

High Precision Linear Shafts

Both Ends Stepped and Tapped / Both Ends Stepped and Tapped with Wrench Flats

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

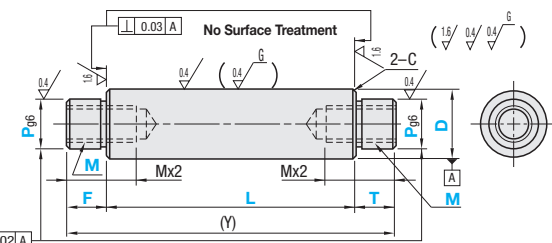


RoHS10

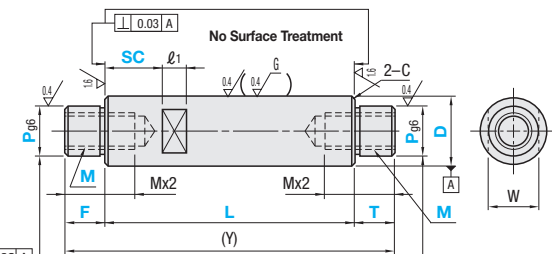
- ⚡ Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm). **P112**
- ⚡ Full Length Hardness Guaranteed Shafts **P127**
- ⚡ L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness **P111**
- ⚡ Features of LTBC Plating **P128**

Type		D Tol.	Material	Hardness	Surface Treatment
W/o Wrench Flats	With Wrench Flats	g6	EN 1.3505 Equiv.	Induction Hardened Effective Hardened Depth P112 EN 1.3505 Equiv. 58HRC~ EN 1.4037 Equiv. 58HRC~	Hard Chrome Plating Plating Hardness HV750 ~ Plating Thickness: 5μ or More LTBC Plating
VFAH	VFPFH				
VSFAH	VSFPFH				
VPFAH	VPFPFH				
VPSFAH	VPSFPFH				
VRAH	VRPH				
VSRAH	VSRPH				

W/o Wrench Flats



With Wrench Flats

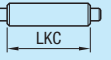
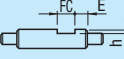
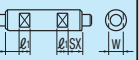
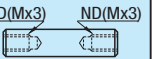
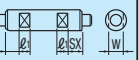
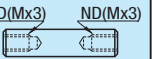


Part Number		1mm Increment			M (Coarse) Selection		Wrench Flats Dimensions			(Y) Max.	C
Type	D	L	F, T	P			SC	W	ℓ1		
(W/o Wrench Flats) (With Wrench Flats)	8	25~296	2≤F≤Px4	6	3		SC=1mm Increment ⚡ SC+ℓ1≤L ⚡ SC≥0 ⚡ Details of Wrench Flats P112	7	8	300	0.5 or Less
	10	25~346		6~8	3 4 5			8		350	
	12	25~346		6~10	3 4 5 6			10		350	
	13	25~346		6~11	3 4 5 6 8			11		350	
	15	25~346		6~13	3 4 5 6 8 10			13		350	
	16	25~346		6~14	3 4 5 6 8 10			14	10	350	
	18	25~346	2≤T≤Px4	8~16	4 5 6 8 10 12			16		350	1.0 or Less
	20	25~446		8~17	4 5 6 8 10 12			17		450	
	25	25~446		8~22	4 5 6 8 10 12 16			22		450	
	30	25~446		9~27	5 6 8 10 12 16 20 24			27	15	450	

⚡ P dimensions require M+3≤P. ⚡ (Y) dimensions require Mx4≤(Y). Tap pilot holes may go through.

Ordering Example
Part Number - L - F - P - M - T - SC
VFAH20 - 100 - F20 - P10 - M8 - T20
VSFAH20 - 100 - F20 - P10 - M8 - T20 - SC20

Alterations
Part Number - L - F - P - M (MD,ND) - T - SC - (LKC...etc)
VFAH20 - 100 - F20 - P10 - M8 - T20 - LKC
VSFAH20 - 100 - F20 - P10 - M8 - T20 - SC20 - FC10-E8

Alterations	Code	Spec.	Alterations	Code	Spec.
	LKC	Alteration to L dimension tolerance Ordering Code: LKC Application Notes: Applicable when L=200 or less. ⚡ Not applicable when D-P≤2. 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-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=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.		MD	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=12~30, M(N)=6~20 ⚡ One End Tapped: MDx3.5+4≥L ⚡ Both Ends Tapped: MDx3.5+4+NDx3.5+4≥L
	SX	Second Set of Wrench Flats Ordering Code: SX15 Application Notes: Only applicable to Shafts with Wrench Flats. WSC, X=1mm Increment ⚡ Orientation between two set screw flats is not coplanar.		ND	

⚡ Please see Shaft Alteration Overview for details if provided. **P113**
⚡ When selecting multiple alteration additions, the distance between machined areas should be greater than 2mm.
⚡ Alterations may lower hardness. See **P112**

Part Number		Unit Price					Part Number		Unit Price				
Type	D	Min. L 50	L51 100	L101 200	L201 300	L301 446	Type	D	Min. L 50	L51 100	L101 200	L201 300	L301 446
VFAH	8					-	VFPFH	8					-
	10							10					
	12							12					
	13							13					
	15							15					
	16							16					
	18							18					
	20							20					
	25							25					
	30							30					
VSFAH	8					-	VSFPFH	8					-
	10							10					
	12							12					
	13							13					
	15							15					
	16							16					
	18							18					
	20							20					
	25							25					
	30							30					
VPFAH	8					-	VPFPFH	8					-
	10							10					
	12							12					
	13							13					
	15							15					
	16							16					
	18							18					
	20							20					
	25							25					
	30							30					
VPSFAH	8					-	VPSFPFH	8					-
	10							10					
	12							12					
	13							13					
	15							15					
	16							16					
	18							18					
	20							20					
	25							25					
	30							30					
VRAH	8					-	VRPH	8					-
	10							10					
	12							12					
	13							13					
	15							15					
	16							16					
	18							18					
	20							20					
	25							25					
	30							30					
VSRAH	8					-	VSRPH	8					-
	10							10					
	12							12					
	13							13					
	15							15					
	16							16					
	18							18					
	20							20					
	25							25					
	30							30					

