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

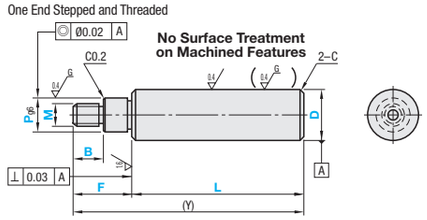
One End Threaded / Both Ends Threaded / One End Threaded, One End Tapped

RoHS

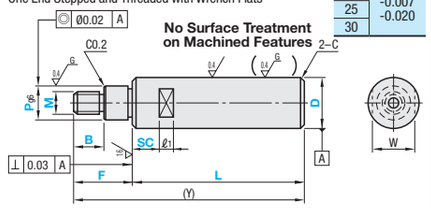
Type						D Tol.	M Material	H Hardness	S Surface Treatment
One End Stepped and Threaded		Both Ends Stepped and Threaded		One End Stepped and Threaded, One End Tapped					
Standard	With Wrench Flats	Standard	With Wrench Flats	Standard	With Wrench Flats				
VFAN	VFPN	VFAM	VFPM	VFAD	VFPD	g6	52100 Bearing Steel	Effective Hardened Depth of Induction Hardened P98 52100 Bearing Steel 58HRC~ 440C Stainless Steel 56HRC ~	-
VSFAN	VSFPN	VSFAM	VSFPM	VSFAD	VSFPD		440C Stainless Steel		
VRAN	VRPN	VRAM	VRPM	VRAD	VRPD		52100 Bearing Steel		Low Temp. Black Chrome Plating
VSRAN	VSRPN	VSRAM	VSRPM	VSRAD	VSRPD		440C Stainless Steel		

D Tol. Dg6	
4	-0.004 -0.012
5	
6	
8	-0.005 -0.014
10	
12	
13	-0.006 -0.017
15	
16	
18	
20	-0.007 -0.020
25	
30	

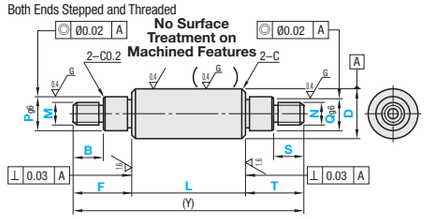
One End Stepped and Threaded



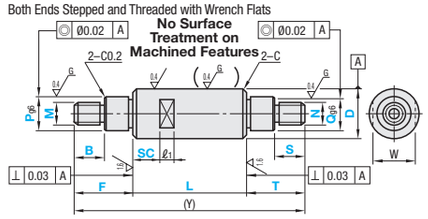
One End Stepped and Threaded with Wrench Flats



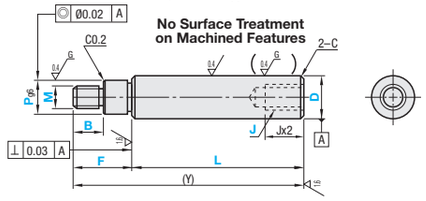
Both Ends Stepped and Threaded



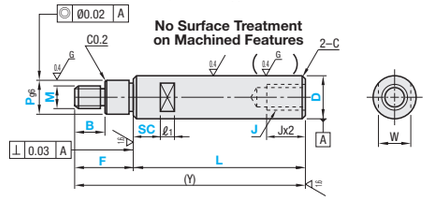
Both Ends Stepped and Threaded with Wrench Flats



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. P98

Changes in Hardness and Thread Undercut Dimensions P97

There will be centering holes on end faces of the shafts.

Shafts may have centering holes at end faces.

Features of Low Temp. Black Chrome Plating P112

The inside of taps won't be surface treated.

The inside of taps won't be surface treated.

Part Number Type	D	1mm Increment L	F, T	B, S	P, Q	M (Coarse Thread) N (Coarse Thread)	J (Coarse)	Wrench Flats Dimensions SC	W	ℓ1	(Y) Max.	C
VFAN VFPN VSFAN VSFPN VRAN VRPN VSRAN VSRPN	(4)	25~195	5≤F≤Px5 5≤T≤Nx5	(W/o Threads) B=0 S=0 Mx1≤B≤Mx3 Nx1≤S≤Nx3	M<P<D N<Q<D	3	2	-	-	-	200	0.2 or Less
	(5)	25~295				3 4	2.6 3	-	-	-	300	
	6	25~295				3 4 5	3	SC=1mm Increment SC+ℓ1≤L SC≥0 Details of Wrench Flats P98	5	8	300	0.5 or Less
	8	25~295				3 4 5 6	3 4 5		7		300	
	10	25~345				4 5 6 8	3 4 5 6		8		350	
VFAM VFPM VSFAM VSFPM VRAM VRPM VSRAM VSRPM	12	25~345				5 6 8 10	4 5 6 8		10	10	350	
	13	25~345				5 6 8 10	4 5 6 8		11		350	
	15	25~345				5 6 8 10 12	4 5 6 8 10		13		350	
	16	25~345				5 6 8 10 12	4 5 6 8 10		14		350	
VFAD VFPD VSFAD VSFPD VRAD VRPD VSRAD VSRPD	18	25~345				5 6 8 10 12	4 5 6 8 10 12		16		350	
	20	25~445				6 8 10 12 16	4 5 6 8 10 12		17		450	1.0 or Less
	25	25~445				8 10 12 16 20	4 5 6 8 10 12 16		22		450	
	30	25~445				8 10 12 16 20 24	6 8 10 12 16 20		27	15	450	

For VFAD, VRAD, VSFAD, VSRAD, VFPD, VSFPD, VRPD and VSRPD, 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
VFPM12 - 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

Days to Ship — Configure Online

Price — Configure Online

Part Number Type	D	Unit Price Min. L~50	L51~100	L101~200	L201~300	L301~445
	4				-	-
	5					-
	6					-
VFAN	8					-
VRAN	10					
	12					
VFPN (Applicable to D≥6)	13					
	15					
VRPN (Applicable to D≥6)	16					
	18					
	20					
	25					
	30					

Part Number Type	D	Unit Price Min. L~50	L51~100	L101~200	L201~300	L301~440
	4				-	-
	5					-
	6					-
VFAM	8					-
VRAM	10					
	12					
VFPM (Applicable to D≥6)	13					
	15					
VRPM (Applicable to D≥6)	16					
	18					
	20					
	25					
	30					

Part Number Type	D	Unit Price Min. L~50	L51~100	L101~200	L201~300	L301~445
	4				-	-
	5					-
	6					-
VFAD	8					-
VRAD	10					
	12					
VFPD (Applicable to D≥6)	13					
	15					
VRPD (Applicable to D≥6)	16					
	18					
	20					
	25					
	30					

Part Number Type	D	Unit Price Min. L~50	L51~100	L101~200	L201~300	L301~445
	4				-	-
	5					-
	6					-
VSFAN	8					-
VSRAN	10					
	12					
VSFPN (Applicable to D≥6)	13					
	15					
VSRPN (Applicable to D≥6)	16					
	18					
	20					
	25					
	30					

Part Number Type	D	Unit Price Min. L~50	L51~100	L101~200	L201~300	L301~440
	4				-	-
	5					-
	6					-
VSFAM	8					-
VSRAM	10					
	12					
VSFPM (Applicable to D≥6)	13					
	15					
VSRPM (Applicable to D≥6)	16					
	18					
	20					
	25					
	30					

Part Number Type	D	Unit Price Min. L~50	L51~100	L101~200	L201~300	L301~445
	4				-	-
	5					-
	6					-
VSFAD	8					-
VSRAD	10					
	12					
VSFPD (Applicable to D≥6)	13					
	15					
VSRPD (Applicable to D≥6)	16					
	18					
	20					
	25					
	30					

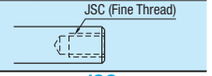
Low Temp. Black Chrome Plating Additional Charge	D	Additional Price Min. L~50	L51~100	L101~200	L201~300	L301~445
	4~6					-
	8, 10					
	12, 13					
	15, 16					

Low Temp. Black Chrome Plating Additional Charge	D	Additional Price Min. L~50	L51~100	L101~200	L201~300	L301~445
	18, 20					
	25					
	30					

Features of Low Temp. Black Chrome Plating P112

Alterations

Part Number - L - F - B - P - M (MMC, MMS) - T, J (JSC) - S - Q - N (NMC, NMS) - SC - (LKC)
VFAM13 - 300 - F30 - B20 - P10 - M8 - T20 - S10 - Q10 - NMC6

Alterations	Alteration to L dimension tolerance	Change to Fine Thread	Change to Fine Tapped Thread
			
Code	LKC	MMC, MMS, NMC, NMS	JSC
Spec.	Changes L Tolerance. Ordering Code LKC Applicable to L dimension 200 or less.···±0.03 L dimensions can be specified in 0.1mm increment for LKC. Not applicable when D-P (Q)≤2	Changes the threads to fine threads shown in the table below. (MMC, NMC→Applicable to bearing nut fine thread pitches.) (MMS, NMS→Applicable to cylinder fine thread pitches.) Ordering Code MMC17 Specify M dimensions with MMC (MMS). Specify N dimensions with NMC (NMS).	Changes tapped threads to fine tapped threads shown in the table below. Ordering Code JSC14 Specify J dimensions with JSC. J dimension is equal to JSC. Only applicable to V_AD, VS_AD, V_PD and VS_PD.
Price Adder			

D	MMC, NMC	MMS, NMS
4	3	
5	3 4	
6	3 4 5	
8	3 4 5 6	
10	4 5 6 8	
12	5 6 8 10	10
13	5 6 8 10	10
15	5 6 8 10 12	10 12
16	5 6 8 10 12	10 12
18	5 6 8 10 12 15	10 12 14
20	6 8 10 12 15 17	10 12 14
25	8 10 12 15 17 20	10 12 14 18
30	8 10 12 15 17 20 25	10 12 14 18
Pitch	0.35 0.5 0.75 1.0 1.5	1.25 1.5

D	JSC
12	8
13	8
15	8 10
16	8 10
18	8 10 12
20	8 10 12 14
25	8 10 12 14 18
30	8 10 12 14 18
Pitch	1.0 1.25 1.5

The distance between wrench flats and alteration areas should be greater than 2mm for alterations. P100

Alterations may lower hardness. P98