

PennEngineering®

BLIND SELF-CLINCHING FASTENERS



BULLETIN

**B**



# SELF-CLINCHING BLIND FASTENERS

PEM® brand self-clinching blind fasteners provide permanently mounted blind threads in metal sheets as thin as .040" / 1 mm.

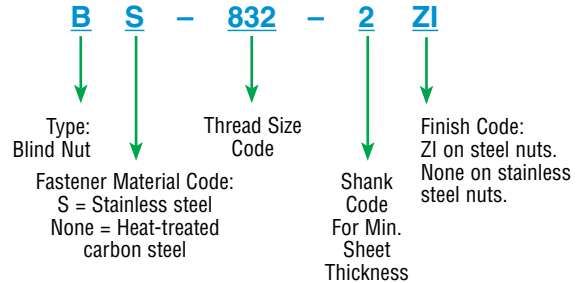
- Provides barrier to protect threads against foreign matter.
- Protects internal components from intrusion of screws.

PEM blind fasteners employ the proven PEM self-clinching design and are easily installed in properly sized holes. Shanks of PEM fasteners act as their own pilots. PEM blind fasteners can be installed with any standard press applying squeezing forces between parallel surfaces.

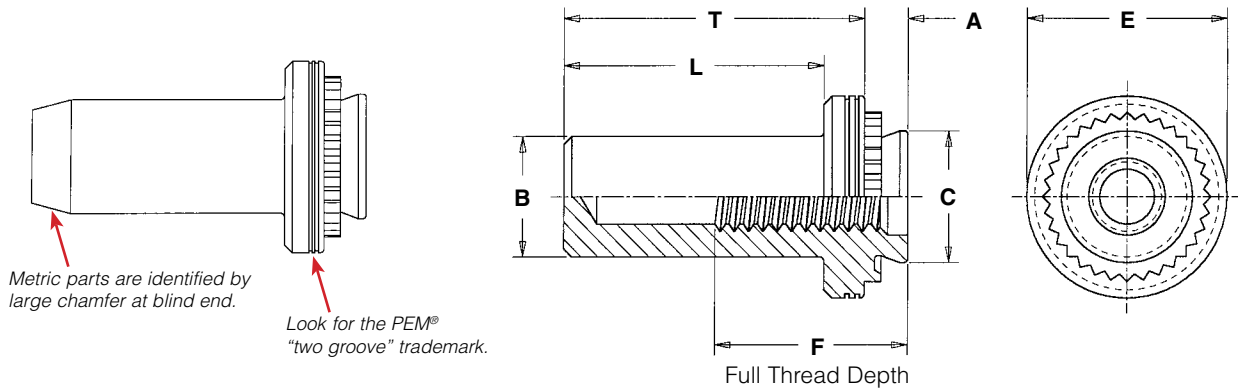
PEM self-clinching blind fasteners are available in thread sizes from #4-40 through 1/4-20 / M3 through M6 in carbon or stainless steel.



## PART NUMBER DESIGNATION



# DIMENSIONAL DATA



All dimensions are in inches.

UNIFIED	Thread Size	Type		Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet + .003 - .000	B Max.	C Max.	E ± .010	F Min.	L Max.	T ± .010	Min. Dist. Hole $\Phi$ to Edge
		Fastener Material													
		Steel	Stainless Steel												
.112-40 (#4-40)	B	BS	440	1	.040	.040	.166	.150	.165	.250	.210	.335	.380	.19	
				2	.056	.056									
.138-32 (#6-32)	B	BS	632	1	.040	.040	.1875	.169	.187	.280	.230	.335	.380	.22	
				2	.056	.056									
.164-32 (#8-32)	B	BS	832	1	.040	.040	.213	.204	.212	.310	.280	.385	.440	.27	
				2	.056	.056									
.190-32 (#10-32)	B	BS	032	1	.040	.040	.250	.235	.249	.340	.280	.385	.440	.28	
				2	.056	.056									
.250-20 (1/4-20)	B	BS	0420	1	.056	.056	.344	.305	.343	.430	.310	.500	.560	.34	
				2	.090	.090									

All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type		Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet + 0.08	B Max.	C Max.	E ± 0.25	F Min.	L Max.	T ± 0.25	Min. Dist. Hole $\Phi$ to Edge
		Fastener Material													
		Steel	Stainless Steel												
M3 x 0.5	B	BS	M3	1	1	1	4.25	3.84	4.22	6.35	5.3	8.5	9.6	4.8	
				2	1.4	1.4									
M4 x 0.7	B	BS	M4	1	1	1	5.4	5.2	5.38	7.95	7.1	9.8	11.2	6.9	
				2	1.4	1.4									
M5 x 0.8	B	BS	M5	1	1	1	6.4	6.02	6.38	8.75	7.1	9.8	11.2	7.1	
				2	1.4	1.4									
M6 x 1	B	BS	M6	1	1.4	1.4	8.75	7.8	8.72	11.1	7.8	12.7	14.3	8.6	
				2	2.3	2.3									

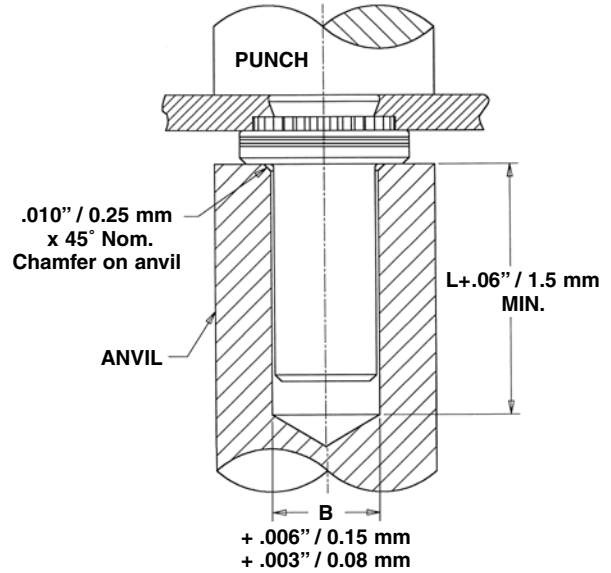
## MATERIAL AND FINISH SPECIFICATIONS

	Threads	Fastener Materials		Standard Finishes		For Use in Sheet Hardness: (2)	
Type	Internal, ANSI B1.1, 2B / ANSI / ASME B1.13M, 6H	Heat-Treated Carbon Steel	300 Series Stainless Steel	Passivated and/or Tested Per ASTM A380	Zinc Plated, 5 $\mu$ m, Colorless (1)	HRB 80 / HB 150 or less	HRB 70 / HB 125 or less
B	•	•			•	•	
BS	•		•	•			•
Part Number Code For Finishes				None	ZI		

(1) See PEM Technical Support section of our web site for related plating standards and specifications.  
 (2) HRB - Hardness Rockwell "B" Scale. HB - Hardness Brinell.

# INSTALLATION

1. Prepare properly sized mounting hole in the sheet. Do not perform any secondary operations such as deburring.
2. Place the barrel of the fastener into the anvil hole and place the mounting hole over the shank of the fastener.
3. With the punch and anvil surfaces parallel, apply squeezing force until the flange contacts the mounting sheet. Examples of installation forces are shown below. The sketch at the right indicates suggested tooling for applying these forces.



### PEMSERTER® PRESSES

For best results we recommend using a PEMSERTER® press for installation of PEM Type B and BS fasteners. For more information on our line of presses call 1-800-523-5321 or check our web site.

## PERFORMANCE DATA<sup>(1)</sup>

UNIFIED	Thread Code	Shank Code	Sheet Thickness (in.)	Test Sheet Material					
				5052-H34 Aluminum			Cold-Rolled Steel		
				Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)
440	1	.040	1600	90	10	2500	125	13	
	2	.056	2000	170	13	3500	230	18	
632	1	.040	1800	95	17	3000	130	18	
	2	.056	2800	190	22	4000	260	28	
832	1	.040	2000	105	23	3500	135	30	
	2	.056	3000	220	35	5000	285	45	
032	1	.040	2100	110	32	4000	140	35	
	2	.056	3500	190	50	5000	250	60	
0420	1	.056	4000	315	90	6000	400	105	
	2	.090							

METRIC	Thread Code	Shank Code	Sheet Thickness (mm)	Test Sheet Material					
				5052-H34 Aluminum			Cold-Rolled Steel		
				Installation (kN)	Pushout (N)	Torque-out (N•m)	Installation (kN)	Pushout (N)	Torque-out (N•m)
M3	1	1	7.1	400	1.15	11.1	550	1.5	
	2	1.4	9	750	1.47	14	1010	2.05	
M4	1	1	8.9	470	2.6	15.6	600	3.4	
	2	1.4	12.5	970	4	20	1250	5.1	
M5	1	1	9.3	480	3.6	17.8	620	4	
	2	1.4	14	845	5.7	25	1112	6.8	
M6	1	1.4	17.8	1400	10.2	25.7	1760	11.9	
	2	2.3							

**(1) The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.**

RoHS compliance information can be found on our website.  
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