

Precision Pivot Pins

End Shape Selectable

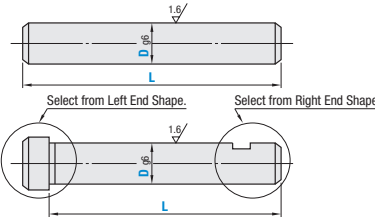
Precision Pivot Pins – End Shape Selectable



RoHS10

Type	Material	Surface Treatment	Hardness
FCL	1045 Carbon Steel or Equivalent	Black Oxide	—
FCLH		Electroless Nickel Plating	40–45 HRC min.
PFCLH		Hard Chrome Plating	40–45 HRC min.
GFCL		Hard Chrome Plating	Plating Hardness 750 HV min.
FCLS	304 Stainless Steel	—	—
FCLSH	440C Stainless Steel Equivalent	—	45–50 HRC min.
GFCLSH		Hard Chrome Plating	45–50 HRC min. Plating Hardness 750 HV min.

Base Shape (Shape A at Both Ends)



- This type may have centering holes depending on dimensions.
- For L Dimension, Standard Machining Tolerances (Class: Medium) are used.
- When machining is needed at one end only, select Shape A for the other end.
- FCL, PFCL, FCLSH may have identification grooves on the side in order to distinguish them from Hardened Type.
- FCLSH and GFCLSH (440C Stainless Steel 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 $\pm 5^\circ$.



- For $L \leq$ the depth of tap's pilot hole, the pilot hole might go through.
- Selecting Shape D (FCLDD) for both ends is not available.
- Shape D: Relief dimension under the shoulder is for reference.
- Shape F: $L \geq 11$

Shape C e / m Dimensions for Selection

D	Ref. Dims.	Tolerance	m+0.14 0
3	2	+0.06	0.5
4	3	0	
5	4	+0.075	0.7
6	5	0	
7	6	0	
8	7	+0.09	0.9
9	8	0	
10	9.6	0	
11	10.5	-0.09	
12	11.5	0	1.15
13	12.4	0	
14	13.4	0	
15	14.3	-0.11	
16	15.2	0	
17	16.2	0	
18	17	0	1.35
19	18	0	
20	19	-0.21	

Shape D (d) / (n) Dimensions for Selection

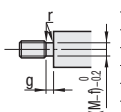
D	(d)	(n)
3	2.9	
4	3.9	
5	4.9	
6	5.9	
7	6.9	
8	7.9	
9	8.9	
10	9.9	
11	10.9	
12	11.9	
13	12.9	
14	13.9	
15	14.9	
16	15.9	
17	16.9	
18	17.9	
19	18.9	
20	19.9	

Shape H W Dimension for Selection

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

Shape E Details of Thread Relief Machining

M (Coarse Thread)	M x Pitch	g	r	f
3	M3 x 0.5	0.9	0.2–0.4	0.9
4	M4 x 0.7	1.2		
5	M5 x 0.8	1.8		
6	M6 x 1.0	2.5	0.2–0.6	1.7
8	M8 x 1.25	3		
10	M10 x 1.5			
12	M12 x 1.75			
16	M16 x 2.0			



Left End Shape		Right End Shape	
A		A	
B		B	
C		C	
D		D	
E		E	
F		F	
G		G	
H		H	

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End Shape Selectable, continued

Type	Part Number		1 mm Increment							0.1mm Increment				0.5 mm Increment	Selection	C
	Left End Shape	Right End Shape	D	L	T (TC)	N (NC)	G (GC)	K (KC)	Y (YC)	H (HC)	M (MC)	(Coarse Thread)				
FCL	A	A	3–20	5–200 (L ≤ D × 2)	0.5 ≤ T(TC) ≤ L/4	2 ≤ N(NC) ≤ L/4 (Shaft End Shape C)	D/5 ≤ G(GC) ≤ D/2	2 ≤ K(KC) ≤ 30	Y(YC) ≤ D/2	D+1 ≤ H(HC) ≤ D+10	3	0.5 or Less				
FCLH	B	B	4 ≤ D (Shaft End Shape E)			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)			0 ≤ N(NC) ≤ L/4 (Shaft End Shape G)					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											

Part Number Example: **FCL D G - D10 - L100 - T2 - H14 - NC10 - KC6.5 - YC1.5**

Type	D	Available Types				Available Types of Shaft End Machining							
		Left Shaft: A Shape	Right Shaft: A Shape	B	C	D	E	F	G	H			
FCL	3-5	•	•	•	•	•	•	•	•	•	•	•	•
	6-10	•	•	•	•	•	•	•	•	•	•	•	•
	11-15	•	•	•	•	•	•	•	•	•	•	•	•
	16-20	•	•	•	•	•	•	•	•	•	•	•	•
FCLH	3-5	•	•	•	•	•	•	•	•	•	•	•	•
	6-10	•	•	•	•	•	•	•	•	•	•	•	•
	11-15	•	•	•	•	•	•	•	•	•	•	•	•
	16-20	•	•	•	•	•	•	•	•	•	•	•	•
PFCL	3-5	•	•	•	•	•	•	•	•	•	•	•	•
	6-10	•	•	•	•	•	•	•	•	•	•	•	•
	11-15	•	•	•	•	•	•	•	•	•	•	•	•
	16-20	•	•	•	•	•	•	•	•	•	•	•	•
PFCLH	3-5	•	•	•	•	•	•	•	•	•	•	•	•
	6-10	•	•	•	•	•	•	•	•	•	•	•	•
	11-15	•	•	•	•	•	•	•	•	•	•	•	•
	16-20	•	•	•	•	•	•	•	•	•	•	•	•
GFCL	3-5	•	•	•	•	•	•	•	•	•	•	•	•
	6-10	•	•	•	•	•	•	•	•	•	•	•	•
	11-15	•	•	•	•	•	•	•	•	•	•	•	•
	16-20	•	•	•	•	•	•	•	•	•	•	•	•
FCLS	3-5	•	•	•	•	•	•	•	•	•	•	•	•
	6-10	•	•	•	•	•	•	•	•	•	•	•	•
	11-15	•	•	•	•	•	•	•	•	•	•	•	•
	16-20	•	•	•	•	•	•	•	•	•	•	•	•
FCLSH	3-5	•	•	•	•	•	•	•	•	•	•	•	•
	6-10	•	•	•	•	•	•	•	•	•	•	•	•
	11-15	•	•	•	•	•	•	•	•	•	•	•	•
	16-20	•	•	•	•	•	•	•	•	•	•	•	•
GFCLSH	3-5	•	•	•	•	•	•	•	•	•	•	•	•
	6-10	•	•	•	•	•	•	•	•	•	•	•	•
	11-15	•	•	•	•	•	•	•	•	•	•	•	•
	16-20	•	•	•	•	•	•	•	•	•	•	•	•

Part Number Alterations: **FCL D G - D10 - L100 - T2 - H14 - NC10 - KC6.5 - YC1.5 - LFC13-DKC**

Alterations	Shape D: T (TC) Dimension, Wrench Flats		Shape E M (MC) Length Change		Outer Dia. 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) = 0.5 mm Increment D ≤ LFC(RFC) < H(HC)		Ordering Code: LBC (RBC) 20 LBC (RBC) = 0.5 mm Increment 4 ≤ LBC(RBC) ≤ M(MC) × 3		Changes outer diameter tolerance to h6. Ordering Code: DKC
	Type	LBC (RBC)	Type	LBC (RBC)	
	M3	3–9	M10	7–30	
	M4	3.5–12	M12	8.5–36	
	M5	4–15	M16	9–48	
	M6	5.5–18			
	M8	6.5–24			