PEM®

FLOATING

SELF-CLINCHING

FASTENERS

BULLETIN

ALA

807

Revised 608

FLOATING* SELF-CLINCHING FASTENERS

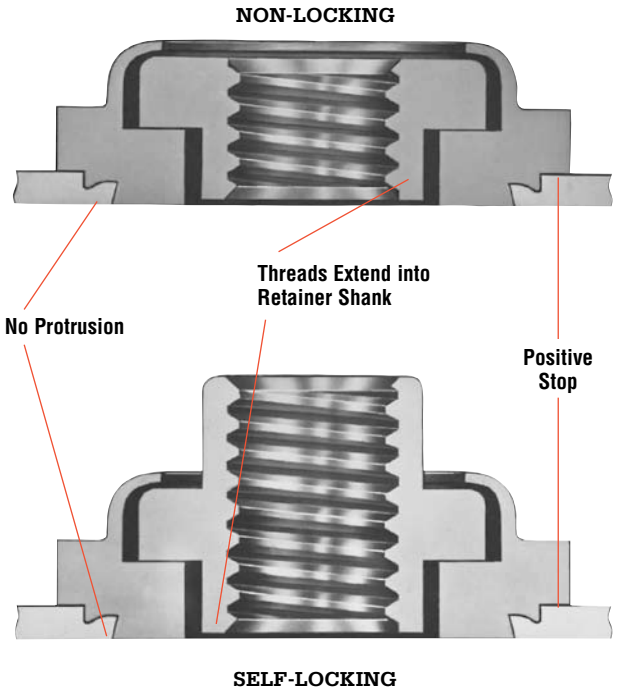
Locking and Non-locking Threads

These fasteners provide load-bearing threads in thin sheets and permit up to .030" / 0.76 mm adjustment for mating hole misalignment.

The self-clinching feature offers fast and simple assembly. The fasteners are squeezed into punched or drilled holes using any standard press. The sheet remains flush on one side, and the fastener is permanently locked in place.

Extra strength and support in assembly is obtained by the threads of the floating nut extending fully into the retainer shank (a unique PEM feature). A self-locking version of the fastener is also offered. Uniformity of locking torque is equivalent to NASM25027 specifications.

** Many PEM Type AS and AC self-clinching floating fasteners correspond to sizes in US NASM45938/11 specifications. Consult our Marketing department for a complete Military Specification and National Aerospace Standards Reference Guide (Bulletin NASM) or check our web site.*

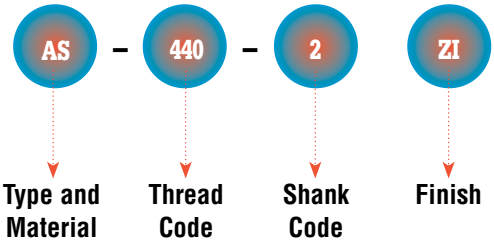


Double squares are a registered trademark ®

Always look for the square insert in a square retainer to be sure you are getting PEM brand fasteners and the best in self-clinching performance.

Bottom view (same for both type fasteners)

Part Number Designation



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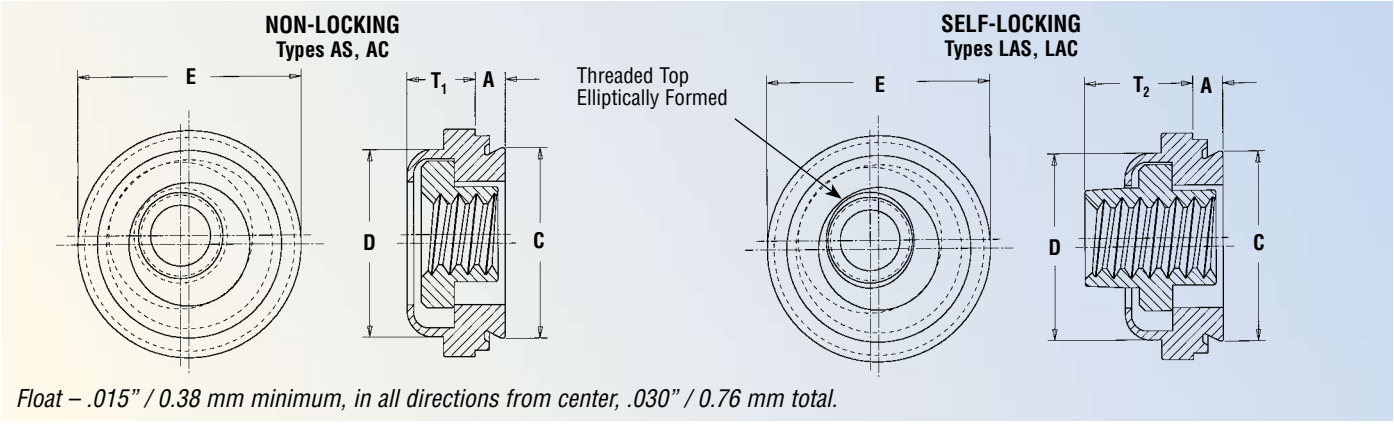


Float – .015" / 0.38 mm minimum, in all directions from center, .030" / 0.76 mm total.

All dimensions are in inches.

	Thread Size	Type: Non-Locking Fastener Material: Steel	Type: Non-Locking Fastener Material: Stainless Steel	Type: Self-Locking Fastener Material: Steel	Type: Self-Locking Fastener Material: Stainless Steel	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet + .003 - .000	C Max.	D Max.	E ± .015	T_1 Max.	T_2 Max.	Min. Dist. Hole C/L To Edge
UNIFIED	.112-40 (#4-40)	AS	AC	LAS	LAC	440	1	.038	.038	.290	.289	.290	.360	.130	.190	.30
							2	.054	.054							
	.138-32 (#6-32)	AS	AC	LAS	LAC	632	1	.038	.038	.328	.327	.335	.390	.130	.200	.32
							2	.054	.054							
	.164-32 (#8-32)	AS	AC	LAS	LAC	832	1	.038	.038	.368	.367	.365	.440	.130	.210	.34
							2	.054	.054							
	.190-24 (#10-24)	AS	AC	LAS	LAC	024	1	.038	.038	.406	.405	.405	.470	.170	.270	.36
							2	.054	.054							
	.190-32 (#10-32)	AS	AC	LAS	LAC	032	1	.038	.038	.406	.405	.405	.470	.170	.270	.36
							2	.054	.054							
	.250-20 (1/4-20)	AS	AC	LAS	LAC	0420	2	.054	.054	.515	.514	.510	.600	.210	.310	.42
	.250-28 (1/4-28)	AS	AC	LAS	LAC	0428	2	.054	.054	.515	.514	.510	.600	.210	.310	.42

All dimensions are in millimeters.

	Thread Size x Pitch	Type: Non-Locking Fastener Material: Steel	Type: Non-Locking Fastener Material: Stainless Steel	Type: Self-Locking Fastener Material: Steel	Type: Self-Locking Fastener Material: Stainless Steel	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet + 0.08	C Max.	D Max.	E ± 0.4	T_1 Max.	T_2 Max.	Min. Dist. Hole C/L To Edge
METRIC	M3 x 0.5	AS	AC	LAS	LAC	M3	1	0.97	0.97	7.37	7.35	7.37	9.14	3.31	4.83	7.62
							2	1.38	1.38							
	M4 x 0.7	AS	AC	LAS	LAC	M4	1	0.97	0.97	9.35	9.33	9.28	11.18	3.31	5.34	8.64
							2	1.38	1.38							
	M5 x 0.8	AS	AC	LAS	LAC	M5	1	0.97	0.97	10.31	10.29	10.29	11.94	4.32	6.86	9.14
							2	1.38	1.38							
	M6 x 1	AS	AC	LAS	LAC	M6	2	1.38	1.38	13.08	13.06	12.96	15.24	5.34	7.88	10.67

MATERIAL & FINISH SPECIFICATIONS

	Threads: Non-locking, Internal ANSI B1.1, 2B/ ANSI/ASME B1.13M, 6H	Threads: Self-locking, Internal ANSI B1.1, 3B/ ANSI/ASME B1.13M, 6H	Fastener Materials: Retainer: Heat-Treated Carbon Steel	Fastener Materials: Retainer: 300 Series Stain-less Steel	Fastener Materials: Nut: Carbon Steel	Fastener Materials: Nut: 300 Series Stain-less Steel	Standard Finishes: Retainer & Nut: Zinc Plated, 5µm, Colorless (1)	Standard Finishes: Retainer & Nut: Passivated and/or tested per ASTM A380	Standard Finishes: Retainer: Zinc Plated, 5µm, Colorless (1)	Standard Finishes: Retainer: Passivated and/or tested per ASTM A380	Standard Finishes: Nut: Black Dry-film Lubricant	Optional Finish: Retainer: Passivated and/or tested per ASTM A380	Optional Finish: Nut: Black Dry-film Lubricant per MIL-PRF-46010 over Cadmium Chromate Prime	For Use In (2)
Type														Sheet Hardness HRB 70 / HB 125 or Less
AS	•		•		•		•							•
AC	•			•		•		•						•
LAS		•	•			•			•		•			•
LAC		•		•		•				•	•	•		•
Part number codes for finishes							ZI	None	MD			F		

(1) See PEM Technical Support section of our web site for related plating standards and specifications.

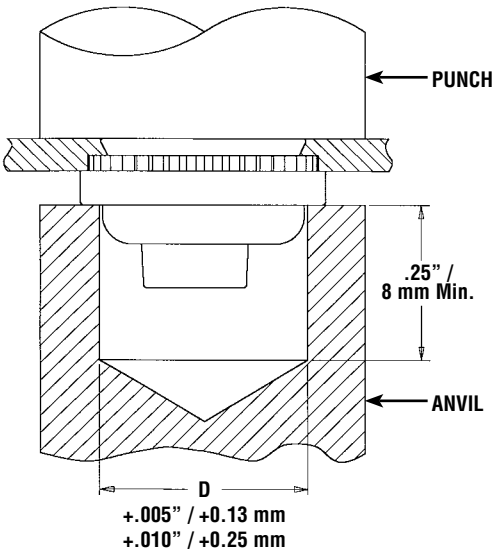
(2) HRB - Hardness Rockwell "B" Scale. HB - Hardness Brinell.

INSTALLATION

1. Punch or drill the properly sized mounting hole in sheet. Do not perform any secondary operations such as deburring.

2. Place 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 sufficient squeezing force until flange contacts mounting sheet. Sketch at right shows suggested tooling for applying these forces. Installation force and performance data shown below.



PERFORMANCE DATA[1]

	Thread Code	Shank Code	Test Sheet Material								
			2024-T3 Aluminum			5052-H34 Aluminum			Cold-Rolled Steel		
			Installation (lbs.)	Retainer Pushout (lbs.)	Retainer Torque-out (in. lbs.)	Installation (lbs.)	Retainer Pushout (lbs.)	Retainer Torque-out (in. lbs.)	Installation (lbs.)	Retainer Pushout (lbs.)	Retainer Torque-out (in. lbs.)
UNIFIED	440	1	3000	220	65	1500	215	65	3000	300	85
		2		225	150	2000	225	80			150
	632	1	3000	235	110	2000	240	140	3000	300	150
		2		275	150		250	150			175
	832	1	3000	240	110	2000	250	140	3000	300	150
		2		300	150		265	150		400	200
	032	1	3500	300	150	2000	300	150	3500	400	150
		2			200		350	175		450	200
	0420	2	5000	300	325	3000	400	325	5000	500	325
	0428										

	Thread Code	Shank Code	Test Sheet Material								
			2024-T3 Aluminum			5052-H34 Aluminum			Cold-Rolled Steel		
			Installation (kN)	Pushout (N)	Retainer Torque-out (N•m)	Installation (kN)	Pushout (N)	Retainer Torque-out (N•m)	Installation (kN)	Pushout (N)	Retainer Torque-out (N•m)
METRIC	M3	1	13.3	978	7.3	6.7	956	7.3	13.3	1334	9.6
		2	13.3	1000	16.9	8.9	1000	9	13.3	1334	16.9
	M4	1	13.3	1067	12.4	8.9	1112	15.8	13.3	1334	16.9
		2	15.6	1334	16.9	8.9	1178	16.9	13.3	1779	22.6
	M5	1	15.6	1334	16.9	8.9	1334	16.9	15.6	1779	16.9
		2	16.6	1334	22.6	8.9	1556	19.7	15.6	2001	22.6
	M6	2	22.2	1334	36.7	13.3	1779	36.7	22.2	2224	36.7

(1) The installation, pushout and retainer torque-out 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.

Specifications subject to change without notice.
Check our website for the most current version of this bulletin.

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