

High Precision Linear Shafts - Stepped Ends / Stepped Ends with Wrench Flats

One End Threaded / Both Ends Threaded / One End Threaded / One End Tapped

☑ 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.	
One End Stepped and Threaded		Both Ends Stepped and Threaded		One End Stepped and Threaded One End Tapped						Dg6	
W/o Wrench Flats	With Wrench Flats	W/o Wrench Flats	With Wrench Flats	W/o Wrench Flats	With Wrench Flats	g6	SUS440C or 13Cr stainless SUS402 Equivalent SUS440C or 13Cr stainless	Effective Hardened Depth of Induction Hardening \geq P112 SUS402 Equivalent 58HRC- SUS440C or 13Cr stainless 56HRC-	Low Temp. Black Chrome Plating	4	-0.004
VFAN	VFPN	VFAM	VFPM	VFAD	VFPD					5	-0.012
VSFAN	VSFPN	VSFAM	VSFPM	VSFAD	VSFDPD					6	
VRAN	VRPN	VRAM	VRPM	VRAD	VRPD					8	-0.005
VSRAN	VSRPN	VSRAM	VSRPM	VSRAD	VSRPD					10	-0.014
										12	
						13	-0.006				
						15	-0.017				
						16					
						18					
						20	-0.007				
						25	-0.020				
						30					

One End Stepped and Threaded

One End Stepped and Threaded with Wrench Flats

Both Ends Stepped and Threaded

Both Ends Stepped and Threaded with Wrench Flats

One End Stepped and Threaded One End Tapped

One End Stepped and Threaded One End Tapped with Wrench Flats

- ☑ Annealing required for wrench flats machining and shaft end threading (effective thread length + approx. 10mm) may lower hardness. \geq P112
- ☑ L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness \geq P111
- ☑ Shafts may have centering holes at end faces.
- ☑ Features of Low Temp. Black Chrome Plating \geq P128

☑ The inside of taps won't be surface treated.

Part Number Type	1mm Increment					M, N (Coarse) Selection	J (Coarse) Selection	Wrench Flats Dimensions			(Y) Max.	C
	D	L	F, T	B, S	P, Q			SC	W	ℓ_1		
(W/o Wrench Flats) (With Wrench Flats)	(4)	25-195				3	2	-	-	-	200	0.2 or Less
VFAN VFPN	(5)	25-295				3 4	2.6 3	-	-	-	300	
VSFAN VSFPN	6	25-295				3 4 5	3				300	
VRAN VRPN	8	25-295				3 4 5 6	3 4 5				300	
VSRAN VSRPN	10	25-345				4 5 6 8	3 4 5 6				350	
VFAM VFPN	12	25-345	5sFsPx5	B=0 S=0	M<P<D	5 6 8 10	4 5 6 8	SC=1mm Increment			350	0.5 or Less
VSFAM VSFPM	13	25-345				5 6 8 10	4 5 6 8	☑ SC+ $\ell_1 \leq L$			350	
VRAM VRPN	15	25-345	5sT≤Nx5	Mx1≤BsMx3 Nx1≤SsNx3	N<Q<D	5 6 8 10 12	4 5 6 8 10	☑ SC≥0			350	
VSRAM VSRPM	16	25-345				5 6 8 10 12	4 5 6 8 10	☑ Metals of Wrench Flats P112			350	
VFAD VFPN	18	25-345				5 6 8 10 12	4 5 6 8 10 12				350	
VSFAD VSFPM	20	25-445				6 8 10 12 16	4 5 6 8 10 12				450	
VRAD VRPN	25	25-445				8 10 12 16 20	4 5 6 8 10 12 16				450	1.0 or Less
VSRAD VSRPM	30	25-445				8 10 12 16 20 24	6 8 10 12 16 20				450	

☑ For VFAD, VRAD, VSFAD, VSRAD, VFPD, VSFPM, VRPD and VSRPM, overall length L requires Jx3≤L. ☑ F-B(T-S)≥2 is required.

☑ Specify M=0 when B=0; N=0 when S=0. ☑ Sizes in () are not applicable to Shafts with Wrench Flats.

Ordering Example

Part Number - L - F - B - P - M - SC
 VFAN20 - 400 - F30 - B20 - P10 - M8

Part Number - L - F - B - P - M - T - S - Q - N - SC
 VFPN12 - 300 - F30 - B20 - P10 - M8 - T20 - S10 - Q10 - N6 - SC10

Part Number - L - F - B - P - M - J - SC
 VSFAD30 - 250 - F50 - B40 - P20 - M16 - J20