



TP

Self-Clinching Standoffs for Thin Panels (.025"/0.65mm Min.)

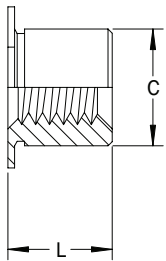
FEATURES

- Precisely spaces stacked and/or mating panels and chasses.
- Self-clinching design provides permanent installation in sheets as thin as .025" (0.63mm).
- Miniature threads and body diameters available for small-scale applications.
- Choice of RoHS compliant materials and finishes.

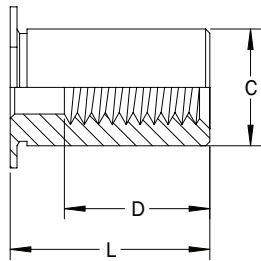


PART DESCRIPTION EXAMPLE

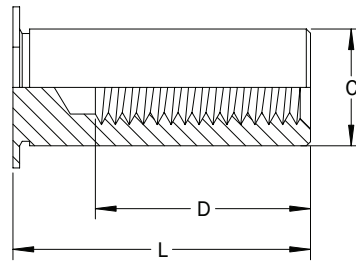
TPST — 440 — .250 — Z
 T T T T
 Material Thread Length Finish
 Code Code Code Code



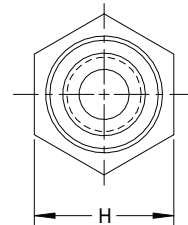
TYPE 1
(Thru)



TYPE 2
(Screw will not pass thru unthreaded end)



TYPE 3
(Blind)



GENERAL

All dimensions in inches

INCH	Thread	Thread Code	Sheet		C +.000 -.005	D Minimum Thread Depth	H Nom.
			Minimum Thickness	Hole Size +.003 -.000			
	0-80	080	.025	.128	.19	.127	.156
		4080 ¹		.166	.23	.165	.187
	2-56	4256 ¹	.025	.166	.23	.165	.187
		6256 ¹		.213	.27	.212	.250
	4-40	440	.025	.166	.23	.165	.187
		6440 ¹		.213	.27	.212	.250
6-32	632	.025	.213	.27	.212	.270	.250



TP Standoff with
C=.127"/3.23mm

(1) Standoffs with thread codes 4080, 4256, 6256 and 6440 offer greater wall thicknesses for 0-80, 2-56 and 4-40 threads, respectively.

TP Self-Clinching Standoffs for Thin Panels

GENERAL (CONTINUED)

All dimensions in millimeters

METRIC	Thread	Thread Code	Sheet			C +0.00 -0.13	D Minimum Thread Depth	H Nom.
			Minimum Thickness	Hole Size +0.08 -0.00	Minimum Distance Hole Center to Edge			
M1.6 x 0.35	2M16	0.63	3.25	4.8	3.23	3.5	3.96	
	3M16 ¹		4.22	5.8	4.19		4.76	
M2 x 0.4	M2	0.63	3.25	4.8	3.23	3.9	3.96	
	3M2 ¹		4.22	5.8	4.19		4.76	
M2.5 x 0.45	3M25	0.63	4.22	5.8	4.19	5.2	4.76	
	35M25 ¹		5.41	7.1	5.39		6.35	
M3 x 0.5	M3	0.63	4.22	5.8	4.19	6.2	4.76	
	35M3 ¹		5.41	7.1	5.39		6.35	
M3.5 x 0.6	M35	0.63	5.41	7.1	5.39	7.0	6.35	

(1) Standoffs with thread codes 3M16, 3M2, 35M25 and 35M3 offer greater wall thicknesses for M1.6, M2, M2.5 and M3 threads, respectively.

LENGTH

All dimensions in inches

INCH	Thread	L (Length) ±0.03											
		0-80	.090 ¹	.125 ¹	.187 ¹	.250 ²	.312 ²	.375 ³	.437 ³	.500 ³	.562 ³	.625 ³	.687 ^{3,4}
2-56	.090 ¹	.125 ¹	.187 ¹	.250 ¹	.312 ²	.375 ²	.437 ³	.500 ³	.562 ³	.625 ³	.687 ³	.750 ³	
4-40	.090 ¹	.125 ¹	.187 ¹	.250 ¹	.312 ²	.375 ²	.437 ²	.500 ³	.562 ³	.625 ³	.687 ³	.750 ³	
6-32	—	.125 ¹	.187 ¹	.250 ¹	.312 ¹	.375 ²	.437 ²	.500 ²	.562 ³	.625 ³	.687 ³	.750 ³	

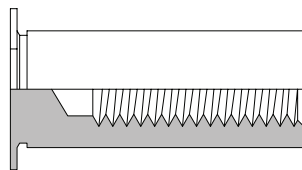
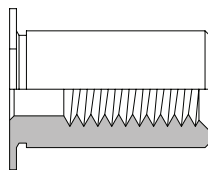
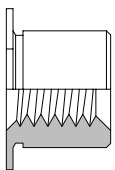
All dimensions in millimeters

METRIC	Thread	L (Length) ±0.08											
		M1.6	2.00 ¹	3.00 ¹	4.00 ¹	6.00 ²	8.00 ²	10.00 ³	12.00 ³	14.00 ³	16.00 ³	18.00 ^{3,4}	19.00 ^{3,4}
M2	2.00 ¹	3.00 ¹	4.00 ¹	6.00 ¹	8.00 ²	10.00 ³	12.00 ³	14.00 ³	16.00 ³	18.00 ^{3,4}	19.00 ^{3,4}		
M2.5	2.00 ¹	3.00 ¹	4.00 ¹	6.00 ¹	8.00 ²	10.00 ³	12.00 ³	14.00 ³	16.00 ³	18.00 ³	19.00 ³		
M3	2.00 ¹	3.00 ¹	4.00 ¹	6.00 ¹	8.00 ²	10.00 ²	12.00 ³	14.00 ³	16.00 ³	18.00 ³	19.00 ³		
M3.5	—	3.00 ¹	4.00 ¹	6.00 ¹	8.00 ¹	10.00 ²	12.00 ²	14.00 ³	16.00 ³	18.00 ³	19.00 ³		

(1) Type 1

(2) Type 2

(3) Type 3



(4) Not available for standoffs where C = .127" (3.23mm)

(5) Custom lengths and type combinations available by request.

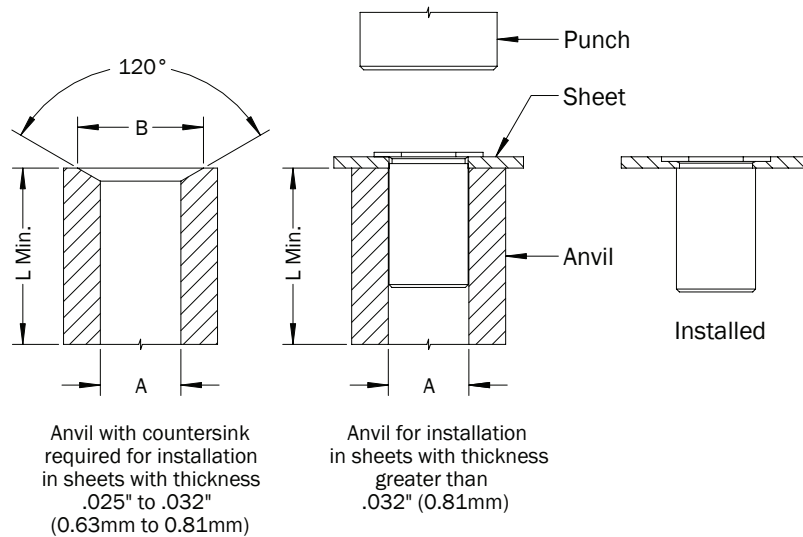
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MATERIAL & FINISH

Material Code	Material Description	Finish Code	Finish Description	For Use in Sheet Hardness		
				HRB 50 Max.	HRB 60 Max.	HRB 70 Max.
ST	12L14 Carbon Steel	Z	Zinc (SC1) with Type III Clear Chromate per ASTM B 633		•	
SS	303 Stainless Steel	P	Passivate and/or test per ASTM A 967			•
AL	Aluminum	PLN	Plain	•		

INSTALLATION

1. Punch or drill hole in sheet. Do not deburr edges.
2. Insert standoff through hole in sheet and into the anvil as shown.
3. Squeeze the sheet and standoff head between parallel punch and anvil surfaces. Use only enough pressure to seat the standoff head flush with the sheet.
4. Anvil with countersink is required for installation in sheets with thickness .025" to .032" (0.63mm to 0.81mm). Anvil with countersink is not required for installation in sheets with thickness greater than .032" (0.81mm). Punch and anvil should be made from hardened steel.



ANVIL DIMENSIONS

INCH	Standoff C Dimension	A +.003 -.000	B +.007 -.000
	.127	.129	.156
	.165	.167	.187
	.212	.213	.250

METRIC	Standoff C Dimension	A +0.08 -0.00	B +0.18 -0.00
	3.23	3.28	3.96
	4.19	4.24	4.75
	5.39	5.41	6.35

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PERFORMANCE

INCH	Standoff C Dimension	Standoff Material Code	Test Sheet Material					
			.025" 5052-H34 Aluminum			.025" Cold-Rolled Steel		
			Installation (lbs)	Push-out (lbs)	Torque-out (in-lbs)	Installation (lbs)	Push-out (lbs)	Torque-out (in-lbs)
	.127	ST	900	60	4.5	1500	80	6.5
		SS				(2)	(2)	(2)
		AL						
	.165	ST	1500	70	6.0	2000	100	9.0
		SS				(2)	(2)	(2)
		AL						
	.212	ST	1800	90	11.0	2500	150	15.0
		SS				(2)	(2)	(2)
		AL						

METRIC	Standoff C Dimension	Standoff Material Code	Test Sheet Material					
			0.63mm 5052-H34 Aluminum			0.63mm Cold-Rolled Steel		
			Installation (kN)	Push-out (N)	Torque-out (N-m)	Installation (kN)	Push-out (N)	Torque-out (N-m)
	3.23	ST	4.0	267	0.51	6.7	356	0.73
		SS				(2)	(2)	(2)
		AL						
	4.19	ST	6.7	311	0.68	8.9	445	1.01
		SS				(2)	(2)	(2)
		AL						
	5.39	ST	8.0	400	1.24	11.1	667	1.69
		SS				(2)	(2)	(2)
		AL						

- (1) Performance data represents the average destructive result for standoffs only when all installation specifications are strictly followed. Variations in panel hole size, thickness, material and installation methods will affect the loads. Pencom strongly encourages testing the application.
- (2) Not recommended.

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