

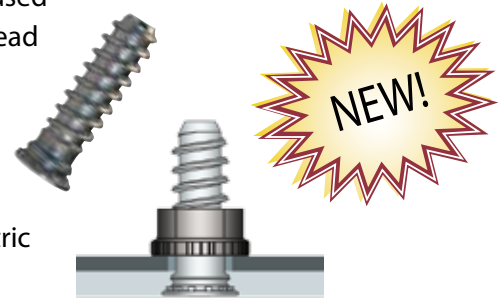
Flush-head Studs with X-Press™ Thread Profile

For use with plastic mating fasteners

PEM® self-clinching, flush-head studs with X-Press™ threads are typically used with push-on or other plastic fasteners. The coarse thread design of the thread reduces assembly time and provides high retention force.

These self-clinching studs are installed in metal sheets by pressing them into place with any standard press. They can also be installed using automated equipment during the in-die process.

PEM® studs with X-Press™ threads are available with 5 mm and 6 mm metric threads. Lengths range from 10 mm to 25 mm.



Features and Benefits

- Offers fast, reliable attachment.
- Reduces assembly time.
- Allows for lighter assembly.
- Self-clinching stud mounts flush in metal sheets as thin as 1mm.
- Thread design accommodates paints and coatings without compromising performance.
- Self-clinching technology is cleaner and has a more attractive finished appearance than welding.
- Can be installed during the stamping process with PEMSERTER® in-die technology.

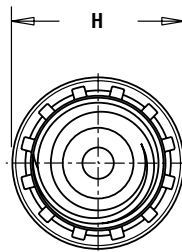
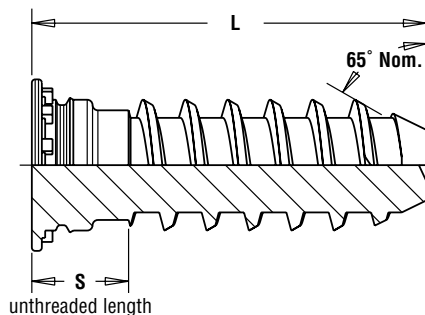
Examples of plastic nuts and wire tie products that can be used with PEM® X-Press™ studs.



Contact Tech Support for more information.



Press-on (kwik) nut can be used to hold down soft materials such as foam, cloth or insulation.



Part Number Designation

FH - **X5** - **10** **ZI**

↓ ↓ ↓ ↓

Type and Material Thread Code Length Code Finish Code

All dimensions are in millimeters.

Thread Size x Pitch	Type	Thread Code	Length Code "L" ±0.4 (Length Code in millimeters)				Min. Sheet Thickness	Hole Size in Sheet +0.08	H ±0.4	S Max.
5 mm x 1.6	FH	X5	10	15	20	25	1	5.2	6.5	4
6 mm x 1.6	FH	X6	10	15	20	25	1.6	6.2	8.2	4

Material: Hardened Carbon Steel

Standard Finish: ZI - Zinc Plus Clear Chromate

Optional Finish: X - Rust Preventative Oil

For use in sheet hardness: HRB 80 or less (Hardness Rockwell "B" Scale) / HB 150 or less (Hardness Brinell)

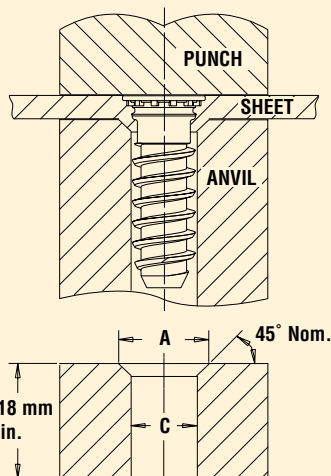
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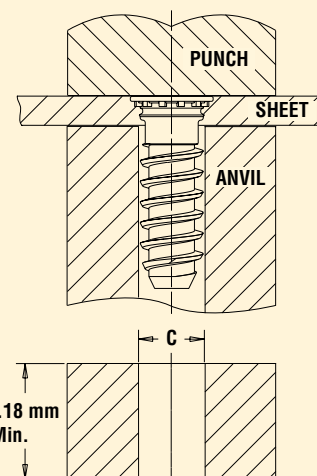
INSTALLATION

1. Prepare properly sized mounting hole in sheet.
2. Place fastener into mounting hole as shown in the drawing.
3. With punch and anvil surfaces parallel, apply squeezing force to embed the head of the stud flush in the sheet.

Tooling for sheet thicknesses less than 1.51 mm with 5 mm thread size and less than 2.4 mm for 6 mm thread size.



Tooling for sheet thicknesses 1.51 mm and greater with 5 mm thread size and 2.4 mm and greater for 6 mm thread size.



PEMSERTER® Installation Tooling

All dimensions are in millimeters.

Thread Code	Anvil Dimensions		Anvil Part No. For Sheets < 1.51	Anvil Part No. For Sheets ≥ 1.51	Punch Part Number
	A	C			
X5	6.12 - 6.22	5.23 - 5.31	8021189	8021188	975200048
				< 2.4	≥ 2.4
X6	7.04 - 7.14	6.25 - 6.33	8021191	8021190	975200048

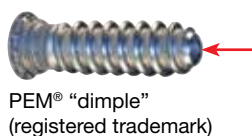
PERFORMANCE DATA ⁽¹⁾

Thread Code	Test Sheet Material	Installation kN	Pushout N	Torque-out N•m
X5	1.1 mm Steel HRB 58 / HB 104 ⁽²⁾	24.9	1519	4.7
	1.2 mm Aluminum HRB 44 / HB 66 ⁽²⁾	19.2	1070	3.2
X6	1.6 mm Steel HRB 58 / HB 104 ⁽²⁾	35.6	2964	13.3
	1.6 mm Aluminum HRB 44 / HB 66 ⁽²⁾	29.4	1623	7

(1) Published installation forces are for general reference. Actual set-up and confirmation of complete installation should be made by observing proper seating of fastener as described in the installation steps. Other performance values reported are averages when all proper installation parameters and procedures are followed. Variations in mounting hole size, sheet material, and installation procedure may affect performance. Performance testing this product in your application is recommended. We will be happy to provide technical assistance and/or samples for this purpose.

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

Fastener drawings and models are available at www.pemnet.com



Standard head mounts flush in sheet. Domed head available on special order.

Regulatory compliance information is available in Technical Support section of our website. © 2015 PennEngineering.

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

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