

PEM[®]LINE

Fastening Products, Systems, and Applications from the Industry Pioneer

NEW FASTENER SOLUTION

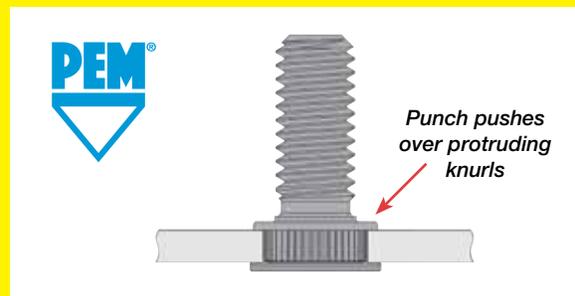
PEM[®] TYPE SGPC[™] SWAGING COLLAR STUDS

- *Installs into sheets as thin as .024" / 0.6 mm*
- *Can be installed into dissimilar materials and/or multiple panels*
- *Can be installed into most panel material, including stainless steel*
 - *Allows for close centerline-to-edge distance*
 - *Corrosion resistant*

New PEM[®] Type SGPC[™] swaging collar studs provide ideal fastener solutions for attaching dissimilar panel materials and/or multiple panels. They can accommodate most panel materials -- including stainless steel -- and will exhibit strong torque-out resistance. Their design additionally allows for close centerline-to-edge distance to suit limited-space applications.

These studs can install into sheets as thin as .024" / 0.6 mm and in multiple panels whose total thickness does not exceed the maximum sheet thickness of .047" / 1.2 mm. They are manufactured from 300 Series stainless steel promoting corrosion resistance and can be used in sheets of any hardness.

Their permanent installation is quick and easy using standard punch and anvil. After inserting the stud into a properly sized mounting hole in the host sheet and with punch and anvil surfaces parallel, sufficiently applied squeezing force pushes the punch over the protruding knurls of the stud and the fastener then becomes locked securely in place.



SEE PAGE 3 FOR MORE NEW PRODUCTS

PEM® FASTENER NEWS

**ENERGY COST @ 4.9 MILLION INSERTIONS =
APPROXIMATELY US \$39 PER YEAR**



- **Dual axis actuator** allows for ram speed optimization, high pressing forces, and dramatically reduced energy usage.
- **Proprietary clutch system** provides smooth, energy-efficient transition between servo axes.
- **Roller screw technology** enables the press to carry larger loads at higher speeds
- **Regenerative/dynamic braking** captures inertial energy and applies it to deceleration for a reduction in external energy requirements.

The PEMSERTER® Series 3000™ automatic fastener-installation press system introduces “green” technology by performing without hydraulics to install all types of self-clinching

fasteners rapidly, accurately, and permanently in thin-metal sheets. The heart of this press is a custom-built, full servo controlled, electro-mechanical actuator delivering measurable efficiencies and economies compared with conventional technologies. The Series 3000 press system is sealed and lubricated for life to eliminate environmental issues and minimize maintenance and associated costs.



PEMSERTER® SERIES P3® PRESS RECEIVES CE CERTIFICATION

PennEngineering has gone through the conformity assessment for the Series P3 fastener installation press and has met all applicable European health, safety, and environmental requirements and may now affix the CE marking to the press.

The Series P3 press is a portable power hand tool weighing only 4.6 kg / 10 lbs. that can develop a squeezing force of 22.2 kN / 5,000 lbs.



MAJOR U.S. DESIGN PUBLICATION FEATURES PEM® FASTENERS

Machine Design magazine with a circulation of 135,000 in North America has published an article “How to Use Self-Clinching Fasteners on Stainless Steel” in the January 13th issue. Self-clinching fasteners can be used on sheets of stainless steel, if engineers know enough about them. Check out the article for some good expert advice on self-clinching fasteners.

The article is also available online at:

<http://machinedesign.com/article/how-to-use-self-clinching-fasteners-on-stainless-steel-0113>

NEW FASTENER SOLUTION

NOW AVAILABLE - TITANIUM BOLTS AND SCREWS

- Inherent weight savings.
- Exhibit high strength-to-weight ratio
- High-temperature properties and stability
- Low density
- Corrosion resistant.
- Excellent fatigue performance.

3V® Fasteners Company, Inc. introduces a new capability to supply titanium bolts and screws to satisfy standard designs or accommodate unique customer requirements for a wide range of attachment applications in the aerospace industry. The externally threaded NAS and MS parts are manufactured from traditional

titanium alloy TI-6AL-4V and weigh 40% less than comparable non-titanium hardware. They ideally suit applications onboard commercial and military aircraft from actuators to seat track assemblies, among many others.



MORTORQ® SUPER SPIRAL DRIVE SYSTEM LICENSE AWARDED TO PENNINGENGINEERING

- Provide extremely high torque transfer without cam-out.
- Low-profile head and high-strength shallow recess contribute to reducing overall fastener weight.
- Various fastener head styles can be accommodated.

PennEngineering® has been awarded a license from Phillips Screw Company for its patented MORTORQ® SUPER Spiral Drive System. The proprietary drive system was developed to

deliver extremely high-torque capability for fasteners without risking damage to screw heads or surrounding areas. The drive will be available on various PEM® fastener products. New product offerings will include screws in 2 mm and smaller thread sizes ideally suited for high-volume consumer and medical devices.



NEW APPOINTMENT

LillyAnna Penn has been appointed to the position of Global Product Manager with responsibility for the Company's assembled line of products. Penn will develop and drive

short- and long-term strategy for the continued growth of the Company's multi-component fastener lines, including PEM® brand panel fasteners.

UPDATES

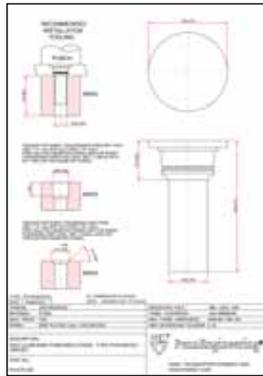
PEMNET.COM NEWLY ENHANCED

PennEngineering® has launched a newly designed, enhanced, and expanded website (www.pemnet.com) offering unprecedented functionality and a wider range of user-friendly tools for design engineers and the customer marketplace. The upgraded site contains:

- **Bolder graphics and visuals**
- **Fastening technology solutions**
- **Engineering and technical support**

Especially noteworthy is an enhanced multi-capability Product Selector tool delivering these capabilities:

- **2D and 3D drawings for download, direct insertion, or emailing**
- **A “compare products” feature**
- **Product search string showing a clear navigation path**
- **Keyword and part number search**
- **Product-specific printable pages and PDF options**
- **2D customer drawings integrating product and installation data**
- **User-tracking**
- **Complete back-end administrative functionality.**



The new “2D Sales Drawing” feature provides the user with a detailed print of the selected part in PDF format.

QRP WEB SITE REDESIGNED

QRP, Inc., manufacturer of aerospace quick release fasteners, has launched a newly designed website (www.qrp-inc.com) offering a user-friendly atmosphere. With the upgraded site you can:

- **Configure a product to desired requirements**
- **Download technical drawings**
- **Generate printable PDF drawings,**
- **Produce 3D models of products for direct insertion**
- **Request quotes directly through the site**
- **Find a local sales engineer.**

TECH TIP

THE ‘HARD FASTENER FACTS’ FOR CLINCHING INTO STAINLESS

A prevalent misconception is that all stainless self-clinching fasteners will perform as intended in all stainless sheets. But the relative hardness of fastener and sheet looms as an overriding influence, because self-clinching requires that the fastener always be harder than its host sheet.

There are some guidelines and hardware profiles to help make the job easier when selecting stainless fasteners for 300 Series stainless applications. You can read more about these guidelines on installing into stainless steel sheets at:

http://www.pemnet.com/design_info/articles/Stainless.html

PennEngineering® develops and manufactures PEM® brand fasteners, 3V® brand precision aerospace fasteners, SI® inserts for plastics, ATLAS® blind threaded inserts and QRP™ brand quick release pins.

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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