

Shafts

Both Ends Threaded

High Precision Linear Shafts for High Precision Assembly
 Features: Perpendicularity $\perp 0.03$, Concentricity $\odot 0.02$

P.237

For High Precision Linear Shafts with high perpendicular precision of the shaft end ($\perp 0.03$), see P.237. For Both Ends Threaded with Undercuts, see P.185. For Shafts with Wrench Flats and Cross-Drilled Hole, see P.183.

For products uncovered by the e-Catalog Standards, see P.131.

RoHS10

Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm). P.142

L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.141

Features of Low Temp. Black Chrome Plating P.156

Type	D Tol.		Material	Hardness	Surface Treatment
	g6	h5			
SFAM	SFUM	-	SUJ2 Equivalent	Effective Hardened Depth of Induction Hardening	-
SSFAM	SSFUM	-	SUS440C or 13Cr stainless		
PSFAM	PSFUM	-	SUJ2 Equivalent	P.142 SUJ2 Equivalent 56HRC- SUS440C or 13Cr stainless 56HRC-	Hard Chrome Plating - Plating Hardness: HV750 - Plating Thickness: 5u or More
PSSFAM	PSSFUM	-	SUS440C or 13Cr stainless		
RSFAM	-	-	SUJ2 Equivalent	Low Temp. Black Chrome Plating Hardness: HV750 - Plating Thickness: 10u or More	-
-	-	-	S45C Equivalent		
-	-	-	SUS304	-	-

For plated products, the surface roughness of D part is $\sqrt{0.4}$; and for unplated products, it is $\sqrt{0.6}$

Part Number Type	D	1mm Increments		P, Q Selection	(Y) Max.	R	C	Coarse Thread Dimensions	
		L	F, T					M, N	Pitch
(D Tol. g6) SFAM SSFAM PSFAM PSSFAM RSFAM (D \leq 30, L \leq 500, Ymax \leq 800)	4	25-296		3	300	0.2 or Less	0.2 or Less	3	0.5
	5	25-396		3 4	400			4	0.7
	6	25-796		3 4 5	600			5	0.8
	8	25-996		3 4 5 6	800			6	1.0
	10	25-996		3 4 5 6 8	800			8	1.25
	12	25-1196		5 6 8 10	1000			10	1.5
	13	25-1196		5 6 8 10 12	1000			12	1.75
	15	25-1196	2 \leq F \leq Px5 2 \leq T \leq Qx5	5 6 8 10 12	1000			12	1.75
	16	25-1196		5 6 8 10 12	1200			16	2.0
	18	25-1196		5 6 8 10 12 16	1200			20	2.5
(D Tol. f8) PSFGM (D \geq 6) PSSFGM (D \geq 6)	20	25-1196		6 8 10 12 16	1200	0.3 or Less	0.5 or Less	20	3.0
	25	25-1196		8 10 12 16 20 24	1500			24	3.0
	30	25-1496		8 10 12 16 20 24	1500			30	3.5
	35	25-1496		10 12 16 20 24 30	1500				
	40	25-1496		12 16 20 24 30	1500				
	40	25-1496		16 20 24 30	1500				
	50	25-1496			1500				

Thread machining will not be applied to B=0 or S=0. D>P(Q)

Ordering Example: Part Number - L - F - B - P - T - S - Q
 SFAM20 - 300 - F30 - B20 - P8 - T20 - S15 - Q10

Alterations Example: Part Number - L - F - B - P(PMC, PMS) - T - S - Q(QMC, QMS) - (LKC--etc.)
 SFAM30 - 300 - F40 - B30 - P20 - T50 - S40 - Q16 - LKC

Alterations	Code	Spec.
	LKC	Alteration to L dimension tolerance Ordering Code: LKC L dimensions can be specified in 0.1 mm increment for LKC. L < 200 \rightarrow L \pm 0.03 200 \leq L < 500 \rightarrow L \pm 0.05 L \geq 500 \rightarrow L \pm 0.1
	WSC	Wrench Flats at Two Locations Ordering Code: WSC12-X8 Application Notes: Applicable to D=6 or more WSC, X=1mm Increment WSC+X+ ℓ 1x2<L WSC(X) \geq 0 Orientation between two set screw flats is not coplanar.
	FC	Set Screw Flat at One Location Ordering Code: FC10-E8 FC, E=1mm Increment D \geq 30: FC \leq 5xD D \geq 35: FC \leq 3xD E=0 or E \geq 2 Not available in combination with WFC.
	WFC	Set Screw Flats at Two Locations Ordering Code: WFC8-A8-E4 WFC, A, E=1mm Increment D \geq 30: WFC \leq 5xD D \geq 35: WFC \leq 3xD A(E)=0 or A(E) \geq 2 Orientation between set screw flats is not coplanar. Not available in combination with FC.

Alteration Details P.143

Alterations	Code	Spec.
	RC	90-deg. Set Screw Flat at One Location Ordering Code: RC10 Application Notes: Only applicable to D=10-30. Not available in combination with WRC.
	WRC	90-deg. Set Screw Flats at Two Locations Ordering Code: WRC10-Y10 Application Notes: Only applicable to D=10-30. Not available in combination with RC. Orientation between two set screw flats is not coplanar.
	PMC, PMS, QMC, QMS	Change to Fine Thread Ordering Code: PMC14 (P is changed to PMC) PMS14 (P is changed to PMS) QMC14 (Q is changed to QMC) QMS14 (Q is changed to QMS)
	PC, QC	PC: Adds undercut(s) on P dimension area. QC: Adds undercut(s) on Q dimension area. Ordering Code: PC For detailed undercut dimensions, see P.141. Application Notes: Applicable to M=6 or more. Only D \leq 8 is applicable. Not applicable to D=Q and D=P.

Please see Shaft Alteration Overview for details if provided. P.143

When selecting multiple alteration additions, the distance between machined areas should be greater than 2mm.

Alterations may lower hardness. See P.142.

Part Number Type	D	Unit Price																										
		Min. L	L51	L101	L151	L201	L251	L301	L351	L401	L451	L501	L551	L601	L651	L701	L751	L801	L851	L901	L951	L1001	L1101	L1201	L1301	L1401		
SFAM SFUM	4																											
	5																											
	6																											
	8																											
	10																											
	12																											
	13																											
	15																											
	16																											
	18																											
SSFAM SSFUM	4																											
	5																											
	6																											
	8																											
	10																											
	12																											
	13																											
	15																											
	16																											
	18																											
PSFAM PSFUM	4																											
	5																											
	6																											
	8																											
	10																											
	12																											
	13																											
	15																											
	16																											
	18																											
PSSFAM PSSFUM	4																											
	5																											
	6																											
	8																											
	10																											
	12																											
	13																											
	15																											
	16																											
	18																											

For D tolerance h5, add the relevant surcharge to the prices above.

Part Number Type	D	Unit Price						
		Min. L	L51	L101	L151	L201	L301	L401
RSFAM	4							
	5							
	6							
	8							
	10							
	12, 13							
	15, 16							
	18, 20							
	25							
	30							
PSSFGM	6							
	8							
	10							
	12, 13							
	15, 16							
	18, 20							
	25							
	30							
	35							
	40							

Both Ends Threaded Shaft (PSFAM)

