New...New...New...New...New...Products!

NEW FASTENING SOLUTIONS

New PEM® Reelfast® Surface Mount Spring-Loaded Captive Panel Screws Install Precisely And Permanently Where Designed On Printed Circuit Boards
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New PEM® Flush-Head Studs With X-Press™ Threads Uniquely Designed For Quick Mating With Plastic Fasteners
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New PEM® Type SMPP™ Self-Clinching Nuts Install with Minimal Footprint in Ultra-Thin Stainless Steel Sheets
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www.pemnet.com
ReelFast® Surface Mount Spring-loaded Captive Panel Screws

New PEM® ReelFast® surface mount spring-loaded captive panel screws (Type SMTPFLSM™) from PennEngineering® install precisely and permanently where designed on printed circuit boards to provide secure attachment and allow for subsequent access whenever necessary. These all-metal captive screw assemblies mount in one piece on boards using the pick-and-place method and will install in the same manner and at the same time as other surface mount components prior to the automated reflow solder process. The captive screw technology eliminates issues and risks associated with the handling, installing, and potential loosening of standard screws and can be easily actuated with the combination Torx®/slot drive.

PEM Type SMTPFLSM captive panel screws are supplied on tape and reel conforming to industry standards and are compatible with existing SMT automated installation equipment. A polyimide patch affixed to the end of the fastener allows for vacuum pickup. Unlike conventional fasteners, there is no requirement for secondary installation operations, which typically can damage boards and create scrap. An anti-cross thread feature serves to correct off-angle installations and prevent thread damage during the mounting process.

The fasteners install reliably in boards of any hardness as thin as .063” / 1.6mm. They are available in thread sizes #4-40 through #6-32 and M3 through M3.5 and in multiple screw lengths. Depending on length, the captive screw is designed to retract flush in the up position.

These captive panel screws join a growing portfolio of PEM surface mount fastener solutions engineered to perform a wide range of attachment functions in printed circuit board applications.

To see a full line of SMT and other fasteners for printed circuit boards click here.

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**TECH TIPS AND SOLUTIONS**

**Definition:** Galling is the seizing or abrading of threads caused by adhesion between sliding surfaces of the fasteners’ mating threads.

This is a subject that we occasionally get asked about through our global tech support centers.

Factors that increase the likelihood of galling may include:

- Soft connection elements
- Fine threads
- Excessive thread length
- Tightening sequence issues
- High speed tightening
- Thread damage
- Nylon locking elements
- Dirty threads
- Material and finish combinations
- Excessive tightening torque
- Mating part alignment
- Fastener quality

To read more about this topic, click on the title below to view our new TechSheet on the subject.

**PEM® - REF / THREAD GALLING**

SUBJECT: Root causes and guidelines to promote optimized fastener performance
NEW . . . NEW . . . NEW

PEM® Flush-head Studs with X-Press™ Threads

New PEM® self-clinching flush-head studs integrating unique X-Press™ threads enable quick mating with push-on plastic nuts, wire tie products, or other plastic fasteners in thin metal assemblies. Their coarse thread design, larger threads relative to the stud’s diameter, reduces assembly time by allowing for easy mating of plastic parts and promotes especially high retention force of the stud upon installation. The thread design additionally accommodates paints and coatings without compromising fastener performance in service.

These PEM X-Press studs (Type FHX™) introduced by PennEngineering® install permanently in metal sheets as thin as 1mm. They press easily into place using any standard press or can be installed automatically during the stamping process using an automated PEMSERTER® press equipped with in-die technology. Upon installation, the head of the stud mounts flush in the metal sheet for a clean and more attractive finished appearance compared with alternative methods such as welding.

The studs are manufactured from hardened carbon steel and finished with zinc plus clear chromate as standard or a rust-preventive oil finish as an option. They are available with 5mm and 6mm metric threads and in lengths from 10mm to 25mm. The studs perform reliably in metal sheets with hardness of HRB 80 or less on the Rockwell “B” scale and HB 150 or less on the Brinell scale.

Detailed specifications, fastener drawings and models, and performance data (Bulletin FHX) for these RoHS-compliant fasteners can be accessed here.

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.

Type SMPP™ Self-Clinching Nuts

New PEM® Type SMPP™ self-clinching nuts install permanently in ultra-thin stainless steel sheets and provide dimensionally ideal solutions for stainless assemblies where space for attachment hardware may be limited. A minimal footprint resulting from an overall low-profile design combines low height (.065” / 1.4mm) and small diameter (.220” / 5.6mm) with close-to-edge mounting capabilities for installation in stainless steel sheets as thin as .025” / 0.64mm. Their corrosion resistance will be similar to 300 Series stainless steel.

Upon installation, a serrated clinching ring prevents the nut from rotating in service and, ultimately, the fasteners will not loosen, fall out, or otherwise adversely affect the end-product integrity or performance.

PEM Type SMPP nuts are made from age-hardened A286 stainless steel and recommended for use in stainless sheets with hardness of HRB 90 / HB 192 or less. Thread sizes for mating hardware range from #2-56 through #6-32 and M2.5 through M3.5.

For this and a complete line of self-clinching fasteners that can be installed into stainless steel sheet click here.
**Automotive Fastener and Component Solutions**

PennEngineering provides a select group of products and focused engineering services to specifically target the unique assembly challenges of the automotive, transportation and heavy industrial equipment markets. This model brings together the combined resources of PennEngineering’s products, global facilities and years of expertise to offer a unique combination of standard and “make-to-print” components and fasteners along with customized installation solutions for any application.

See more about our automotive products and our new PennAuto brand [here](#).

**New PEMNET™ Website Launched**

On March 23rd we launched a completely new www.pemnet.com global website. We hope that you will find this update to have:

- Easier navigation
- Enhanced search capabilities
- Easy to access, quick view embedded videos
- Improved mobile device viewing
- Improved multi-language translation

Of course as always, the site provide tools such as 3D model downloads, installation animations, instructional videos, complete literature availability and a host of other general and specific technical information. All suggestions for improvement are always welcome. Just contact webadministrator@penn-eng.com.

**New - Tech Product Analysis (Teardown) Section Added to Website**

The [Tech Product Analysis](#) page of our new website, includes full teardown reports of the latest technological gadgets in the market. Upfront, each has a brief summary presenting our findings as they are related to the type of fasteners used. The findings may provide a recommendation for cost or performance improvement which may help in your own product assembly decisions.

The PennEngineering® teardown process involves the careful documented disassembly of a current consumer product. All products chosen for teardown are purchased through publicly accessible channels. Teardowns are performed by PennEngineering technical personnel for the purpose of understanding current assembly trends and to identify possible improvements using PennEngineering fastener types or other methods. Observations, comments and recommendations are based on the opinion of the technical expert conducting the teardown.

Looking for a highly confidential analysis of your own product? Our PEM® CSI™ (Cost Saving Investigation) program can provide assistance. For more on the CSI program go [here](#).
IN THE NEWS

Check out some of the latest PEM® fastener news and articles:

Read: December 2015, Eureka Magazine - One Fix For The Whole Mix
Having a single fastening technology to deal with every material from metals to composites sounds like joined up thinking!

Read: November 2015, Appliance Design- The Big Trend Toward Microfasteners
When evaluating how best to attach components and assemblies in the world of compact consumer electronic devices – one of the fastest-growing categories of appliances – designers have had their work cut out for them.

Read: February 2016, DesignFax Online- Self-clinching fasteners by design
The benefits of all self-clinching fasteners arise from their design, which features a unique annular recess for locking the fastener in place and an element to prevent fastener rotation in service.

PennEngineering Kunshan Facility Wins Award -  PennEngineering in Kunshan, China has been awarded the Eco Development Award by the Kunshan New District Government. The award recognized the facility for its excellence in energy saving initiatives, EIA sampling efforts and more.

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® is an expert in the development and manufacture of precision fasteners, components and systems, specializing in thin sheet attachment solutions.

Visit our PEMNET™ Resource Center at www.pemnet.com

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