


High Precision Linear Shafts

Both Ends Threaded with Undercuts / Both Ends Threaded with Undercuts and Wrench Flats

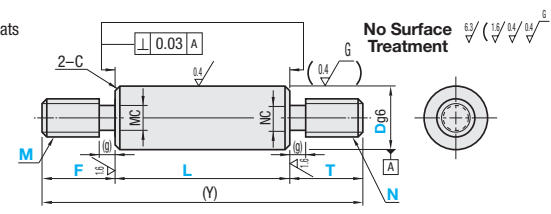
■ Suitable for assemblies of parts requiring high precision and high perpendicular precision of the shaft end ($\perp 0.03$).



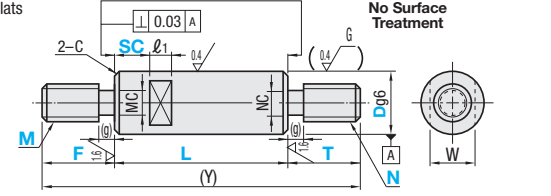
Type		D Tol.	Material	Hardness	Surface Treatment
W/o Wrench Flats	With Wrench Flats				
VAFM	VAFU	g6	SUJ2 Equivalent	Effective Hardened Depth of Induction Hardening P.112	-
VSAFM	VSAFU		SUS440C or 13Cr stainless		
VPAFM	VPAFU	g6	SUJ2 Equivalent	Hard Chrome Plating Plating Hardness: HV750 - Plating Thickness: 5µ or More	-
VPSAFM	VPSAFU		SUS440C or 13Cr stainless		
VRFM	VRFU	g6	SUJ2 Equivalent	58HRC~ 56HRC~	Low Temp. Black Chrome Plating
			SUS440C or 13Cr stainless		

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

W/o Wrench Flats



With Wrench Flats



RoHS10

- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm). P.112
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.111
- Features of Low Temp. Black Chrome Plating P.128

Part Number	Type	1mm Increment		Selection	Wrench Flats Dimensions			(Y) Max.	C	Coarse Thread Undercut Dimension			
		D	L		F, T	M, N (Coarse)	SC			W	l1	M	Pitch
	(W/o Wrench Flats)	8	25-290		6		7	8	300	6	1.0	4.2	2
	(With Wrench Flats)	10	25-340		6 8		8	8	350	8	1.25	6.0	3
VAFM	VAFU	12	25-340	5 ≤ F ≤ M × 3 5 ≤ T ≤ N × 3	6 8 10	SC=1mm Increment SC+l1 ≤ L SC=0	10	10	350	10	1.5	7.7	4
VSAFM	VSAFU	13	25-340		6 8 10		11	10	350	12	1.75	9.4	5
VPAFM	VPAFU	15	25-340		6 8 10 12		13	10	350	16	2.0	13.0	
VPSAFM	VPSAFU	16	25-340		6 8 10 12		14	10	350	20	2.5	16.4	
VRFM	VRFU	18	25-340		6 8 10 12 16		16	10	350	24	3.0	19.6	
		20	25-440		6 8 10 12 16		17	10	450	30	3.5	25.0	
		25	25-440		8 10 12 16 20		22	15	450				
		30	25-440		8 10 12 16 20 24		27	15	450				

F-(g) ≥ Pitch × 3
T-(g) ≥ Pitch × 3

Shaft ends may have centering holes.

Ordering Example: Part Number - L - F - M - T - N - SC
VAFU20 - 200 - F30 - M10 - T20 - N18 - SC8

Alterations: Part Number - L - F - M (MMC, MMS) - T - N (NMC, NMS) - SC - (LKC...etc.)
VAFU30 - 300 - F40 - M20 - T48 - N16 - SC20 LKC

Alterations	Code	Spec.	Alterations	Code	Spec.
	LKC	Alteration to L dimension tolerance Ordering Code LKC Not applicable when D-M(N) ≤ 2. L dimensions can be specified in 0.1mm increment for LKC. L ≤ 200 → L ± 0.03		WFC	Set Screw Flats at Two Locations Ordering Code WFC8-A8-E4 WFC, A, E=1mm Increment WFC ≤ 3 × D When 1.5 × D < 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: Applicable to Shafts with Wrench Flats only SX=1mm Increment SC+SX+l1 ≤ L SX ≥ 0 Orientation between two set screw flats is not coplanar.		MMC MMS NMC NMS	Change to Fine Thread Ordering Code MMC14 (M is changed to MMC) MMS14 (M is changed to MMS) NMC14 (N is changed to NMC) NMS14 (N is changed to NMS)
	FC	Set Screw Flat at One Location Ordering Code FC10-E8 FC, A=1mm Increment FC ≤ 3 × D When 1.5 × D < FC, FC ≤ L/2 A = 0 or A ≥ 2 Not available in combination with WFC.			

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. P.114
 Alterations may lower hardness. P.112

Part Number	Type	D	Unit Price				
			Min. L - 50	L51~100	L101~200	L201~300	L301~440
	VAFM	8					
		10					
		12					
		13					
		15					
		16					
		18					
		20					
		25					
		30					
	VSAFM	8					
		10					
		12					
		13					
		15					
		16					
		18					
		20					
		25					
		30					
	VPAFM	8					
		10					
		12					
		13					
		15					
		16					
		18					
		20					
		25					
		30					
	VPSAFM	8					
		10					
		12					
		13					
		15					
		16					
		18					
		20					
		25					
		30					
	VRFM	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	L301~440
	VAFU	8					
		10					
		12					
		13					
		15					
		16					
		18					
		20					
		25					
		30					
	VSAFU	8					
		10					
		12					
		13					
		15					
		16					
		18					
		20					
		25					
		30					
	VPAFU	8					
		10					
		12					
		13					
		15					
		16					
		18					
		20					
		25					
		30					
	VPSAFU	8					
		10					
		12					
		13					
		15					
		16					
		18					
		20					
		25					
		30					
	VRFU	8					
		10					
		12					
		13					
		15					
		16					
		18					
		20					
		25					
		30					