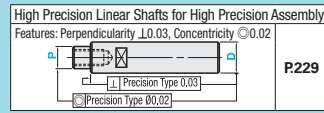


Shafts

One End Stepped and Tapped with Wrench Flats



For High Precision Linear Shafts with high perpendicular precision of the shaft end ($\perp 0.03$), see **P.229**. For Shafts w/o Wrench Flats, see **P.165**.

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

Type		Material	Hardness	Surface Treatment
SFPG	SFPU	SUJ2	Effective Hardened	-
SSFPG	SSFPU	SUS440C Equivalent	Depth of Induction Hardening P.142	-
PSFPG	PSFPU	SUJ2	SUJ2 58HRC~	Hard Chrome Plating - Plating Hardness: HV750 - Plating Thickness: 5µ or More
PSSFPG	PSSFPU	SUS440C Equivalent	SUS440C Equivalent 56HRC~	Low Temp. Black Chrome Plating
RSFPG	-	SUJ2	-	Low Temp. Black Chrome Plating
-	-	PFPGG	S45C Equivalent	Hard Chrome Plating - Plating Hardness: HV750 - Plating Thickness: 10µ or More
-	-	PSFPGG	SUS304	Hard Chrome Plating - Plating Hardness: HV750 - Plating Thickness: 10µ or More

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	1mm Increments			M(Coarse) Selection	Wrench Flats Dimensions		(Y) Max.	R	C
		D	L	F		SC	W			
(D Tol. g6) SFPG SSFPG PSFPG PSSFPG RSFPG (D≤30, L≤500)	(D Tol. h5) SFPU SSFPU PSFPU PSSFPU	8	25-998		6	3	7	8	800	0.5 or Less
		10	25-998		6-8	3 4 5	8	8	800	
		12	25-1198		6-10	3 4 5 6	10	10	1000	
		13	25-1198		6-11	3 4 5 6 8	11	11	1000	
		15	25-1198		6-13	3 4 5 6 8 10	13	13	1000	
		16	25-1198		6-14	3 4 5 6 8 10	14	10	1200	
		18	25-1198	2≤F≤Px4	8-16	4 5 6 8 10 12	16	16	1200	
		20	25-1198		8-17	4 5 6 8 10 12	17	17	1200	
		25	25-1198		8-22	4 5 6 8 10 12 16	22	22	1200	
		30	25-1498		9-27	5 6 8 10 12 16 20 24	27	15	1500	
(D Tol. f8) PFPGG PSFPGG		35	25-1498		9-32	5 6 8 10 12 16 20 24	30	15	1500	0.5 or Less
		40	25-1498		11-37	6 8 10 12 16 20 24 30	36	15	1500	
		50	25-1498		11-47	6 8 10 12 16 20 24 30	41	20	1500	

P dimensions require $M+3\leq P$. (Y) dimensions require $Mx2.5+4\geq Y$. Tap pilot holes may go through.

Ordering Example: Part Number - L - F - P - M - SC
 SFPG20 - 400 - F25 - P16 - M10 - SC10
 SFPU20 - 500 - F25 - P16 - M10 - SC10

Alterations: Part Number - L - F - P - M(MD) - SC - (LKC, FC--etc.)
 SFPG30 - 400 - F25 - P16 - M10 - SC10 - LKC

Alterations	Code	Spec.
	LKC	Alteration to L dimension tolerance [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
	SX	Second Set of Wrench Flats [Ordering Code] SX15 SX=1mm Increment SC+SX+l1<2<L SX≥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≤30: FC≤5xD D≥35: FC≥3xD 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 D≤30: WFC≤5xD D≥35: WFC≤3xD A(E)=0 or A(E)≥2 Orientation between set screw flats is not coplanar. Not available in combination with FC.

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. **P.144**
 Alterations may lower hardness. See **P.142**.

Alterations	Code	Spec.
	RC	90-deg. Set Screw Flat at One Location [Ordering Code] RC10 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 Only applicable to D=10 ~ 30. Not available in combination with RC. Orientation between two set screw flats is not coplanar.
	KC	Keyway [Ordering Code] KC10-G10
	WKC	Keyways at Two Locations [Ordering Code] WKC10-C8-KC10-G10 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) Only applicable to D=10-30 and M=6-20 One End Tapped: MDx3.5+4≤L Not available in combination with KC, WSC.
	LFC	Set Screw Flat at Step Parts [Ordering Code] LFC10-A0 LFC+A≤F D-M≥1

Alteration Details **P.143**

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			
SFPG SFPU		8	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200	1300	1400	1498			
		10																												
		12																												
		13																												
		15																												
		16																												
		18																												
		20																												
		25																												
		30																												
PSFPG PSSFPU		8																												
		10																												
		12																												
		13																												
		15																												
		16																												
		18																												
		20																												
		25																												
		30																												
PSSFPG PSSFPU		8																												
		10																												
		12																												
		13																												
		15																												
		16																												
		18																												
		20																												
		25																												
		30																												

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
RSFPG		8							
		10							
		12							
		13							
		15							
		16							
		18							
		20							
		25							
		30							

Part Number	Type	D	Unit Price							
			Min. L	L101	L201	L401	L601	L801	L1001	L1201
PFPGG		8, 10	100	200	400	600	800	1000	1200	1498
		12								
		13								
		15, 16								
		18, 20								
		25								
		30								
		35								
		40								
		50								

Part Number	Type	D	Unit Price							
			Min. L	L101	L201	L401	L601	L801	L1001	L1201
PSSFPGG		8, 10	100	200	400	600	800	1000	1200	1498
		12								
		13								
		15, 16								
		18, 20								
		25								
		30								
		35								
		40								
		50								