

Pivot Pins

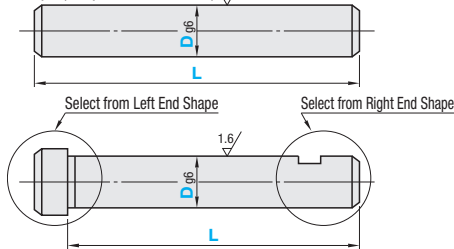
End Shape Combination Selectable



RoHS 10

Type	Material	Surface Treatment	Hardness
FCL □	S45C Equivalent	Black Oxide	40~45HRC
FCLH □		Electroless Nickel Plating	40~45HRC
PFCL □		Hard Chrome Plating: Plating Thickness 3μm or more	Plating Hardness 750HV~
GFCL □	SUS304	-	-
FCLSH □	SUS440C Equivalent	Hard Chrome Plating: Plating Thickness 3μm or more	45~50HRC
GFCLSH □		Hard Chrome Plating: Plating Thickness 3μm or more	45~50HRC Plating Hardness 750HV~

Basic Shape (Shape A at Both Ends) 1.6/



- For L Dimension, Standard Machining Tolerances (Class: Medium) is used.
 - When machining is needed at one end only, select Shape A for the other end.
 - There are identification grooves on the side of FCL □ and PFCL □ to be distinguished from Hardened Type.
 - FCLSH □ and GFCLSH □ (SUS440C equivalent) may be discolored by hardening.
 - When selecting shapes B and G or BG and GB for both ends, hole and flat positions are as shown in the catalog. The angle tolerance is ±5°.
- ex)
- This type may have centering holes depending on shapes and dimensions.
 - When L ≤ the depth of tap's pilot hole, the pilot hole might go through.
 - Shape D: Relief dimension under the shoulder is for reference.
 - Selecting Shape D (FLDD) for both ends is not available.
 - When Shape F is selected, 11 ≤ L.

Shape C: e, m Dimensions for Selection

D	Ref. Dim.	Tolerance	m	e
3	2	+0.06	0.5	0
4	3	0	0.7	0
5	4	+0.075	0	0
6	5	0	0.9	0
7	6	0	0.9	0
8	7	+0.09	0	0
9	8	0	1.15	0
10	9.6	-0.09	0	0
11	10.5	0	1.15	0
12	11.5	0	1.15	0
13	12.4	0	1.15	0
14	13.4	0	1.15	0
15	14.3	-0.11	1.15	0
16	15.2	0	1.35	0
17	16.2	0	1.35	0
18	17	0	1.35	0
19	18	0	1.35	0
20	19	-0.21	1.35	0

Shape D: u (n) Dimensions for Selection

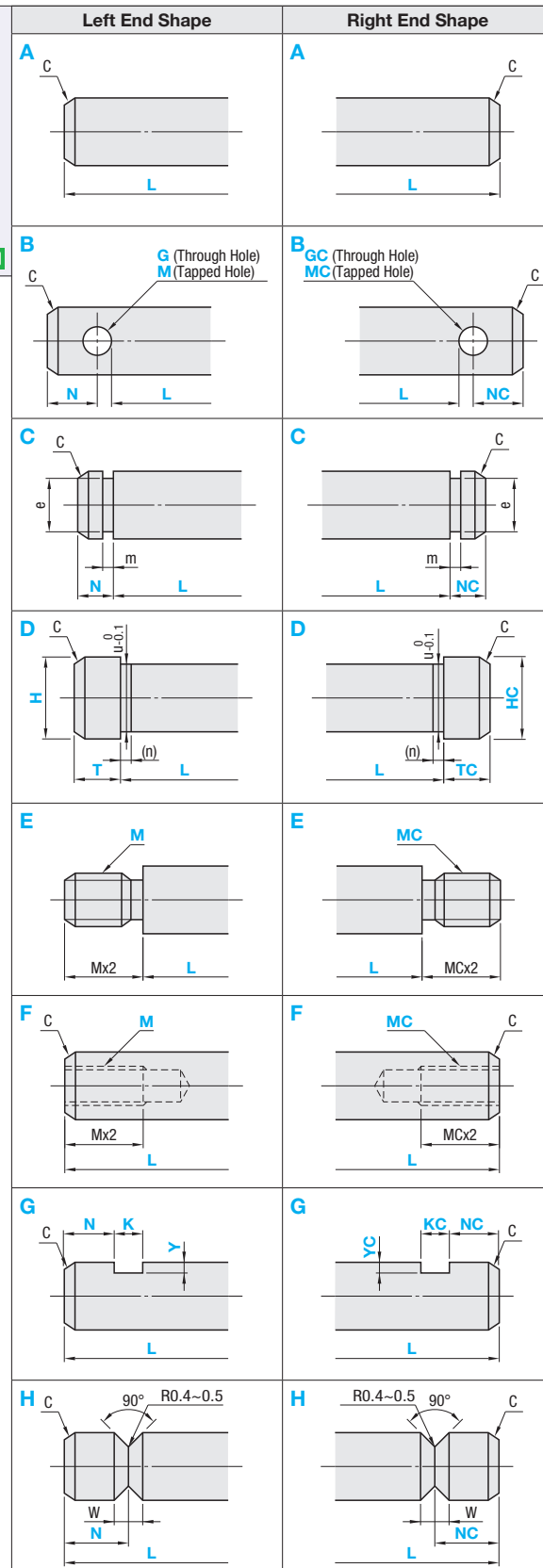
D	u	n
3	2.9	0.5
4	3.9	0.5
5	4.9	0.5
6	5.8	0.5
7	6.8	0.5
8	7.8	0.5
9	8.8	0.5
10	9.8	0.5
11	10.8	0.5
12	11.8	0.5
13	12.8	0.5
14	13.8	0.5
15	14.8	0.5
16	15.8	0.5
17	16.8	0.5
18	17.8	0.5
19	18.8	0.5
20	19.8	0.5

Shape E: Details of Thread Relief Machining

M (Coarse)	M×Pitch	g	r	f
3	M3×0.5	1.2	0.3	0.9
4	M4×0.7	1.2	0.3	0.9
5	M5×0.8	1.2	0.3	0.9
6	M6×1.0	2.5	0.6	1.7
8	M8×1.25	2.5	0.6	1.7
10	M10×1.5	3	1.0	2.2
12	M12×1.75	3	1.0	2.2
16	M16×2.0	3	1.0	2.2

Shape H: W Dimension for Selection

D	W
6	1.5
7	1.5
8	1.5
9	1.5
10	2
11	2
12	2
13	2
14	2
15	2
16	2
17	2
18	2
19	3
20	3



Part Number	1mm Increment			0.1mm Increment				0.5mm Increment	Selection	C			
	Type	Left End Shape	Right End Shape	D	L	T (TC)	N (NC)	G (GC)	K (KC)		Y (YC)	H (HC)	M (MC) (Coarse)
FCL	A	A		3~20			2≤N(NC)≤L/4 (Shaft End Shape C)					3	0.5 or Less
FCLH	B	B		4≤D (Shaft End Shape E)	5~200 (L≤Dx20)	0.5≤T(TC)≤L/4	G(GC)·M(MC)/2+1 ≤N(NC)≤L/4 (Shaft End Shape B)					4	
PFCL	C	C		6≤D (Shaft End Shape B, F, H)			N(NC)=0 or 2≤N(NC)≤L/4 (Shaft End Shape G)	D/5≤G(GC)≤D/2	2≤K(KC)≤30	Y(YC)≤D/2	D+1≤H(HC)≤D+10	5	
PFCLH	D	D					2≤N(NC)≤L/4 (Shaft End Shape H)					6	
GFCL	E	E										8	
FCLSH	F	F										10	
FCLSH	G	G										12	
GFCLSH	H	H										16	

Ordering Example: Part Number **FCL D G - D10 - L100 - T2 - N - G - K - Y - H - M - TC - NC - GC - KC - YC - HC - MC**

Example: **FCL D G - D10 - L100 - T2 - N - G - K - Y - H - M - TC - NC - GC - KC - YC - HC - MC**

Type	D	Material Unit Price				Unit Price of Shaft End Machining							
		L5.0~50.0	L50.1~100.0	L100.1~150.0	L150.1~200.0	B	C	D	E	F	G	H	
FCL □	3-5												
FCL □	6-10												
FCL □	11-15												
FCL □	16-20												
FCLH □	3-5												
FCLH □	6-10												
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FCLH □	16-20												
PFCL □	3-5												
PFCL □	6-10												
PFCL □	11-15												
PFCL □	16-20												
PFCLH □	3-5												
PFCLH □	6-10												
PFCLH □	11-15												
PFCLH □	16-20												
GFCL □	3-5												
GFCL □	6-10												
GFCL □	11-15												
GFCL □	16-20												
FCLS □	3-5												
FCLS □	6-10												
FCLS □	11-15												
FCLS □	16-20												
FCLSH □	3-5												
FCLSH □	6-10												
FCLSH □	11-15												
FCLSH □	16-20												
GFCLSH □	3-5												
GFCLSH □	6-10												
GFCLSH □	11-15												
GFCLSH □	16-20												

Alterations: Part Number **FCL D G - D10 - L100 - T2 - N - G - K - Y - H - M - TC - NC - GC - KC - YC - HC - MC - LFC (RFC), LBC (RBC), DKC**

Example: **FCL D G - D10 - L100 - T2 - N - G - K - Y - H - M - TC - NC - GC - KC - YC - HC - MC - LFC (RFC), LBC (RBC), DKC**

Alterations	Shape D: T(TC) Dimension, Wrench Flats		Shape E: M(MC) Length Change		O.D. Tolerance																							
	Left End Shape	Right End Shape	Left End Shape	Right End Shape																								
Code	LFC	RFC	LBC	RBC	DKC																							
Spec.	Ordering Code LFC (RFC) 10 LFC (RFC) = 0.5mm Increment D ≤ LFC (RFC) < H (HC)		Ordering Code LBC (RBC) 20 LBC (RBC) = 0.5mm Increment 4 ≤ LBC (RBC) ≤ M(MC)x3		Changes O.D. tolerance to h6. Ordering Code DKC																							
	<table border="1"> <thead> <tr><th>M</th><th>LBC (RBC)</th></tr> </thead> <tbody> <tr><td>M3</td><td>3 ~ 9</td></tr> <tr><td>M4</td><td>3.5 ~ 12</td></tr> <tr><td>M5</td><td>4 ~ 15</td></tr> <tr><td>M6</td><td>5.5 ~ 18</td></tr> <tr><td>M8</td><td>6.5 ~ 24</td></tr> </tbody> </table>		M	LBC (RBC)	M3	3 ~ 9	M4	3.5 ~ 12	M5	4 ~ 15	M6	5.5 ~ 18	M8	6.5 ~ 24	<table border="1"> <thead> <tr><th>M</th><th>LBC (RBC)</th></tr> </thead> <tbody> <tr><td>M10</td><td>7 ~ 30</td></tr> <tr><td>M12</td><td>8.5 ~ 36</td></tr> <tr><td>M16</td><td>9 ~ 48</td></tr> <tr><td>M20</td><td>11.5 ~ 60</td></tr> <tr><td>M24</td><td>14 ~ 72</td></tr> </tbody> </table>		M	LBC (RBC)	M10	7 ~ 30	M12	8.5 ~ 36	M16	9 ~ 48	M20	11.5 ~ 60	M24	14 ~ 72
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