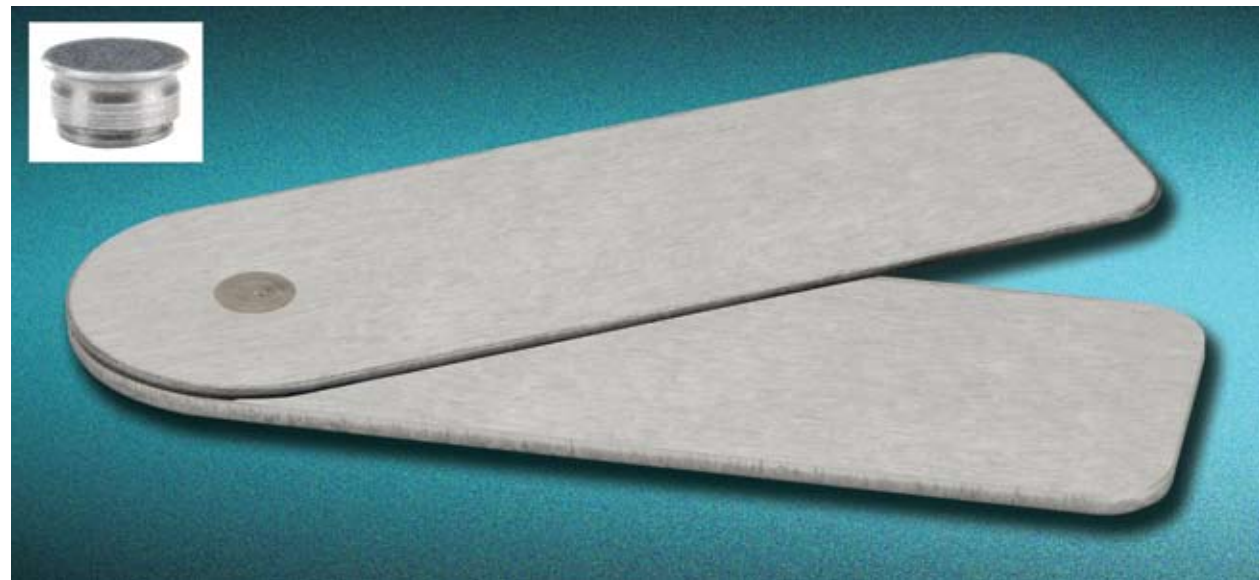


PennEngineering®

# PEM<sup>®</sup>LINE

Fastening Products, Systems, and Applications from the Industry Pioneer



## SpotFast™ Self-Clinching Fasteners Now Available for Use in Stainless

*Expanded Product Line and Applications Potential*

See Page 2

**QSLM  
Approval  
for  
Class 3  
Fasteners**

PennEngineering® has been approved by the Defense Logistics Agency as a supplier of Class 3 threaded fasteners in accordance with the stringent QSLM (Qualified Suppliers List of Manufacturers) program.

This authorizes PEM® brand threaded fasteners and Atlas® brand threaded inserts to fulfill government contracts. The QSLM approval extends to all these products manufactured at our headquarters facility in Danboro, PA.

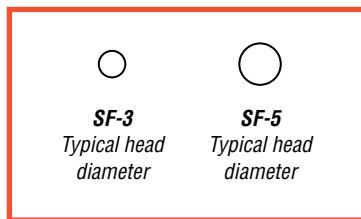
**[www.pemnet.com](http://www.pemnet.com)**

# PEM<sup>®</sup> SPOTFAST<sup>™</sup> SOLUTIONS



Our unique product line of SpotFast<sup>™</sup> self-clinching fasteners has been expanded with types made from precipitation hardening grade stainless steel. These new Type SFP fasteners can install in stainless steel sheets as thin as .030"/0.8mm with hardness of 88 or less on the Rockwell "B" scale.

The stainless versions join carbon steel Type SF fasteners originally developed for installation in thin steel or aluminum sheets. Stainless parts now add to the application potential.

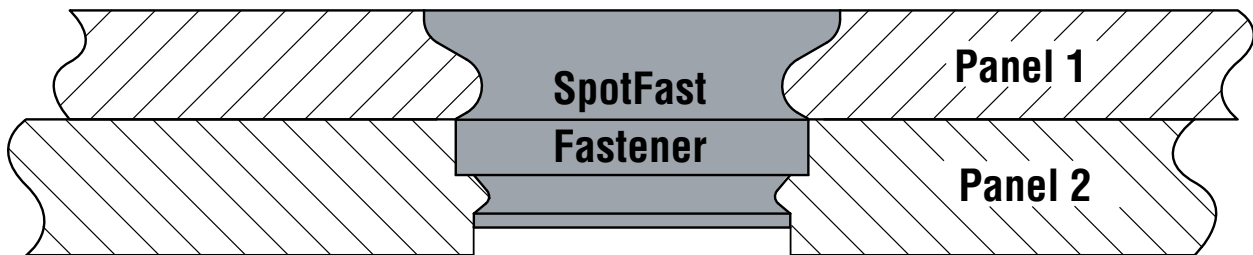


**Illustrations show head sizes of both types**

All SpotFast self-clinching fasteners permanently join two metal sheets to create a flush-attachment connection without protrusions on either side. They can serve as alternatives for rivets or welding and their rotational capability extends application capabilities by enabling a single fastener to act as a hardened pivot point.

The RoHS-compliant fasteners install smooth with the top sheet and flush, sub-flush, or blind with the bottom sheet. They can attach two metal sheets too thin to weld; fasten sheets of unequal thicknesses; join dissimilar metals unable to be welded; and even attach ultra-thin metal sections.

Unlike rivets that “bulb” during installation, the ultimately flush profile of SpotFast fasteners allows for unobtrusive attachment requiring minimal space. A smooth surface is retained for finishing and fasteners can be concealed easily with paints or powder coatings.



## **EASY INSTALLATION**

- Punch or drill properly sized mounting hole in both panels.
- Place Panel 2 with smaller mounting hole on anvil and align Panel 1 mounting hole with the mounting hole of Panel 2. Place the smaller diameter end of the fastener through the mounting holes.
- With the punch and anvil surfaces parallel, apply squeezing force until the fastener is flush with the top of Panel 1.

# TIPS FOR SPECIFYING



*When specifying self-clinching fasteners, these basic guidelines can help:*

## **ACCOMMODATE THE APPLICATION**

Every self-clinching fastener type can bring an advantage to the table. If an assembly requires PCBs or components to be stacked or spaced, standoffs make a practical choice. If UL requirements for subsequent access to an assembly represent an issue, panel fasteners provide solutions.

## **EVALUATE SECONDARY BENEFITS**

Many self-clinching fasteners demonstrate unique performance capabilities (often more than one) which can be applied to maximize their effectiveness and contribute to end-product assembly. Example: A self-clinching fastener that mates two panels at a right angle offers an added benefit by enhancing EMI/RFI shielding (since a need for cutouts in the middle of panels is eliminated).

## **ENSURE INTEGRITY OF FASTENER DESIGN**

The production of quality self-clinching fasteners begins with good engineering research, design, development, and testing. Precision is necessary in all facets of fastener manufacture. Dimensional accuracy and consistency are crucial and if these are lacking the result will be rejected panels, chassis, or boards upon fastener installation. Even minute size variations among parts can cause automated equipment to jam, increasing downtime and production time. So-called "equivalents" rarely, if ever, rise to the occasion and to the demands.

## **FACTOR "INSTALLED COST" INTO THE MIX**

If fasteners are time-consuming to install, fail upon installation and need to be replaced, necessitate additional hardware, or are difficult to feed into the established production process, associated costs will rise.

# SPOTLIGHT ON PRODUCTS

## PEM® TRI-DENT® SELF-CLINCHING STEEL LOCKNUTS

These incorporate a unique locking feature to meet demanding locking performance requirements and promote reliability of locking threads for thin-metal component assemblies.

The TRI-DENT locking feature can achieve locking torque specifications ranging from (maximum torque) 5.75 in. lbs./0.67 N•m to 35 in. lbs./4 N•m and (minimum torque) 0.4 in. lbs./0.04 N•m to 3.75 in. lbs./0.30 N•m, depending on fastener thread size.

These Type SL™ steel locknuts provide permanent threads in steel or aluminum sheets as thin as .040"/1mm. They are available in unified and metric thread sizes #4-40 through 1/4-20 and M3 through M6.

**Download "Bulletin CL"  
and free part drawings  
(PEM CAD Library):**

***www.pemnet.com***



**PEM® TRI-DENT® Locknuts**



## UPDATED FREE PRODUCT BULLETIN FOR ALL PEM® ACCESS HARDWARE PRODUCTS

The latest 32-page bulletin profiles our expanded family of access hardware fastener products. These panel fastener assemblies incorporate captive screws to keep loose parts to a minimum and eliminate risks associated with hardware that can loosen, fall out, and damage internal components.

They are ideally suited to attach metal panels or other thin material components in applications where subsequent access will be necessary.

"Bulletin PF" offers a comprehensive panel fastener selector guide; height comparison and standard recess profiles; and complete specification, installation, and performance data for all fastener types.

***Download free bulletin and part drawings at [www.pemnet.com](http://www.pemnet.com)***

**PennEngineering® develops and manufactures PEM® self-clinching, broaching, weld, and surface mount fasteners, SI® inserts for plastics, and Atlas® SpinTite®, MaxTite®, and Plus+Tite® blind threaded inserts.**

**Fastener installation equipment includes PEMSERTER® automatic and manual precision presses, In-Die and robotics capabilities, the StickScrew® System for small-screw insertion, and Atlas tools.**

**PennEngineering®**



**North America:** Danboro, PA 18916 USA • E-mail: [info@pemnet.com](mailto:info@pemnet.com) • Tel: +1-215-766-8853 • Fax: +1-215-766-0143 • 800-237-4736 (USA Only)  
**U.K. And Europe:** Doncaster, England • E-mail: [uk@pemnet.com](mailto:uk@pemnet.com) Tel: +44 (0)1302 765700 • Fax: +44 (0)1302 367580  
**Asia/Pacific:** Singapore • E-mail: [singapore@pemnet.com](mailto:singapore@pemnet.com) • Tel: +65-6-745-0660 • Fax: +65-6-745-2400  
Shanghai, China • E-mail: [china@pemnet.com](mailto:china@pemnet.com) • Tel: +86-21-5868-3688 • Fax: +86-21-5868-3988

**Visit our PEMNET™ Resource Center at [www.pemnet.com](http://www.pemnet.com)**