


High Precision Linear Shafts

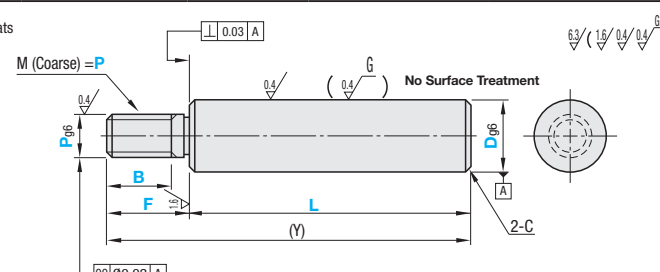
One End Threaded / One End Threaded with Wrench Flats

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

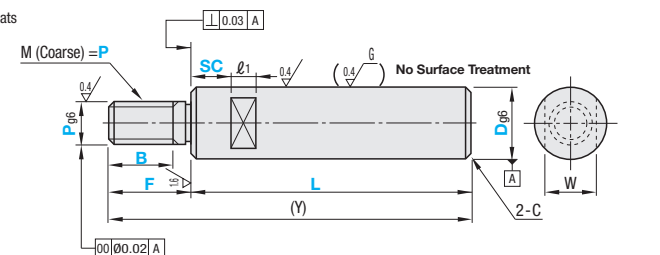


Type		D Tol.	Material	Hardness	Surface Treatment	D Tol.	
W/o Wrench Flats	With Wrench Flats					D	g6
VFBN	VFBS	g6	SUJ2	Induction Hardened Effective Hardened Depth P.112	Hard Chrome Plating Plating Hardness HV750 ~ Plating Thickness: 5µ or More	5	-0.004
VSFBN	VSFBS		SUS440C Equivalent			6	-0.012
VPFBN	VPFBS		SUJ2			8	-0.005
VPSFBN	VPSFBS		SUS440C Equivalent			10	-0.014
VRBN	VRBS		SUJ2			12	-0.006
						15	-0.017
			16	-0.007			
			18	-0.020			
			20				
			25				
			30				

W/o Wrench Flats



With Wrench Flats



⚠️ Annealing may lower hardness at wrench flats, cross-drilled hole and shaft end machined areas (effective thread length + approx. 10mm). P.112

⚠️ Cross-drilled hole areas may be out of O.D. tolerances due to annealing-induced deformation.

⚠️ L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.111

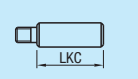
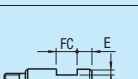

⚠️ Features of Low Temp. Black Chrome Plating P.128

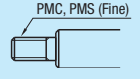

Part Number Type	1mm Increment				P Selection	Wrench Flats Dimensions				(Y) Max.	C	Coarse Thread Undercut Dimension	
	D	L	F	B		SC	W	ℓ1	ℓ2			M	Pitch
(W/o Wrench Flats) (With Wrench Flats)	5	25~296			3					300	0.2 or Less	3	0.5
	6	25~296			3 4					300		4	0.7
	8	25~296			3 4 5 6					300		5	0.8
	10	25~345			4 5 6 8					350		6	1.0
(D5~D30) (D6~D30)	12	25~345			5 6 8 10					350	0.5 or Less	8	1.25
VFBN VFBS	13	25~345	2≤F≤Px5	(When P≤6) B≤F-2	5 6 8 10					350		10	1.5
VSFBN VSFBS	15	25~345		(when P=8 or 10) B≤F-3	5 6 8 10					350		12	1.75
VPFBN VPFBS	16	25~345		(When P≥12) B≤F-5	5 6 8 10 12					350		16	2.0
VPSFBN VPSFBS	18	25~345		(B≥Pitchx3)	5 6 8 10 12 16					350		20	2.5
VRBN VRBS	20	25~445			6 8 10 12 16					450	1.0 or Less	25	
	25	25~445			8 10 12 16 20					450		30	
	30	25~445			8 10 12 16 20 24					450			

⚠️ Shafts have grinding undercuts at the bottom of threads. ⚠️ Shaft ends may have centering holes.

Ordering Part Number - L - F - B - P - SC
 Example VFBS12 - 200 - F20 - B15 - P8 - SC5

Alterations Part Number - L - F - B - P(PMC, PMS) - SC - (LKC-etc.)
 Example VFBS30 - 250 - F40 - B30 - P10 - SC10 - LKC

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 Not applicable when D-P≤2.
	FC	Set Screw Flat at One Location Ordering Code FC10-E8 FC, E=1mm Increment FC≤3xD When 1.5xD<FC, FC≤L/2 E=0 or E≥2 Not available in combination with WFC.
	WFC	Set Screw Flats at Two Locations Ordering Code WFC8-A8-E4 WFC,A,E=1mm Increment WFC≤3xD When 1.5xD<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.

Alterations	Code	Spec.
	PMC PMS	Change to Fine Thread Ordering Code SX15 PMC14 (M is changed to PMC.) PMS14 (M is changed to PMS)
	SX	Second Set of Wrench Flats Ordering Code SX15 Application Notes Applicable to Shafts with Wrench Flats only. Applicable to D=6 or more. SX=1mm Increment SC+SX+ℓ1x2<L SX≥0 Only applicable to Shafts with Wrench Flats. Orientation between two set screw flats is not coplanar.

⚠️ 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. See P.112

Part Number Type	D	Unit Price				
		Min. L - 50	L51~100	L101~200	L201~300	L301~445
VFBN	5					
	6					
	8					
	10					
	12					
	13					
	15					
	16					
	18					
	20					
	25					
	30					
VSFBN	5					
	6					
	8					
	10					
	12					
	13					
	15					
	16					
	18					
	20					
	25					
	30					
VPFBN	5					
	6					
	8					
	10					
	12					
	13					
	15					
	16					
	18					
	20					
	25					
	30					
VPSFBN	5					
	6					
	8					
	10					
	12					
	13					
	15					
	16					
	18					
	20					
	25					
	30					
VRBS	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	L301~445
VFBS	6					
	8					
	10					
	12					
	13					
	15					
	16					
	18					
	20					
	25					
	30					
	VSFBS	6				
8						
10						
12						
13						
15						
16						
18						
20						
25						
30						
VPFBS		6				
	8					
	10					
	12					
	13					
	15					
	16					
	18					
	20					
	25					
	30					
	VPSFBS	6				
8						
10						
12						
13						
15						
16						
18						
20						
25						
30						
VRBS		6				
	8					
	10					
	12					
	13					
	15					
	16					
	18					
	20					
	25					
	30					