TP

PENCOM PENINSULA COMPONENTS

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

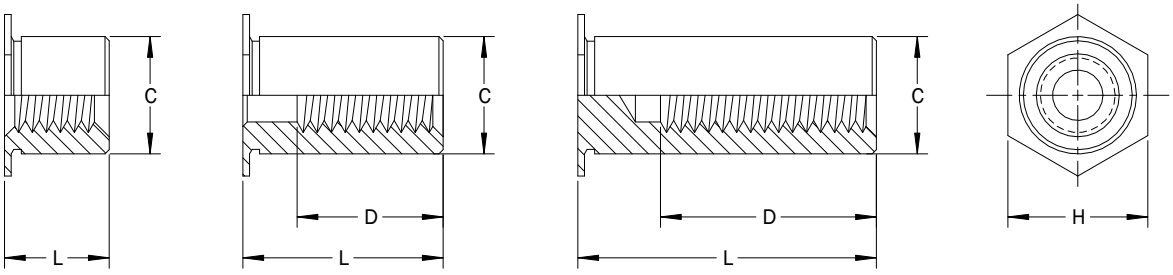
FEATURES

- 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

Material Code	Thread Code	Length	Finish Code



TYPE 1 (Thru)

TYPE 2 (Screw will not pass thru unthreaded end)

TYPE 3 (Blind)

GENERAL

All dimensions in inches

	Thread	Thread Code	Sheet			C +.000 -.005	D Minimum Thread Depth	H Nom.
			Minimum Thickness	Hole Size +.003 -.000	Minimum Distance Hole Center to Edge			
INCH	0-80	080	.025	.128	.19	.127	.125	.156
		4080[1]		.166	.23	.165		.187
	2-56	4256[1]	.025	.166	.23	.165	.200	.187
		6256[1]		.213	.27	.212		.250
	4-40	440	.025	.166	.23	.165	.220	.187
		6440[1]		.213	.27	.212		.250
	6-32	632	.025	.213	.27	.212	.270	.250

(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 Standoff with C=.127"/3.23mm

TP Self–Clinching Standoffs for Thin Panels

GENERAL (CONTINUED)

All dimensions in millimeters

	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			
METRIC	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

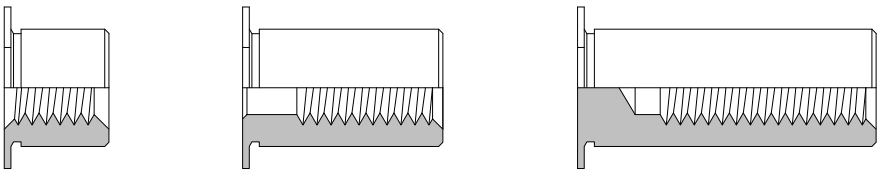
All dimensions in inches

	Thread	L (Length) ±.003											
INCH	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]	.750[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

	Thread	L (Length) ±0.08										
METRIC	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



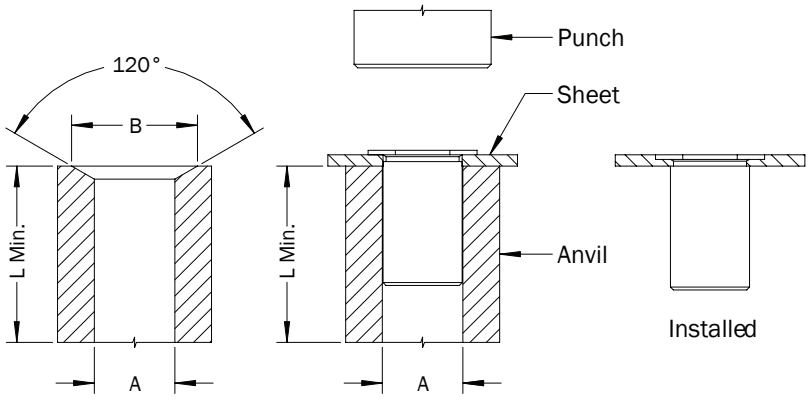
(4) Not available for standoffs where C= .127" (3.23mm)
(5) Custom lengths and type combinations available by request.

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	Carbon Steel	Z	Zinc (SC1) with Type III Clear Chromate per ASTM B633		•	
SS	300-Series Stainless Steel	P	Passivate and/or test per ASTM A967			•
AL	Aluminum	PLN	Plain	•		

INSTALLATION

1. Prepare correct sized hole in sheet. Do not deburr edges.
2. Insert standoff through punch side of 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 with countersink required for installation in sheets with thickness .025" to .032" (0.63mm to 0.81mm)

Anvil for installation in sheets with thickness greater than .032" (0.81mm)

ANVIL DIMENSIONS

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

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

PERFORMANCE

	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)	Pull-thru (lbs)	Installation (lbs)	Push–out (lbs)	Torque–out (in-lbs)	Pull-thru (lbs)
INCH	.127	ST	750-1050	51-69	3.8-5.2	–	1300-1700	68-92	5.5-7.5	–
		SS				–				–
		AL				–	(2)	(2)	(2)	(2)
	.165	ST	1300-1700	60-81	5.1-6.9	195-265	1700-2300	85-115	7.6-10	175-235
		SS				230-310				220-300
		AL				195-260	(2)	(2)	(2)	(2)
	.212	ST	1550-2050	77-105	9.3-13	225-305	2150-2900	130-175	13-17	175-240
		SS				290-390				290-395
		AL				255-345	(2)	(2)	(2)	(2)

	Standoff C Dimension	Standoff Material Code	Test Sheet Material							
			0.64mm 5052-H34 Aluminum				0.64mm Cold-Rolled Steel			
			Installation (kN)	Push–out (N)	Torque–out (N-m)	Pull-thru (N)	Installation (kN)	Push–out (N)	Torque–out (N-m)	Pull-thru (N)
METRIC	3.23	ST	3.4-4.6	255-305	0.43-0.59	–	5.7-7.7	305-410	0.62-0.84	–
		SS				–				–
		AL				–	(2)	(2)	(2)	(2)
	4.19	ST	5.7-7.7	265-360	0.58-0.78	870-1180	7.6-10.2	380-510	0.85-1.15	780-1050
		SS				1010-1370				980-1330
		AL				860-1160	(2)	(2)	(2)	(2)
	5.39	ST	6.8-9.2	340-460	1.05-1.43	1000-1350	9.4-12.8	565-765	1.44-1.95	780-1060
		SS				1280-1740				1300-1760
		AL				1130-1530	(2)	(2)	(2)	(2)

(1) Push-out, torque-out and pull-thru values are for standoffs only and not the mating fasteners.
(2) Not recommended.
(3) Performance data are shown in ranges and should be used for general comparative purposes only as actual results may be affected by variations in installation and panel preparation equipment and procedures; and panel hardness, hole size, material and thickness. PENCOM strongly recommends testing in each application to determine actual loads.

