

Shafts

Both Ends Threaded with O.D. same as Shaft O.D.

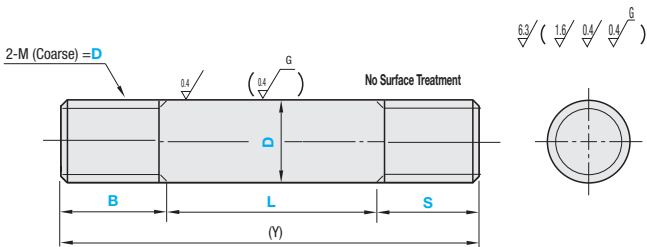
For One End Threaded Shafts with different diameters, see P.153.



- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm). P.112
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.111
- Features of LTBC Plating P.128

Type			Material	Hardness	Surface Treatment
D Tol. g6	D Tol. h5	D Tol. f8			
SFAL	SFUL	-	EN 1.3505 Equiv.	Effective Hardened Depth of Induction Hardening P.112 EN 1.3505 Equiv. 58HRC-EN 1.4037 Equiv. 56HRC	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 5µ or More
SSFAL	SSFUL	-	EN 1.4037 Equiv.		
PSFAL	PSFUL	-	EN 1.3505 Equiv.		
PSSFAL	PSSFUL	-	EN 1.4037 Equiv.		
RSFAL	-	-	EN 1.3505 Equiv.	-	LTBC Plating
-	-	PSFGL	EN 1.1191 Equiv.		Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 10µ or More
-	-	PSSFGL	EN 1.4301 Equiv.		

D Tol.			
D	g6	h5	f8
3	-0.002 -0.008	0 -0.004	-
4			
5	-0.004 -0.012	0 -0.005	
6			-0.010 -0.028
8	-0.005 -0.014	0 -0.006	-0.013 -0.035
10			
12	-0.006 -0.017	0 -0.008	-0.016 -0.043
16			
20	-0.007 -0.020	0 -0.009	-0.020 -0.053
30			



Part Number		1mm Increment		M	(Y) Max.	Coarse Thread Dimension	
Type	D	L	B, S			M	Pitch
(D Tolerance g6) (D Tolerance h5)	3	25~194	3~15	3	200	3	0.5
SFAL SFUL	4	25~292	4~20	4	300	4	0.7
SSFAL SSFUL	5	25~392	4~25	5	400	5	0.8
PSFAL PSFUL	6	25~590	5~30	6	600	6	1.0
PSSFAL PSSFUL	8	25~786	7~40	8	800	8	1.25
RSFAL (L≤500, Ymax≤800)	10	25~784	8~50	10	800	10	1.5
	12	25~982	9~60	12	1000	12	1.75
(D Tolerance f8)	16	25~1180	10~80	16	1200	16	2.0
PSFGL (D≥6)	20	25~1174	13~100	20	1200	20	2.5
PSSFGL (D≥6)	30	25~1464	18~150	30	1500	30	3.5

For One End Threaded with O.D. same as Shaft O.D., L dimensions have priority, thus the effective thread length of B(S) dimension will be B(S)-(Pitchx2).

L does not include incomplete threads.

Ordering Example Part Number - L - B - S
SFAL20 - 300 - B20 - S15

Alterations Part Number - L - B - S - (SC...etc.)
SFAL30 - 300 - B30 - S40 - SC10

Alterations	Code	Spec.
	SC	Wrench Flats at One Location [Ordering Code] SC5 [Application Notes] Applicable to D=6 or more SC=1mm Increment D W ℓ_1 6 5 8 7 8 10 8 12 10 16 14 10 20 17 30 27 15 SC+ ℓ_1 ≤L SC≥0 Not available in combination with WSC.
	WSC	Second Set of Wrench Flats [Ordering Code] WSC15 WSC(X)=1mm Increment D W ℓ_1 X 12 10 16 14 10 20 17 30 27 15 WSC+X+ ℓ_1 x2<L WSC(X)≥0 Orientation between two set screw flats is not coplanar. Not available in combination with SC.
	FC	Set Screw Flat at One Location [Ordering Code] FC10-E8 FC, E=1mm Increment D h FC≤3xD When 1.5xD<FC, FC≤L/2 E=0 or E≥2 20~30 2 Not available in combination with WFC.
	WFC	Set Screw Flats at Two Locations [Ordering Code] WFC10-A8-E20 WFC, A, E=1mm Increment D h 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.

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.

Please see Alteration Overview for details. P.113

When selecting multiple alteration additions, the distance between machined areas should be greater than 2mm. P.114

Alterations may lower hardness. See P.112

Part Number		Unit Price																											
Type	D	Min. 50	L51 100	L101 150	L151 200	L201 250	L251 300	L301 350	L351 400	L401 450	L451 500	L501 550	L551 600	L601 650	L651 700	L701 750	L751 800	L801 850	L851 900	L901 950	L951 1000	L1001 1100	L1101 1200	L1201 1300	L1301 1400	L1401 1464			
SFAL 🔍SFUL	3					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	4							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	5								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	6													-	-	-	-	-	-	-	-	-	-	-	-	-			
	8																	-	-	-	-	-	-	-	-	-			
	10																		-	-	-	-	-	-	-	-			
	12																					-	-	-	-	-			
	16																						-	-	-	-			
	20																								-	-			
	30																									-			
SSFAL 🔍SSFUL	3					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	4							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	5								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	6													-	-	-	-	-	-	-	-	-	-	-	-	-			
	8																	-	-	-	-	-	-	-	-	-			
	10																		-	-	-	-	-	-	-	-			
	12																					-	-	-	-	-			
	16																						-	-	-	-			
	20																								-	-			
	30																									-			
PSFAL 🔍PSFUL	3					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	4							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	5								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	6														-	-	-	-	-	-	-	-	-	-	-	-			
	8																	-	-	-	-	-	-	-	-	-			
	10																		-	-	-	-	-	-	-	-			
	12																					-	-	-	-	-			
	16																						-	-	-	-			
	20																							-	-	-			
	30																								-	-			
PSSFAL 🔍PSSFUL	3					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	4							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	5								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	6														-	-	-	-	-	-	-	-	-	-	-	-			
	8																	-	-	-	-	-	-	-	-	-			
	10																		-	-	-	-	-	-	-	-			
	12																					-	-	-	-	-			
	16																						-	-	-	-			
	20																							-	-	-			
	30																								-	-			

Part Number		Unit Price						
Type	D	Min. L 50	L51 100	L101 150	L151 200	L201 300	L301 400	L401 500
RSFAL	3							
	4							
	5							
	6							
	8							
	10							
	12							
PSSFGL	16							
	20							
	30							

Part Number		Unit Price							
Type	D	Min. L 100	L101 200	L201 400	L401 600	L601 800	L801 1000	L1001 1200	L1201 1464
PSFGL	6					-	-	-	-
	8						-	-	-
	10						-	-	-
	12							-	-
	16								-
	20								-
	30								
PSSFGL	6					-	-	-	-
	8						-	-	-
	10						-	-	-
	12							-	-
	16								-
	20								-
	30								