

High Precision Linear Shafts

Both Ends Tapped / Both Ends Tapped with Wrench Flats

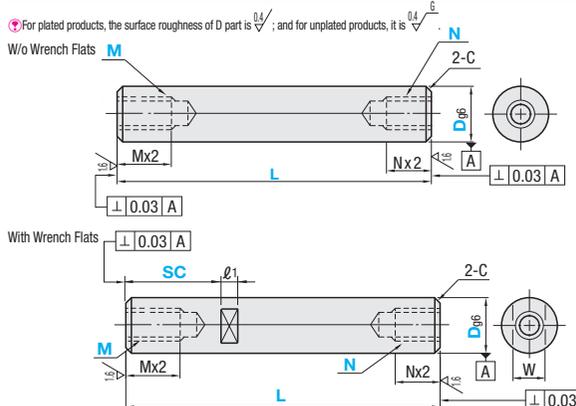
This type of Shaft is suitable for being used in environments where combination of high perpendicular precision ($\perp 0.03$) and high accuracy is required.

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



Type	D Tol.	Material	Hardness	Surface Treatment
W/o Wrench Flats	g6	SUJ2	Induction Hardened Effective	-
VFJW		SUS440C Equivalent		
With Wrench Flats		SUJ2	Hardened Depth \geq P.142	
VSFJW		SUS440C Equivalent		
VPFJW		SUJ2	58HRC~	
VPSFJW		SUS440C Equivalent		
VRJW	SUJ2	56HRC~	Hard Chrome Plating Plating Hardness HV70 ~ Plating Thickness: 5 μ or More Low Temp. Black Chrome Plating	

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



RoHS

- 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

Part Number Type	D	L specified in 1mm increments	M (Coarse), N (Coarse) Selection	Wrench Flats Dimensions			C
				SC	W	l1	
W/o Wrench Flats (D4-D30) VFJW VSFJW VPFJW VPSFJW VRJW	4	25-200	2	-	-	-	0.2 or Less
	5	25-300	2.6 3	-	-	-	0.5 or Less
	6	25-350	3	5	8	8	
	8	25-350	3 4 5	7	10	10	
	10	25-400	3 4 5 6	8	11	11	
	12	25-400	4 5 6 8	10	13	13	
	13	25-400	4 5 6 8	11	14	14	
	15	25-400	4 5 6 8 10	12	16	16	
	16	25-400	4 5 6 8 10	13	17	17	
	18	25-400	4 5 6 8 10 12	14	22	22	
	20	30-500	4 5 6 8 10 12	16	27	27	
	25	30-500	4 5 6 8 10 12 16	17	15	15	
	30	30-500	6 8 10 12 16 20	22	15	15	

SC = 1mm Increment
 \bullet SC+l1 \leq L
 \bullet SC>0
 \bullet Details of Wrench Flats P.142

L requires Mx2+Nx2 \leq L. When Mx2.5+4+Nx2.5+4 \geq 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. \bullet L \leq 200 \rightarrow ± 0.03
	FC	Set Screw Flat at One Location (Ordering Code) FC10-A8 FC, A=1mm Increment \bullet FC \leq 5xD \bullet E=0 or A \geq 2 \bullet Not available in combination with WFC.
	WFC	Set Screw Flats at Two Locations (Ordering Code) WFC8-A8-E2 WFC, A, E=1mm Increment \bullet WFC \leq 5xD \bullet A(E)=0 or A(E) \geq 2 \bullet Orientation between set screw flats is not coplanar. Not available in combination with FC.

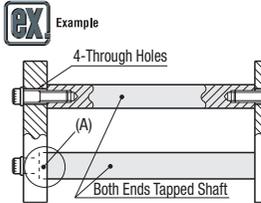
Alterations	Code	Spec.
	SX	Second Set of Wrench Flats (Ordering Code) SX15 Application Notes] Applicable to D=8 or more SX=1mm Increment \bullet SC+SX+l1 \times 2<L \bullet SX>0 \bullet Orientation between two set screw flats is not coplanar.
	MSC (Fine) NSC (Fine)	Change to Fine Tapped Thread (Ordering Code) MSC14 MSC14 (M is changed to MSC) NSC14 (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)x3. (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 \bullet One End Tapped: MDx3.5+4<L \bullet Both Ends Tapped: MDx3.5+4<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. P.144
 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	
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						
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	25							
	30							

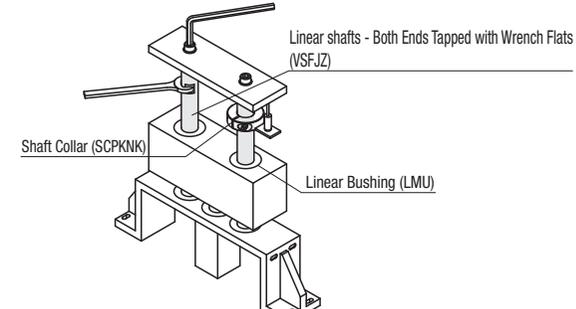
Part Number Type	D	Unit Price						
		Min. L 50	L51 100	L101 200	L201 300	L301 450	L451 500	
VFJZ	6							
	8							
	10							
	12							
	13							
	15, 16							
	18							
	20							
	25							
	30							
	VSFJZ	6						
		8						
		10						
		12						
		13						
		15, 16						
18								
20					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

Example



4-Through Holes
 Shaft Collar (SCPKNK)
 Linear Bushing (LMU)
 Both Ends Tapped Shaft

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



Linear shafts - Both Ends Tapped with Wrench Flats (VSFJZ)
 Shaft Collar (SCPKNK)
 Linear Bushing (LMU)