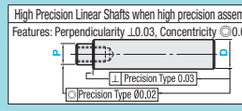
Shafts

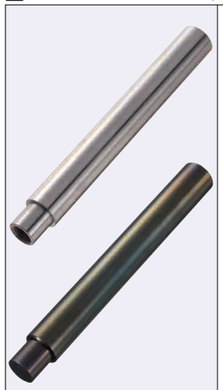
One End Stepped and Tapped / One End Stepped

High Precision Linear Shafts when high precision assembly is needed
Features: Perpendicularity ⊥0.03, Concentricity ◎0.02



P.199

■For High Precision Linear Shafts with high perpendicular precision of the shaft end (⊥ 0.03), see P.199.
■For Shafts with Wrench Flats, see P.139.



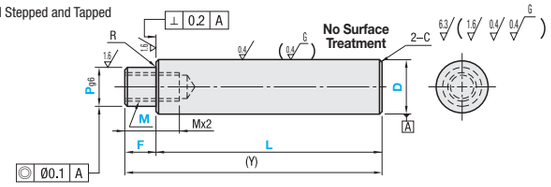
RoHS10

- 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

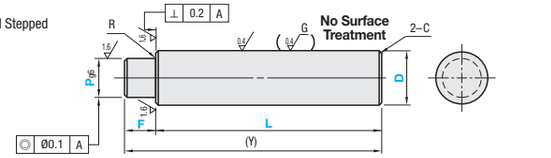
Type: One End Stepped and Tapped D Tol. g6	One End Stepped and Tapped D Tol. h5	One End Stepped and Tapped D Tol. f8	One End Stepped D Tol. g6	One End Stepped D Tol. h5	One End Stepped D Tol. f8	M Material	H Hardness	S Surface Treatment
SFAG	SFUG	-	SFAC	SFCU	-	EN 1.3505 Equiv.	Effective Hardened Depth of Induction Hardening P.112 EN 1.3505 Equiv. 56HRC~ EN 1.4125 Equiv. 56HRC~	-
SSFAG	SSFUG	-	SSFAC	SSFCU	-	EN 1.4125 Equiv.		Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 5μ or More
PSFAG	PSFUG	-	PSFAC	PSFCU	-	EN 1.3505 Equiv.		
PSSFAG	PSSFUG	-	PSSFAC	PSSFCU	-	EN 1.4125 Equiv.		LTBC Plating
RSFAG	-	-	RSFAC	-	-	EN 1.3505 Equiv.		
-	-	PSFGG	-	-	PSCGC	EN 1.1191 Equiv.	-	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 10μ or More
-	-	PSSFGG	-	-	PSSCGC	EN 1.4301 Equiv.		

D	D Tol. g6	D Tol. h5	D Tol. f8
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			

One End Stepped and Tapped



One End Stepped



Part Number Type	D	L	F	P	M (Coarse) Selection	(Y) Max.	R	C
One End Stepped and Tapped (D Tol. g6) SFAG SSFAG PSFAG PSSFAG RSFAG (D≤30, L≤500) (D Tolerance f8) PSFGG PSSFGG; (D Tol. h5) SFUG SSFUG PSFUG PSSFUG; One End Stepped (D Tol. g6) SFAC SSFAC PSFAC PSSFAC RSFAC (D≤30, L≤500) (D Tolerance f8) PSCGC PSSCGC; (D Tol. h5) SFCU SSFCU PSFCU PSSFCU	8	25~798	2≤F≤Px4	6	3	800	0.3 or Less	0.5 or Less
	10	25~798		6~ 8	3 4 5	800		
	12	25~998		6~10	3 4 5 6	1000		
	13	25~998		6~11	3 4 5 6 8	1000		
	15	25~998		6~13	3 4 5 6 8 10	1000		
	16	25~1198		6~14	3 4 5 6 8 10	1200		
	18	25~1198		8~16	4 5 6 8 10 12	1200		
	20	25~1198		8~17	4 5 6 8 10 12	1200		
	25	25~1198		8~22	4 5 6 8 10 12 16	1200		
	30	25~1498		9~27	5 6 8 10 12 16 20 24	1500		1.0 or Less
	35	25~1498		9~32	5 6 8 10 12 16 20 24	1500	0.5 or Less	
	40	25~1498		11~37	6 8 10 12 16 20 24 30	1500		
	50	25~1498		11~47	6 8 10 12 16 20 24 30	1500		

•One End Stepped and Tapped P dimensions require M+3≤P. When Mx2.5+4≥Y, tap pilot holes may go through.

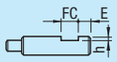
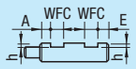
Ordering Example

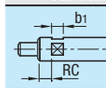
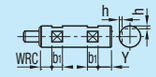
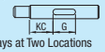
Part Number	L	F	P	M
SFAG20	400	F25	P16	M10
SFUG20	400	F25	P16	M10
SFAC20	500	F25	P16	

Alterations

Part Number - L - F - P - M (MD) - (LKC, FC···etc.)
SFAG30 - 400 - F25 - P16 - M10 - LKC

Alteration Details P.113

Alterations	Code	Spec.
	LKC	Alteration to L dimension tolerance Ordering Code LKC ⊗Not applicable when D-P≤2. 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
	FC	Set Screw Flat at One Location Ordering Code FC10-E8 FC, E=1mm Increment FC≤3xD When 1.5xD<FC, FC≤L/2 E=0 or E≥2 ⊗Not available in combination with WFC. D / h: 8~18 / 1; 20~40 / 2; 50 / 3
	WFC	Set Screw Flats at Two Locations Ordering Code WFC8-A8-E4 WFC, A, E=1mm Increment 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. D / h: 8~18 / 1; 20~40 / 2; 50 / 3

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. For details, see Shaft Alteration Overview. P.113
• Keyway at One Location :KC  • Keyways at Two Locations :WKC 	KC WKC	Keyway Ordering Code KC10-G10 WKC10-C8-KC10-G10 Application Notes Only applicable to D=12, 16, 20, 25 and 30.
	MD	Change the effective length of tapped part to Mx3. Ordering Code MD6 (M is changed to MD) Application Notes Only applicable to D=8~30, M=6~20 One End Tapped: MDx3.5+4≥L

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.
Alterations may lower hardness. See P.112

Part Number Type	D	Min. L 1~50	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	L1401~1498
SFAG SFUG SFAC SFCU	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
	15																					-	-	-	-	-
	16																							-	-	-
	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									
SSFAG SSFUG SSFAC SSFCU	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
	15																					-	-	-	-	-
	16																							-	-	-
	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									
PSFAG PSFUG PSFAC PSFCU	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
	15																					-	-	-	-	-
	16																							-	-	-
	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									
PSSFAG PSSFUG PSSFAC PSSFCU	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
	15																					-	-	-	-	-
	16																							-	-	-
	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									

•One End Stepped and Tapped •One End Stepped

Part Number Type	D	Min. L 1~50	L51~100	L101~150	L151~200	L201~300	L301~400	L401~500
RSFAG RSFAC	8							
	10							
	12							
	13							
	15							
	16							
	18							
	20							
	25							
	30							

Part Number Type	D	Min. L 1~100	L101~200	L201~400	L401~600	L601~800	L801~1000	L1001~1200	L1201~1498
PSFGG PSCGC	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	L1201~1498
PSSFGG PSSCGC	8, 10						-	-	-
	12, 13							-	-
	15, 16								
	18, 20								
	25								
	30								
	35								
	40								
	50								