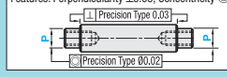
Shafts

Both Ends Stepped and Tapped / Both Ends Stepped

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


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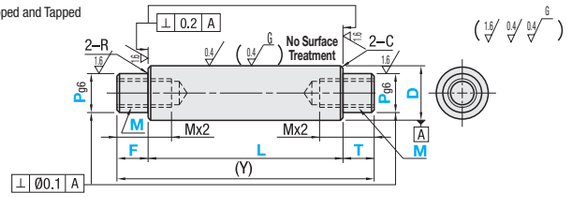
■For High Precision Linear Shafts with high perpendicular precision of the shaft end (⊥ 0.03), see ☞ **P.195**.
■For Both Ends Stepped and Tapped with Wrench Flats, see ☞ **P.131.**

RoHS10

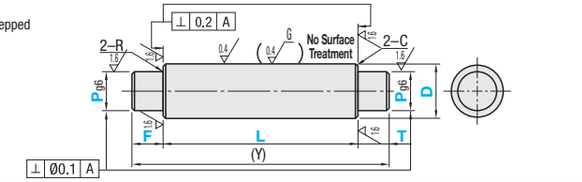
- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm). ☞ **P.112**
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness ☞ **P.111**
- Features of LTBC Plating ☞ **P.128**

Type: Both Ends Stepped and Tapped D Tol. g6	Both Ends Stepped and Tapped D Tol. h5	Both Ends Stepped and Tapped D Tol. f8	Both Ends Stepped D Tol. g6	Both Ends Stepped D Tol. h5	Both Ends Stepped D Tol. f8	Material	Hardness	Surface Treatment
SFAH	SFUH	-	SFAJ	SFUJ	-	EN 1.3505 Equiv.	Effective Hardened Depth of Induction Hardening ☞ **P.112**	-
SSFAH	SSFUH	-	SSFAJ	SSFUJ	-	EN 1.4125 Equiv.		
PSFAH	PSFUH	-	PSFAJ	PSFUJ	-	EN 1.3505 Equiv.	EN 1.3505 Equiv. 58HRC~	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 5μ or More
PSSFAH	PSSFUH	-	PSSFAJ	PSSFUJ	-	EN 1.4125 Equiv.	EN 1.4125 Equiv. 56HRC~	
RSFAH	-	-	RSFAJ	-	-	EN 1.3505 Equiv. EN 1.4125 Equiv.		LTBC Plating
-	-	PSFGH	-	-	PSFGJ	EN 1.1191 Equiv.	-	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 10μ or More
-	-	PSSFGH	-	-	PSSFGJ	EN 1.4301 Equiv.		

Both Ends Stepped and Tapped



Both Ends Stepped



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			

Part Number Type	D	L	F, T	P	M (Coarse) Selection	(Y) Max.	R	C
Both Ends Stepped and Tapped (D Tolerance g6) SFAH SSFAH PSFAH PSSFAH RSFAH (D≤30, L≤500) (D Tolerance f8) PSFGH PSSFGH	8	25~796		6	3	800	0.3 or Less	0.5 or Less
(D Tolerance h5) SFUH SSFUH PSFUH PSSFUH	10	25~796		6~8	3 4 5	800		
Both Ends Stepped (D Tolerance g6) SFAJ SSFAJ PSFAJ PSSFAJ RSFAJ (D≤30, L≤500) (D Tol. f8) PSFGJ PSSFGJ	12	25~996		6~10	3 4 5 6	1000		
(D Tolerance h5) SFUJ SSFUJ PSFUJ PSSFUJ	13	25~996		6~11	3 4 5 6 8	1000		
	15	25~996		6~13	3 4 5 6 8 10	1000		
	16	25~1196	2≤F≤Px4	6~14	3 4 5 6 8 10	1200		
	18	25~1196		8~16	4 5 6 8 10 12	1200		
	20	25~1196	2≤T≤Px4	8~17	4 5 6 8 10 12	1200		1.0 or Less
	25	25~1196		8~22	4 5 6 8 10 12 16	1200		
	30	25~1496		9~27	5 6 8 10 12 16 20 24	1500		
	35	25~1496		9~32	5 6 8 10 12 16 20 24	1500	0.5 or Less	
	40	25~1496		11~37	6 8 10 12 16 20 24 30	1500		
	50	25~1496		11~47	6 8 10 12 16 20 24 30	1500		

- Both Ends Tapped (♀) P dimensions require M+3≤P. (♀)When (Mx2.5+4)x2≥(Y), tap pilot hole may go through.

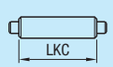
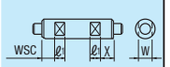
Ordering Example

Part Number	L	F	P	M	T
SSFAH18	200	F20	P15	M8	T20
SFAH20	400	F25	P16	M10	T20
SFAJ20	400	F25	P16		T20

Alterations

Part Number	L	F	P	M (MD, ND)	T	(LKC, WSC⋯etc.)
SFAH20	400	F25	P16	M10	T20	LKC

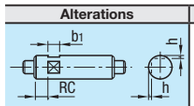
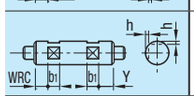
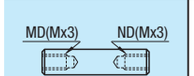
Alteration Details ☞ **P.113**

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
	WSC	Wrench Flats at Two Locations Ordering Code WSC12-X8 WSC, X=1mm Increment (♀) WSC+X+ℓ1x2<L (♀) WSC(X)≥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 (♀) FC≤3xD (♀) When 1.5xD<FC, FC≤L/2 (♀) E=0 or E≥2 ⊗Not available in combination with WFC.
	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	W	ℓ1	D	W	ℓ1
8	7	8	20	17	10
10	8		25	22	
12	10		30	27	15
13	11	10	35	30	
15	13		40	36	20
16	14		50	41	
18	16				

D	h
8~18	1
20~40	2
50	3

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.
•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 ND	Change the effective tap depth to M(N)x3. Ordering Code MD6/ND6 (M is changed to MD, N is changed to ND) Application Notes Only applicable to D=6~30, M(N)=6~20 (♀)Both Ends Stepped and Tapped: MDx3.5+4+NDx3.5+4≥L

For details, see Shaft Alteration Overview. ☞ **P.113**

(♀)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	Unit Price Min. L 1~50	L51 51~100	L101 101~150	L151 151~200	L201 201~250	L251 251~300	L301 301~350	L351 351~400	L401 401~450	L451 451~500	L501 501~550	L551 551~600	L601 601~650	L651 651~700	L701 701~750	L751 751~800	L801 801~850	L851 851~900	L901 901~950	L951 951~1000	L1001 1001~1100	L1101 1101~1200	L1201 1201~1300	L1301 1301~1400	L1401 1401~1496
SFAH (♀)SFUH (♀)SFAJ (♀)SFUJ	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
	15																					-	-	-	-	-
	16																							-	-	-
	18																							-	-	-
	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									
SSFAH (♀)SSFUH (♀)SSFAJ (♀)SSFUJ	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
	15																					-	-	-	-	-
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	35																									
	40																									
	50																									
PSFAH (♀)PSFUH (♀)PSFAJ (♀)PSFUJ	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
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	35																									
	40																									
	50																									
PSSFAH (♀)PSSFUH (♀)PSSFAJ (♀)PSSFUJ	8																	-	-	-	-	-	-	-	-	-
	10																	-	-	-	-	-	-	-	-	-
	12																					-	-	-	-	-
	13																					-	-	-	-	-
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	20																							-	-	-
	25																							-	-	-
	30																									
	35																									
	40																									
	50																									

- Both Ends Stepped and Tapped
- Both Ends Stepped

Part Number Type	D	Unit Price Min. L 1~50	L51 51~100	L101 101~150	L151 151~200	L201 201~300	L301 301~400	L401 401~500
RSFAH (♀)RSFAJ	8							
	10							
	12							
	13							
	15							
	16							
	18							
	20							
	25							
	30							

Part Number Type	D	Unit Price Min. L 1~100	L101 101~200	L201 201~400	L401 401~600	L601 601~800	L801 801~1000	L1001 1001~1200	L1201 1201~1500
PSFGH (♀)PSFGJ	8, 10						-	-	-
	12, 13							-	-
	15, 16								-
	18, 20								-
	25								-
	30								
	35								
	40								
	50								

Part Number Type	D	Unit Price Min. L 1~100	L101 101~200	L201 201~400	L401 401~600	L601 601~800	L801 801~1000	L1001 1001~1200	L1201 1201~1500
PSSFGH (♀)PSSFGJ	8, 10						-	-	-
	12, 13							-	-
	15, 16								-
	18, 20								-
	25								-
	30								
	35								
	40								
	50								