	-	FC10-A8

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≤200 → L+0.03
	FC	Set Screw Flat at One Location (Ordering Code) FC10-A8 FC, A=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+SC+ℓ ₁ ×2<L SX≥0 Orientation between two set screw flats is not coplanar.
	MSC (Fine) NSC (Fine)	Change to Fine Tapped Thread (Ordering Code) MSC14 (M is changed to MSC) MSC14 (N is changed to NSC) (Application Notes) Applicable to D=12 or more
	MD (Mx3) ND (Nx3)	Change the effective tap depth to M(N)×3. (Ordering Code) MD6/ND6 (M is changed to MD, N is changed to ND) (Application Notes) Only applicable to D=10~30 and M (N) = 6~20 One End Tapped: MDx3.5+4sL Both Ends Tapped: MDx3.5+4+NDx3.5+4sL

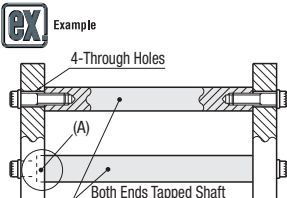
Please see Shaft Alteration Overview for details if provided. **P.143**

When selecting multiple alteration additions, the distance between machined areas should be greater than 2mm. **P.144**

Alterations may lower hardness. See **P.142**.

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

Part Number		Unit Price					
Type	D	Min. L 50	L51 100	L101 200	L201 300	L301 450	L451 500
VFJW	4				-	-	-
	5						
	6						
	8						
	10						
	12						
	13						
	15, 16						
	18						
	20						
	25						
	30						
VSFJW	4				-	-	-
	5						
	6						
	8						
	10						
	12						
	13						
	15, 16						
	18						
	20						
	25						
	30						
VPFJW	4				-	-	-
	5						
	6						
	8						
	10						
	12						
	13						
	15, 16						
	18						
	20						
	25						
	30						
VPSFJW	4				-	-	-
	5						
	6						
	8						
	10						
	12						
	13						
	15, 16						
	18						
	20						
	25						
	30						
VRJW	4				-	-	-
	5						
	6						
	8						
	10						
	12						
	13						
	15, 16						
	18						
	20						
	25						
	30						

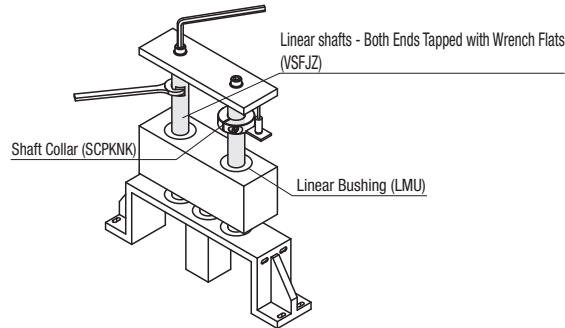


4-Through Holes

Both Ends Tapped Shaft

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

Part Number		Unit Price					
Type	D	Min. L 50	L51 100	L101 200	L201 300	L301 450	L451 500
VFJZ	6						-
	8						-
	10						-
	12						-
	13						-
	15, 16						-
	18						-
	20						-
	25						-
	30						-
VSFJZ	6						-
	8						-
	10						-
	12						-
	13						-
	15, 16						-
	18						-
	20						-
	25						-
	30						-
VPFJZ	6						-
	8						-
	10						-
	12						-
	13						-
	15, 16						-
	18						-
	20						-
	25						-
	30						-
VPSFJZ	6						-
	8						-
	10						-
	12						-
	13						-
	15, 16						-
	18						-
	20						-
	25						-
	30						-
VRJZ	6						-
	8						-
	10						-
	12						-
	13						-
	15, 16						-
	18						-
	20						-
	25						-
	30						-



Linear shafts - Both Ends Tapped with Wrench Flats (VSFJZ)

Shaft Collar (SCPKNK)

Linear Bushing (LMU)