Shafts

Solid Type

■Can be selected in 1mm increments. Stocked in fixed L dimensions.

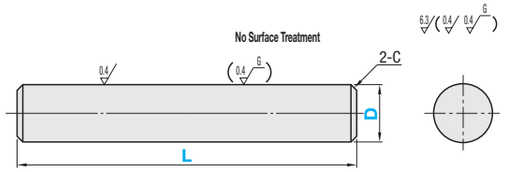
RoHS10

Features of LTBC Plating P.128

L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.111

Type			M Material	H Hardness	S Surface Treatment
D Tol. g6	D Tol. h5	D Tol. f8			
SFJ	SFU	-	EN 1.3505 Equiv.	Induction Hardened Effective Hardened Depth P.112 EN 1.3505 Equiv. 58HRC~ EN 1.4037 Equiv. 56HRC~	-
ZSFJ	-	-			
SSFJ	SSFU	-	EN 1.4125 Equiv.		
PSFJ	PSFU	-	EN 1.3505 Equiv.		Hard Chrome Plating - Plating Hardness: HV750 ~, Plating Thickness: 5μ or More
PSSFJ	PSSFU	-	EN 1.4125 Equiv.		
RSFJ	-	-	EN 1.3505 Equiv.		LTBC Plating
-	-	PSFG	EN 1.1191 Equiv.	-	Hard Chrome Plating - Plating Hardness: HV750 ~, Plating Thickness: 10μ or More
-	-	PSSFG	EN 1.4301 Equiv.		

D	D Tol. g6	D Tol. h5	D Tol. f8
3	-0.002 -0.008	0 -0.004	-
4	-0.004 -0.012	0 -0.005	
5			
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
13			
15			
16			
18			
20	-0.007 -0.020	0 -0.009	-0.020 -0.053
25			
30			
35	-0.009 -0.025	0 -0.011	-0.025 -0.064
40			
50			

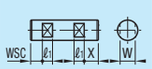
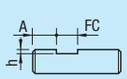
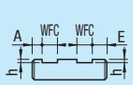


Part Number Type	D	L 1mm Increment	C
SFJ, SSFJ, PSFJ, PSSFJ, RSFJ (D≤30, L≤500) (D Tolerance g6) / SFU, SSFU, PSFU, PSSFU (D Tolerance h5) / PSFG, PSSFG (D Tolerance f8)	3	10~ 400	0.2 or Less
	4	10~ 400	
	5	10~ 400	
	6	20~ 600	0.5 or Less
	8	20~ 800	
	10	20~ 800	
	12	20~1000	
	13	25~1000	
	15	25~1000	
	16	30~1200	
	18	30~1200	
	20	30~1200	1.0 or Less
	25	35~1200	
	30	35~1500	
	35	35~1500	
	40	50~1500	
	50	65~1500	

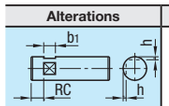
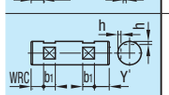
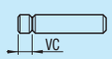
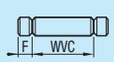
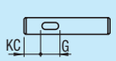
Part Number Type	D	L Fixed	C	Unit Price
ZSFJ	10	100	0.5 or Less	
	12	100		
		300		
	20	200	1.0 or Less	
		300		

Ordering Example: Part Number - L
SFJ20 - 75

Alterations: Part Number - L - (LKC, SC···etc.)
SFJ30 - 250 - LKC

Alterations	Code	Spec.
	LKC	L Dimension Tolerance Change (Precision) Ordering Code LKC L dimensions can be specified in 0.1mm increment for LKC. L<200 ···L±0.03 200≤L<500 ···L±0.05 L≥500 ···L±0.1
	SC	Wrench Flats at One Location Ordering Code SC5 Application Notes Applicable to D=6 or more SC=1mm Increment SC+ℓ1≤L SC≥0 Not available in combination with WSC. D / W / ℓ1: 6 / 5 / 8; 8 / 7; 10 / 8; 12 / 10; 13 / 11; 15 / 13; 16 / 14; 18 / 16; 20 / 17; 25 / 22; 30 / 27; 35 / 30; 40 / 36; 50 / 41
	WSC	Wrench Flats at Two Locations Ordering Code WSC12-X8 Application Notes Applicable to D=6 or more WSC, X=1mm Increment WSC+X+ℓ1×2<L WSC(X)≥0 Orientation between wrench flats is not coplanar. Not available in combination with SC.
	FC	Set Screw Flat at One Location Ordering Code FC10-A8 FC, A=1mm Increment FC≤3xD When 1.5xD<FC, FC≤L/2 A=0 or A≥2 Not available in combination with WFC. D / h: 3~ 5 / 0.5; 6~18 / 1; 20~40 / 2; 50 / 3
	WFC	Set Screw Flats at Two Locations Ordering Code WFC10-A8-E20 WFC, A, E=1mm Increment WFC≤3xD When 1.5xD<WFC, 2WFC≤L/2 A(E)=0 or A(E)≥2 Two set screw flats cannot be machined coplanar. Not available in combination with FC. D / h: 3~ 5 / 0.5; 6~18 / 1; 20~40 / 2; 50 / 3

Alteration Details P.113

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. For details, see Shaft Alteration Guide. P.113
	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.
	VC	V Groove at One Location Ordering Code VC8 Application Notes Applicable to D=6 or more Not available in combination with WVC.
	WVC	V Grooves at Two Locations Ordering Code WVC180-F8 Application Notes Applicable to D=6 or more Not available in combination with VC.
	KC	Add keyway at one location. Ordering Code KC10-G10 Application Notes Only applicable to D=12, 16, 20, 25 and 30.

Please see Shaft Alteration Overview for details if provided. 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 Type	D	Min. L 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	L1401~1500
SFJ SFU	3									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6													-	-	-	-	-	-	-	-	-	-	-	-	-
	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
	15																					-	-	-	-	-
	16																							-	-	-
	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50	-																								
SSFJ SSFU	3									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6													-	-	-	-	-	-	-	-	-	-	-	-	-
	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
	15																					-	-	-	-	-
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	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50	-																								
PSFJ PSFU	3									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6													-	-	-	-	-	-	-	-	-	-	-	-	-
	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
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	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50	-																								
PSSFJ PSSFU	3									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6													-	-	-	-	-	-	-	-	-	-	-	-	-
	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
	15																					-	-	-	-	-
	16																							-	-	-
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	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50	-																								

For D tolerance h5, JPY390 is added to the prices above.

Part Number Type	D	Min. L 50	L51~100	L101~150	L151~200	L201~300	L301~400	L401~500
RSFJ	3, 4, 5							-
	6							
	8							
	10							
	12							
	13							
	15							
	16							
	18							
	20							
	25							
	30							

Part Number Type	D	Min. L 100	L101~200	L201~400	L401~600	L601~800	L801~1000	L1001~1200	L1201~1500
PSFG	6					-	-	-	-
	8								
	10								
	12								
	13								
	15, 16								
	18, 20								
	25								
	30								
	35								
	40								
	50								

Part Number Type	D	Min. L 100	L101~200	L201~400	L401~600	L601~800	L801~1000	L1001~1200	L1201~1500
PSSFG	6					-	-	-	-
	8								
	10								
	12								
	13								
	15, 16								
	18, 20								
	25								
	30								
	35								
	40								
	50								