

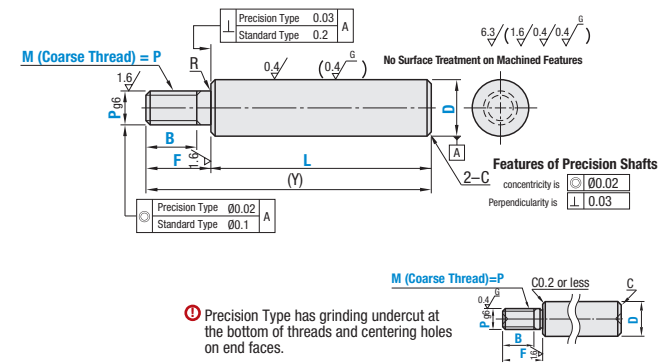
Shafts – Standard & Precision Type / One End Threaded



RoHS10

- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10 mm).
- Features of Low Temp. Black Chrome Plating P.213.
- Circularity, Straightness, Perpendicularity Concentricity, Changes in Hardness P.198.
- For One End Threaded-Thread O.D. = Shaft O.D., please see P.218.
- For Shafts with wrench flats and cross-drilled holes, please see P.222.

Precision Type	Type				Material	Hardness	Surface Treatment
	Standard						
D Tol. g6	D Tol. g6	D Tol. h5	D Tol. f8				
VFBN	SFAN	SFUN	—	—	52100 Bearing Steel Equivalent	Effective Hardened Depth of Induction Hardened P.199 52100 Bearing Steel Equivalent 58 HRC min.	—
VSFBN	SSFAN	SSFUN	—	—	SUS440C (13Cr) Stainless Steel Equivalent		
VPFBN	PSFAN	PSFUN	—	—	52100 Bearing Steel Equivalent	SUS440C (13Cr) Stainless Steel Equivalent 56 HRC min. (When D≤5, the shafts can be through hardened)	Hard Chrome Plating Plating Hardness: HV 750~ Plating Thickness: 5 μ or More
VPSFBN	PSSFAN	PSSFUN	—	—	SUS440C (13Cr) Stainless Steel Equivalent		
VRBN	RSFAN	—	—	—	52100 Bearing Steel Equivalent	—	Low Temperature Black Chrome Plating
—	—	—	PSFGN	—	1045 Carbon Steel Equivalent		
—	—	—	PSSFGN	—	304 Stainless Steel		



D	D Tolerance		
	g6	h5	f8
4			
5	-0.004	0	—
6	-0.012	-0.005	-0.010
8	-0.005	0	-0.013
10	-0.014	-0.006	-0.035
12			
13	-0.006	0	-0.016
15	-0.017	-0.008	-0.043
16			
18			
20	-0.007	0	-0.020
25	-0.020	-0.009	-0.053
30			
35	-0.009	0	-0.025
40	-0.025	-0.011	-0.064
50			

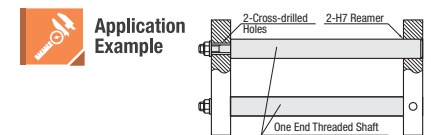
For O.D. tolerance f8 type, D needs to be 6 or more

Part Number	1 mm Increment				P	(Y) Max.	R	C	Coarse Thread Dimensions	
	Type	D	L	F					B	M
Precision Type D Tolerance g6 VFBN VSFBN VPFBN VPSFBN VRBN	5	25-296	2 ≤ F ≤ Px5	When P ≤ 6 B ≤ F-2 When P = 8, 10 B ≤ F-3 When P ≤ 12 B ≤ F-5 B ≥ Pitchx3	3	300	0.2 or Less	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 6 8 10	0.8
	10	25-345			4 5 6 8	350			5 6 8 10	1.0
	12	25-345			5 6 8 10	350			5 6 8 10 12	1.25
	13	25-345			5 6 8 10	350			5 6 8 10 12	1.5
	15	25-345			5 6 8 10 12	350			5 6 8 10 12 16	1.75
	16	25-345			5 6 8 10 12	350			5 6 8 10 12 16	2.0
	18	25-345			6 8 10 12 16	450			8 10 12 16 20	2.5
	20	25-445			8 10 12 16 20	450			8 10 12 16 20 24	3.0
25	25-445				3.5					
30	25-445									

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

Part Number	1 mm Increment				P	(Y) Max.	R	C		
	Type	D	L	F					B	
Standard Type D Tolerance g6 SFAN SSFAN PSFAN PSSFAN RSFAN D ≥ 30, L ≤ 500 D Tolerance h5 SFUN SSFUN PSFUN PSSFUN D Tolerance f8 PSFGN D ≥ 6 PSSFGN D ≥ 6	4	25-298	2 ≤ F ≤ Px5	When P ≤ 6 B ≤ F-2 When P = 8/10 B ≤ F-3 When P ≤ 12 B ≤ F-5 B ≥ Pitchx3	3	300	0.2 or Less	0.2 or Less		
	5	25-398			3 4	400			4	0.7
	6	25-898			3 4 5 6	900			5 6 8 10	0.8
	8	25-1098			3 4 5 6 8	1100			(3) 4 5 6 8 10 12	1.0
	10	25-1198			(3) (4) 5 6 8 10 12	1200			(3) (4) 5 6 8 10 12	1.25
	12	25-1398			(4) 5 6 8 10 12	1400			(4) 5 6 8 10 12	1.5
	13	25-1398			(4) 5 6 8 10 12	1400			(4) 5 6 8 10 12 16	1.75
	15	25-1398			(4) 5 6 8 10 12	1400			(4) 5 6 8 10 12 16	2.0
	16	25-1398			5 6 8 10 12 16	1400			(5) 6 8 10 12 16 20 24	2.5
	18	25-1398			(6) 8 10 12 16 20 24	1400			8 10 12 16 20 24	3.0
	20	25-1398			8 10 12 16 20 24	1500			10 12 16 20 24 30	3.5
	25	25-1398			12 16 20 24 30	1500			12 16 20 24 30	
	30	25-1498			16 20 24 30	1500			16 20 24 30	
	35	25-1498								
	40	25-1498								
50	25-1498									

P() dimensions are applicable only for D diameter tolerance with g6.



Part Number Example
Part Number - L - F - B - P
VFBN12 - 300 - F20 - B15 - P6
SSFAN20 - 500 - F20 - B15 - P6

Part Number Alterations
Part Number - L - F - B - P (PMC / PSC) - (LKC..etc.)
SSFAN30 - 250 - F40 - B30 - P10 - LKC

Alteration Details P.200

Alterations	Code	Spec.
	LKC	Alteration to L Dimension Tolerance Ordering Code: LKC Application Notes: Applicable when L=200 or less for precision type. L dimensions can be specified in 0.1 increment for LKC. L < 200 → L ± 0.03 200 ≤ L < 500 → L ± 0.05 L ≥ 500 → L ± 0.1 Not applicable when D-P ≤ 2
	FC	Set Screw Flat at One Location Ordering Code: FC10-E8 Application Notes: Not applicable to precision shafts. FC, E = 1 mm increment FC ≤ 3xD When 1.5xD < FC, FC ≤ L/2 E = 0 or E ≥ 2 Not available in combination with WFC
	WFC	Add set screw flats at two locations Ordering Code: WFC8-A8-E4 Application Notes: Not applicable to precision shafts. WFC, A, E = 1 mm increment WFC ≤ 3xD When 1.5xD < FC, 2WFC ≤ L/2 A (E) = 0 or A (E) ≥ 2 Orientation between set screw flats is random. Not available in combination with FC.

Alterations	Code	Spec.
	RC	90° Set Screw Flat at One Location Ordering Code: RC10 Application Notes: Applicable to D=10-30 Not applicable to precision shafts Not available in combination with WRC For details, see Shaft Alteration Overview P.200.
	WRC	90° Set Screw Flat at Two Locations Ordering Code: WRC10-Y10 Application Notes: Applicable to D=10-30 Not applicable to precision shafts Not available in combination with RC. Orientation between set screw features is random. For details, see Shaft Alteration Overview P.200.
	PMC PMS	Change to Fine Thread Ordering Code: PMC14 (P is changed to PMC) PMS14 (P is changed to PMS) For details, see Shaft Alteration Overview P.200.
	KC	Keyway is added at one location Ordering Code: KC10-G10 Application Notes: Only applicable to D=12, 16, 20, 25 and 30. Not applicable to precision type For details, see Shaft Alteration Overview P.200.

- Please see Shaft Alteration Overview for details if provided. P.200
- When selecting multiple alteration additions, the distance between machined areas should be greater than 2 mm. P.201
- The distance between wrench flats and cross-drilled holes should be greater than 2 mm for alterations.
- Alterations may lower hardness. P.199