

Shafts

Surface Fully Plated Type

☑ Surface treatment is also applied to shaft ends.



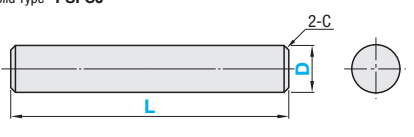
RoHS 10

- ☑ L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness **☑ P.141**
- ☑ Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm).
- ☑ Shafts may have centering holes at end faces depending on shapes.

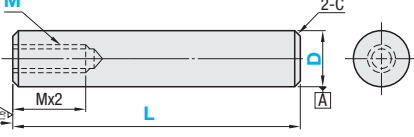
Type					D Tol.	M Material	H Hardness	S Surface Treatment
Solid	One End Tapped	Both Ends Tapped	One End Stepped and Tapped	One End Stepped, Both Ends Tapped				
PSFCJ	PSFCT	PSFCW	PSFCG	PSFCA	g6	SUJ2	Effective Hardened Depth of Induction Hardening ☑ P.142 SUJ2 58HRC~	Electroless Nickel Plating

☑ The surface roughness of D part is $\sqrt{0.4}$.

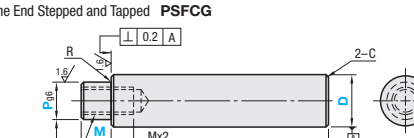
Solid Type PSFCJ



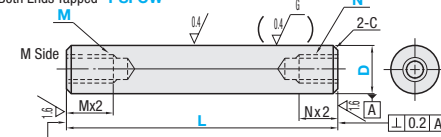
One End Tapped PSFCT



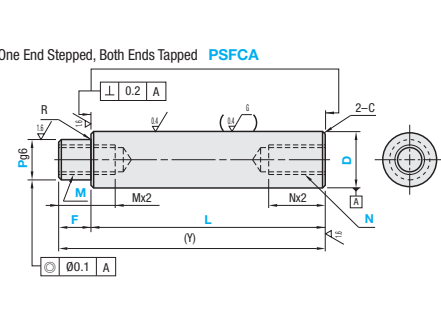
One End Stepped and Tapped PSFCG



Both Ends Tapped PSFCW



One End Stepped, Both Ends Tapped PSFCA



☑ Use "Oil-Free Bushings" for sliding applications. **P.415~436** (Using rolling ball elements such as linear ball bushings on electroless nickel plated shafts may result in flaking of the nickel plating layer.)

☑ Solid / One End Tapped / Both Ends Tapped

Part Number		1mm Increments	Selection												C									
Type	D	L	M						N (Both Ends Tapped Type only)															
Solid Type PSFCJ	8	20~ 800	3	4	5					3	4	5				0.5 or Less								
	10	20~ 800	3	4	5	6					3	4	5	6										
	12	20~1000	4				5	6	8			4	5	6	8									
One End Tapped PSFCT	15	25~1000	4				5	6	8	10			4	5	6	8	10	1.0 or Less						
	20	30~1000	4				5	6	8	10	12			4	5	6	8		10	12				
Both Ends Tapped PSFCW	25	35~1000	4				5	6	8	10	12	16			4	5	6		8	10	12	16		
	30	35~1000					6	8	10	12	16	20			6				8	10	12	16	20	
	35	35~1000					8	10	12	16	20	24			8				10	12	16	20	24	
	40	50~1000					10	12	16	20	24	30			10				12	16	20	24	30	
	50	65~1000					12	16	20	24	30			12					16	20	24	30		

- ☑ For One End Tapped Type, when $M \times 2.5 + 4 \geq L$, tap pilot holes may go through.
- ☑ For Both Ends Tapped Type, when $M \times 2.5 + 4 \times 2 \geq L$, tap pilot holes may go through and the effective length of the smaller tap part may be shortened.

☑ One End Stepped and Tapped / One End Stepped, Both Ends Tapped

Part Number		1mm Increments			Selection		(Y)Max.	R	C
Type	D	L	F	P	M	N (One End Stepped, Both Ends Tapped Type only)			
One End Stepped and Tapped PSFCG	8	25~798	2≤F≤P×4	6	3	3 4 5	800	0.5 or Less	0.4 or Less
	10	25~798		6~ 8	3 4 5	3 4 5 6	800		
	12	25~998		6~10	3 4 5 6	4 5 6 8	1000		
	15	25~998		6~13	3 4 5 6 8 10	4 5 6 8 10	1000		
One End Stepped, Both Ends Tapped PSFCA	20	25~998		8~17	4 5 6 8 10 12	4 5 6 8 10 12	1000	1.0 or Less	
	25	25~998		8~22	4 5 6 8 10 12 16	4 5 6 8 10 12 16	1000		
	30	25~998		9~27	5 6 8 10 12 16 20 24	6 8 10 12 16 20	1000		
	35	25~998		9~32	5 6 8 10 12 16 20 24	8 10 12 16 20 24	1000		
	40	25~998		11~37	6 8 10 12 16 20 24 30	10 12 16 20 24 30	1000		
	50	25~998		11~47	6 8 10 12 16 20 24 30	12 16 20 24 30	1000		

- ☑ For One End Stepped and Tapped Type, when $P \geq M + 3$ and $M \times 2.5 + 4 \geq Y$, tap pilot holes may go through.
- ☑ For One End Stepped, Both Ends Tapped Type, when $P \geq M + 3$ and $M \times 2.5 + 4 \times 2 \geq Y$, tap pilot holes may go through and the effective length of the smaller tap part may be shortened.

	Ordering Example	Part Number	-	L	-	F	-	P	-	M	-	N
		PSFCJ20	-	75								
		PSFCT20	-	525						M8		
		PSFCW20	-	525						M8	-	N8
		PSFCG20	-	400	-	F25	-	P16	-	M10		
		PSFCA20	-	400	-	F25	-	P16	-	M10	-	N10

☑ Solid

Part Number		Unit Price									
Type	D	Min. L	L51	L101	L151	L201	L301	L401	L501	L601	L801
PSFCJ	8	50	100	150	200	300	400	500	600	800	1000
	10										-
	12										-
	15										
	20										
	25										
	30										
	35										
	40										
	50	-									

☑ One End Tapped

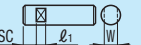
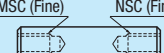
Part Number		Unit Price									
Type	D	Min. L	L51	L101	L151	L201	L301	L401	L501	L601	L801
PSFCT	8	50	100	150	200	300	400	500	600	800	1000
	10										-
	12										-
	15										
	20										
	25										
	30										
	35										
	40										
	50	-									

☑ One End Stepped and Tapped

Part Number		Unit Price									
Type	D	Min. L	L51	L101	L151	L201	L301	L401	L501	L601	L801
PSFCG	8	50	100	150	200	300	400	500	600	800	1000
	10										-
	12										-
	15										
	20										
	25										
	30										
	35										
	40										
	50	-									

	Alterations	Part Number	-	L	-	M	-	N	-	(SC FC~etc.)
		PSFCW20	-	525	-	M8	-	N8	-	SC0

- ☑ Surface treatment will be also applied to altered areas.
- ☑ Alterations may lower hardness. See **☑ P.142**.
- ☑ When selecting multiple alteration additions, the distance between machined areas should be greater than 2mm. **☑ P.144**

Alterations	Alteration to L dimension tolerance	Wrench Flats	Set Screw Flat	Fine Tap																																																										
																																																														
Code	LKC	SC	FC	MSC, NSC																																																										
Spec.	Changes L tolerance. Ordering Code LKC ⚡ L<200 →L±0.03 200≤L<500→L±0.05 L≥500 →L±0.1 ⚡ L dimensions can be specified in 0.1mm increment for LKC. ⚡ Not applicable to One End Threaded with O.D. same as Shaft O.D.	Adds wrench flats. Ordering Code SC5 ⚡ SC = 1mm Increment ⚡ SC+l1≤L SC≥0 <table><tr><th>D</th><th>W</th><th>l1</th></tr><tr><td>8</td><td>7</td><td rowspan="2">8</td></tr><tr><td>10</td><td>8</td></tr><tr><td>12</td><td>10</td><td rowspan="2">15</td></tr><tr><td>15</td><td>13</td></tr><tr><td>20</td><td>17</td><td rowspan="2">20</td></tr><tr><td></td><td></td></tr></table>	D	W	l1	8	7	8	10	8	12	10	15	15	13	20	17	20			Adds a screw flat. Ordering Code FC10-E8 ⚡ FC, E=1mm Increment ⚡ FC≤D×3 ⚡ When 1.5D<FC, FC≤L/2 ⚡ E=0 or E≥2 <table><tr><th>D</th><th>h</th></tr><tr><td>8~15</td><td>1</td></tr><tr><td>20~40</td><td>2</td></tr><tr><td>50</td><td>3</td></tr></table>	D	h	8~15	1	20~40	2	50	3	Changes tapped threads to fine tapped threads shown in the table below. Ordering Code MSC14 ⚡ Specify in reference to D dimensions for One End Threaded Shafts; P dimensions for One End Stepped and Tapped Shafts. <table><tr><th colspan="2">D, P</th><th colspan="2">MSC, NSC</th></tr><tr><td>12</td><td>8</td><td></td><td></td></tr><tr><td>15</td><td>8</td><td>10</td><td></td></tr><tr><td>20</td><td>8</td><td>10</td><td>12 14</td></tr><tr><td>25~35</td><td>8</td><td>10</td><td>12 14 18</td></tr><tr><td>40</td><td>10</td><td>12</td><td>14 18</td></tr><tr><td>50</td><td>10</td><td>12</td><td>14 18</td></tr><tr><td>Pitch</td><td>1.0</td><td>1.25</td><td>1.5</td></tr></table> ⚡ Specify M dimensions with MSC. ⚡ M dimension is equal to MSC.	D, P		MSC, NSC		12	8			15	8	10		20	8	10	12 14	25~35	8	10	12 14 18	40	10	12	14 18	50	10	12	14 18	Pitch	1.0	1.25	1.5
	D	W	l1																																																											
8	7	8																																																												
10	8																																																													
12	10	15																																																												
15	13																																																													
20	17	20																																																												
D	h																																																													
8~15	1																																																													
20~40	2																																																													
50	3																																																													
D, P		MSC, NSC																																																												
12	8																																																													
15	8	10																																																												
20	8	10	12 14																																																											
25~35	8	10	12 14 18																																																											
40	10	12	14 18																																																											
50	10	12	14 18																																																											
Pitch	1.0	1.25	1.5																																																											