

PennEngineering®

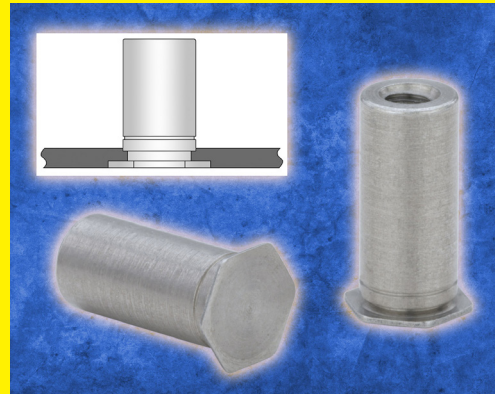
# PEM LINE

*Fastening Products, Systems, and Applications from the Industry Pioneer*

## **New...New...New...New...Products!**

### **NEW FASTENING SOLUTIONS**

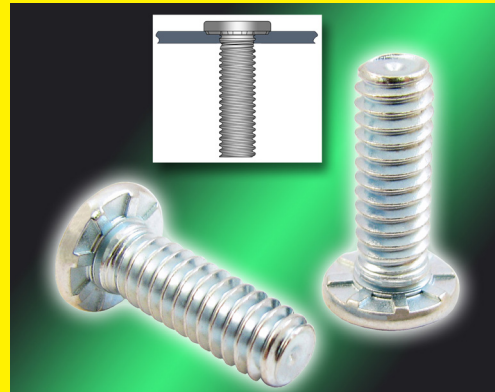
***Self-clinching fasteners added to product line  
for installation into stainless steel sheets***



*See page 2 for more information*

***New heavy-duty studs with large  
diameter heads clinch permanently  
into thin metal sheets and reduce  
stress on panels***

*See page 3 for more information*



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

# NEW . . . NEW . . . NEW

## Flush nuts install into stainless steel

New **PEMSERT® Type F4™** self-clinching flush nuts from PennEngineering® introduce



ideal attachment solutions for stainless steel assemblies by providing sheets load-bearing threads in thin stainless without creating any protrusions on either side. Upon their permanent installation into 300 Series stainless steel sheets as thin as .060" / 1.53 mm, both the top and bottom of the sheet will remain flat for enhanced functional and/or cosmetic qualities of an entire assembly. These nuts additionally can help deliver production efficiencies down the line by installing flush before sheet bending or forming operations get under way and eliminating any risk of interference associated with protruding hardware.

Installation is accomplished easily by squeezing the nut into a round hole in a stainless sheet using sufficient force to embed the nut's hexagonal head flush in the sheet. The metal displaced by the head then flows evenly around the back-tapered shank of the fastener to securely lock the nut permanently into place. Both the hexagonal head and the fastener's self-clinching design ultimately combine to deliver high pullout and torque out resistances. Only a single mating screw is required to complete the attachment process.

PEMSERT Type F4 self-clinching flush nuts are manufactured from 400 Series stainless steel in thread sizes #2-56 through ¼-20 / M2 through M6. They can perform as intended in stainless steel sheets with hardness up to HRB 88 on the Rockwell "B" scale or HB 183 on the Brinell scale.

[Click here to view product literature.](#)

## Standoffs install into stainless steel

These specially hardened stainless fasteners install reliably and permanently into stainless steel sheets as thin as .025" / 0.63 mm with only a single mating screw required for final component attachment. They ultimately enable lighter designs by minimizing hardware count and offer the added benefit of excellent corrosion resistance for an assembly.



PEM® **Type TSO4** standoffs are manufactured from heat-treated 400 Series stainless steel for use in stainless sheets with maximum hardness of HRB 88 on the Rockwell "B" scale or HB 183 on the Brinell scale. With the fasteners harder than the host stainless sheet, successful clinching results in their becoming integral parts of an assembly without risk of loosening hardware.

These fasteners are available in several styles, including thru-threaded or blind threaded versions, and in various lengths with thread sizes from #2-56 through #6-32 and M2.5 through M3.5. The fastener's thread design at the barrel end minimizes the length of the required mating screw and thread-type variations can be specified creating oversized fastener bodies to achieve increased bearing surface, wall thickness, and performance.

The standoffs mount simply and quickly by pressing the fastener into a round hole in the host sheet and applying sufficient squeezing force using a standard press to embed the standoff's head flush in the sheet and complete the process.

[Click here to view product literature.](#)

# NEW . . . NEW . . . NEW

## Heavy-duty studs for thin sheets

New PEM® **Type THFE™** heavy-duty studs clinch permanently into thin metal sheets to provide robust fastening solutions and practical alternatives to weld studs for especially demanding applications where high strength attachment may be required. Their enlarged head diameter distributes axial tightening force over a wide area to reduce compressive stress on the host panel, improve pull through performance, and develop full thread strength. In addition, a thicker head design serves to accommodate larger holes in attached panels.



These studs install easily and quickly using any standard press by inserting them into a properly sized mounting hole (punch side) and into the anvil hole and then applying sufficient squeezing force. This action embeds the ribs on the head of the stud into the host sheet and the fastener becomes a permanent part of the assembly.

Type THFE self-clinching studs install reliably into steel or aluminum sheets as thin as .031" / 0.8 mm with hardness of HRB 85 or less on the Rockwell "B" scale and HB 165 or less on the Hardness Brinell scale. Thread sizes range from ¼-20 through 5/16-18 and M6 through M8. Standard stud lengths are available up to 2" / 50 mm.

[Click here to view product literature.](#)

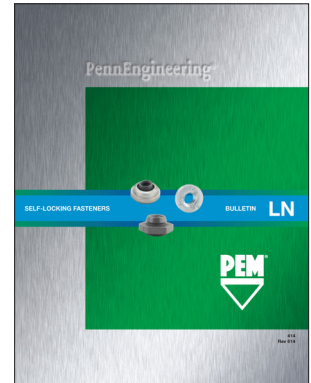
## New ATLAS® hand tools

ATLAS brand products have added a new line of hand operated tools for easy installation of blind threaded rivets. [Click here](#) to view the complete line. Power operated tools are also available.



## New PEM® literature

*A NEW PRODUCT BULLETIN (LN) COMBINES THE COMPLETE LINE OF PEM® SELF-CLINCHING PREVAILING TORQUE LOCKNUTS FOR EASY COMPARISON*



The complete line of PEM® self-clinching prevailing torque locknuts for permanent installation in thin metal sheets is profiled in a new free 20-page product bulletin available from PennEngineering®. This comprehensive product literature (Bulletin LN) covers all PEM self-clinching locknut types, locking-feature styles, material and finish specifications, installation procedures, and performance data. An easy-to-reference "Locking Nut Selector Guide" further highlights application benefits for each locknut type.

PEM self-clinching prevailing torque locknuts provide ideal solutions to prevent threaded mating hardware from loosening in service due to vibration, thermal cycling, or other application-related factors. Their locking elements effectively "lock" the threads of mating hardware in place by providing sufficient torque to eliminate potential loosening. PEM locknuts can save time and money compared with alternative chemical locking methods or patches by reducing labor and streamlining production.

[Click here to view product literature.](#)

# NEW . . . NEW . . . NEW

## New installation press feature

### *PEMSERTER® SERIES 4® FASTENER-INSTALLATION PRESS UPGRADED WITH NEW OPTICAL SENSOR FEATURE FOR ADDED OPERATION SAFETY*

The PEMSERTER® Series 4®, (12,000 lbs. / 53.4 kN capacity) press for installing self-clinching fasteners has been newly upgraded with an optical sensor feature designed to promote faster work set-up. The newly engineered Optical Sensor Indicator (OSI) has been integrated as standard into the built-in point-of-operation safety of the press to signal when the safety is properly set for each job.

The OSI activates during set-up mode when the press ram/punch is being adjusted onto the work-piece prior to fastener installation. The process is set in motion when the operator unlocks the ram-jam nut and then begins to adjust the ram clockwise. The OSI then changes color (from black to orange) at the exact point when the safety is successfully engaged, eliminating the potential for operator error.

[Click here for complete product literature on the full line of PEMSERTER presses.](#)



## Tech Tips & Solutions

### *A 300 SERIES STAINLESS STEEL PANEL AND 400 SERIES STAINLESS STEEL FASTENERS, CORROSION CONSIDERATIONS*

It is well known that 400 series stainless steels have lower corrosion resistance than 300 series stainless steels. If the corrosion resistance of 400 series fasteners is not adequate for the application, the first recommendation is to upgrade to a fastener made from a PH grade of stainless steel. For example, an FH4 stud could be upgraded to an FHP stud. If there is currently no standard upgrade then adding an electroless nickel plating to the 400 Series fasteners should be considered for improved corrosion resistance.

Read more in our NEW Tech Sheet entitled “Choosing a Fastener Finish for metal Fasteners in contact with Metal Sheets”.

[Click here to view the entire Tech Sheet.](#)

# COMPANY NEWS

## PennEngineering® Automotive Fastener Co. Ltd. earns “best supplier of the year” award from Continental Brake Systems

PennEngineering® Automotive Fastener Co. Ltd. (Kunshan, China), a leading supplier of fastening and assembly solutions for OEM/Tier 1 automotive and related transportation industries, has earned the “2014 Best Supplier of the Year Award” from Continental Brake Systems (Shanghai) Co., Ltd. (Jiading, China). PennEngineering Automotive Fasteners (PEAF), an operating unit of PennEngineering® and the global leader in fastening products and technologies, is one of only two suppliers to receive the award.

Continental Brake Systems evaluated suppliers based upon quality, delivery, service, and cost to qualify for the annual prestigious award. Click link below to read entire story.

<http://www.pemnet.com/news.html?newsitem=704>

## PennEngineering® acquires PROFIL Verbindungstechnik

September 3, 2014 – PennEngineering® (Danboro, PA, USA) has acquired PROFIL Verbindungstechnik (Friedrichsdorf, Germany).

Founded in 1965, PROFIL (<http://www.profil.eu/>) develops nuts and studs that are fastened to metal-shaped parts by means of a riveting, piercing, or pressing process. PROFIL is a system supplier with in-house design for automated feeding and installation equipment, which is customized to meet individual production requirements of customers. The company is a pioneer in mechanically joined fastener technology and has steadily continued its development over many decades. The economic advantages of using the PROFIL system in industrial manufacturing is documented by the implementation of a multitude of technically challenging and safety critical applications, mainly in the automotive, appliance and construction fittings industries. All major European automobile manufacturers and their suppliers are among PROFIL’s customers. Click link below to read press release.

<http://www.pemnet.com/news.html?newsitem=704>

## PEMspec™ App

The PEMspec app includes all of the newest PEM specifications and photos.

[Click here](#) to take a look.



## Stay connected to PennEngineering

Now you can follow us for the latest news releases, new products, bulletin updates, tech tips, job postings, videos and more.



PennEngineering® develops and manufactures PEM® brand fasteners, SI® inserts for plastics, and ATLAS® blind threaded inserts.

Fastener installation systems include PEMSERTER® automatic and manual precision presses, In-Die and robotics capabilities, and the StickScrew® System for small-screw insertion.

**PennEngineering®**



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