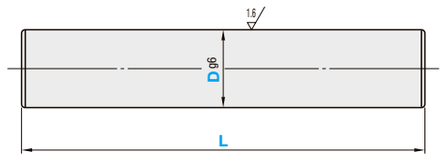
Rotary Shafts
End Shape Selectable

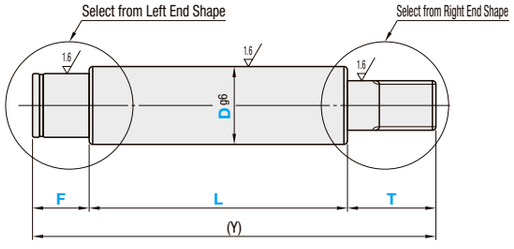


RoHS

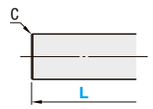
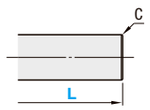
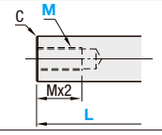
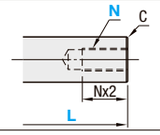
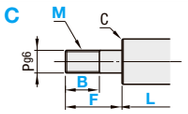
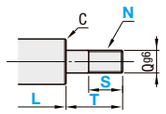
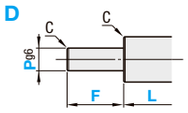
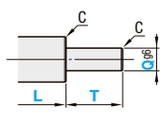
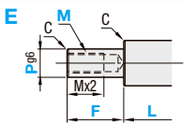
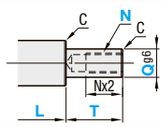
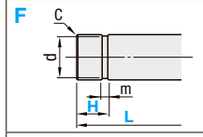
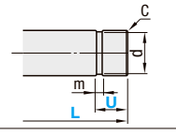
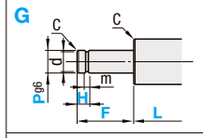
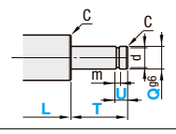
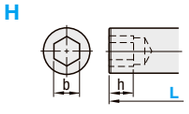
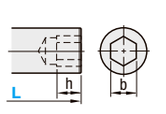
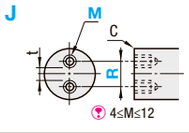
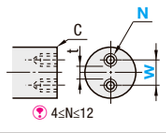
Type	Material	Surface Treatment
SFR□□	S45C Equivalent	Black Oxide
PSFR□□		Electroless Nickel Plating
SSFR□□		-

Base Shape (A Shape on Both Ends)





- (Y)≤Dx50 is required for (Y) dimension.
- When only one end needs to be machined, select A Shape for the other end.
- When L dimension is less than the tap pilot hole depth, the pilot hole might go through.

Left End Shape	Right End Shape	Machining Conditions
A 	A 	-
B 	B 	For M3~8, M≤D-2 For M10~16, M≤D-3 For M20 or 24, M≤D-4 For M30, M≤D-5
C 	C 	P(Q)=M(N) Specify M(N) Dimension. Specification of P(Q) dimension is not required.
D 	D 	-
E 	E 	For M3 ~ 8, M(N)≤P(Q)-2 For M10 ~ 16, M(N)≤P(Q)-3 For M20 or 24, M(N)≤P(Q)-4 For M30, M(N)≤P(Q)-5
F 	F 	For Retaining Ring Groove Dimensions, see **2-P.265**. D dimension 27, 31, 33, 34, 36, 37, 38, 39, 41, 42, 43, 44, 46, 47, 48 or 49 cannot be specified.
G 	G 	For Retaining Ring Groove Dimensions, see **2-P.265**. P dimension 27, 31, 33, 34, 36, 37, 38, 39, 41, 42, 43, 44, 46, 47, 48 or 49 cannot be specified.
H 	H 	For details of hex socket dimensions, see **P.820**. Applicable when D≤30.
J  ④ 4≤M≤12	J  ④ 4≤N≤12	R(W)-M(N)≥t D-R-M≥2 D-W-N≥2

M(N)	t_{min}
4~ 5	0.8
6~12	1.0

Tap Depth Mx2 Nx2

Part Number			1mm Increment	0.1mm Increment		1mm Increment			Selection	1mm Increment	C
Type	Left End Shape	Right End Shape	D	L	F, T	B, S	H, U	P, Q	M, N	R, W	
SFR PSFR SSFR	A B C D E F G H J	A B C D E F G H J	6~50	20.0~800.0 (L≤Dx50)	2≤F≤Px5 2≤T≤Qx5	When M, N≤10 2≤B≤Mx3 2≤S≤Nx3 & B≤F-3 S≤T-3 When M, N≥12 2≤B≤Mx3 2≤S≤Nx3 & B≤F-5 S≤T-5	When D, P, Q≤6 2≤H, U When 6<D, P, Q≤10 3≤H, U When 10<D, P, Q≤20 4≤H, U When 20<D, P, Q 5≤H, U	D/3≤P, Q<D	3 4 5 6 8 10 12 16 20 24 30	D≥M+4+R D≥N+4+W R≥M+3 W≥N+3	0.5

④For D Dimension, 31, 37, 39, 41~44 or 46~49 cannot be specified.

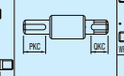
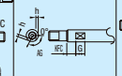
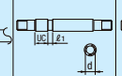
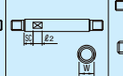
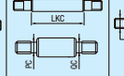
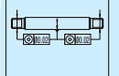
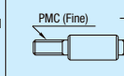
Type	D	Material Unit Price Left Shaft: A Shape, Right Shaft: A Shape								Shaft End Machining Unit Price							
		L20.0 ~ 50.0	L50.1 ~ 100.0	L100.1 ~ 150.0	L150.1 ~ 200.0	L200.1 ~ 300.0	L300.1 ~ 400.0	L400.1 ~ 600.0	L600.1 ~ 800.0	B	C	D	E	F	G	H	J
SFR□□	6~10								-								-
	11~15																-
	16~20																
	21~25																
	26~30																
	31~35																
	36~40															-	
	41~50																
PSFR□□	6~10								-								-
	11~15																-
	16~20																
	21~25																
	26~30																
	31~35																
	36~40															-	
	41~50																
SSFR□□	6~10								-								-
	11~15																-
	16~20																
	21~25																
	26~30																
	31~35																
	36~40															-	
	41~50																

Ordering Example

Part Number	-	D	-	L	-	F	-	B	-	H	-	P	-	M	-	T	-	S	-	U	-	Q	-	N	-	R	-	W
SFRCE	-	D15	-	L350	-	F20	-	B16						M8	-	T20						Q14	-	N6				

Alterations

Part Number	-	D	-	L	-	F	-	B	-	H	-	P	-	M (PMC)	-	T	-	S	-	U	-	Q	-	N (QNC)	-	R	-	W	-	(KC, WKC, FC~etc.)
SFRCE	-	D15	-	L350	-	F20	-	B16						PMC8	-	T20						Q14	-	N6					-	LKC

	Keyway	Keyway on Shaft End	Set Screw Flat	2 Set Screw Flats (Angle Specified)	Slit Cam Groove	Wrench Flats	Undercut / L Dimension Tolerance	Concentricity	Fine Thread
Alterations	• 1 Keyway: KC • 2 Keyways: WKC		• 1 Set Screw Flat: FC • 2 Set Screw Flats: WFC						
Code	KC, WKC	PKC, QKC	FC, WFC	KFC	UC	SC	PC, QC, LKC	CKC	PMC, QNC
Spec.	KC:Adds a keyway. Ordering Code KC50-A10 WKC:Adds two keyways. Ordering Code WKC50-C8-K40-E10 ④KC, A, WKC, C, KE = 1mm Increment ④A, E, C≤100 ④For Keyway Details, refer to **P.820**. ④If 3 keyways are required, use both KC and WKC. ④When the keyway position is less than 1mm away from the end face, R is not applied. Ex.	Adds a keyway on the shaft end P (Q). Ordering Code PKC10(QKC10) ④PKC, QKC=1mm Increment ④PKC, QKC≤50 PKC(QKC)≤F(T) ④Available for shaft end shapes C and D only. ④For Keyway Details, refer to **P.820**. ⊗Not applicable to P (Q)=5 or less.	FC:Adds 1 set screw flat. Ordering Code FC10-G3 WFC:Adds 2 set screw flats. Ordering Code WFC10-J3-W10-V3 ④FC, G, WFC, J, W, V = 1mm Increment ④G, J, V≤50 D: 6~15 h: 1; 16~40 2; 41~50 3 ④When combined with other alterations, ±2 degree phase differential may occur.	Adds a set screw flat at any desired angle besides the datum plane (0°). KFC, G= 1mm Increment AG = 15° Increment ④G≤50 Ordering Code KFC10-G3-AG90 D: 6~15 h: 1; 16~40 2; 41~50 3 ④When combined with other alterations, ±2 degree phase differential may occur.	Adds a slit cam groove. UC = 1mm Increment Ordering Code UC10 ④UC+ℓ1≤L ④UC≥1 D: 6 5 ℓ1=4; 8 7; 10 8; 12 10 ℓ1=5 ⊗Not applicable for D dimensions other than indicated above	Adds a wrench flat. SC = 1mm Increment ④SC+ℓ2≤L SC=0 or SC≥1 D: 6,7 W=5; 8,9 7; 10,11 8; 12~14 10; 15~19 13; 20~24 17; 25~29 22; 30~34 27; 35~39 30; 40~49 36; 50 41 ℓ2=8; 10; 15; 20 ④When combined with other alterations, ±2 degree phase differential may occur.	PC, QC: Adds an undercut on P and Q. Ordering Code PC ④For detailed undercut dimensions, refer to **P.820**. ④F-B≤Mx2 ⊗Not applicable when D=P or D=Q. LKC: Changes L dimension tolerance. Ordering Code LKC ④L<500⋯L±0.05 L≥500⋯L±0.1	Changes the concentricity to Ø0.02. Ordering Code CKC	Changes threads to Fine Thread in the table below. Ordering Code PMC20(QNC16) D: 6,7 3 4 5 6; 8,9 3 4 5 6 8; 10,11 4 5 6 8 10; 12~14 5 6 8 10 12; 15~19 5 6 8 10 12 15 17; 20~24 6 8 10 12 15 17 20; 25~29 8 10 12 15 17 20 25; 30~34 8 10 12 15 17 20 25 30; 35~39 10 12 15 17 20 25 30 35; 40~49 12 15 17 20 25 30 35 40; 50 15 17 20 25 30 35 40 Pitch: 0.35 0.5 0.75 1.0 1.5 ④P (Q) dimension is the same as PMC (QMC). ④Use PMC (QNC) to specify M (N) dimension.
	④Keyway(s) and set screw flats are added in the same plane. When the distance of the alterations are over 500mm, ±2 degree phase differential may occur.								