

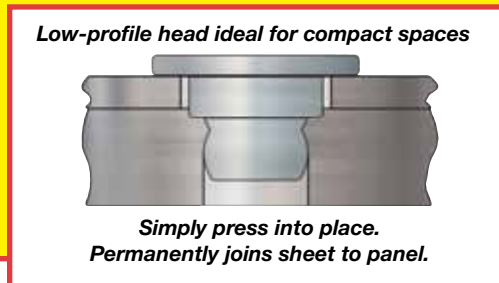
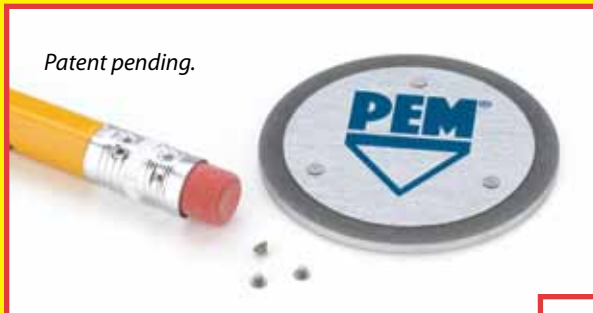
# PEM LINE

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

## **NEW FASTENER SOLUTION**

### **microPEM™ TackPin™ Fasteners**

- Micro sized for fastening within very compact designs.
  - Attaches top sheets as thin as 0.2 mm / .008".
- Clinches into base panels as hard as HRB 45 / HB 84.
  - Interference fit minimizes hole tolerance issues.
  - Tapered tip assists location.
- Low-profile head provides cosmetic benefits.
- Replaces screws: eliminating costly tapping, cross threading, torque control, vibration backout and installation time.



#### **Ideal for today's compact electronics**

- Laptops
- Notebooks / Ultrabook™ Devices
- Tablet Computers
- Cell/Smart Phones
- Gaming / Hand Held Devices



Ultrabook™ is a trademark of Intel® Corporation.

**See page 3 for more info.**

# ATLAS® INSERTS AND TOOLS

## New line of ATLAS installation tools

The new range of ATLAS installation tools is designed to meet any working requirement. We have available a large selection of spin-pull tools with pull-to-pressure and/or pull-to-stroke operation. Also available is a 14.4V lithium battery operated tool and a hexcutter tool for converting round holes to hexagonal holes.

You can read more about these tools at:

[http://www.pemnet.com/fastening\\_products/pdf/aedata.pdf](http://www.pemnet.com/fastening_products/pdf/aedata.pdf)



## Corrosion resistant fasteners

ATLAS® MONEL® blind threaded inserts (Type AEKM) suit attachment applications where equipment or components are exposed to harsh conditions. The high-strength, nickel-copper alloy 400 products feature a minimal profile head allowing for near-flush installation without requiring special hole preparation such as countersinking or dimpling.

The RoHS-compliant inserts can be installed quickly using Atlas Spin-Pull, Pull-to-Pressure, or Spin-Spin tools. They can accommodate applications where only one side of a panel is accessible. They are available in thread sizes #6-32 through 3/8-16 and M4 through M10.

MONEL is a registered trademark of Special Metals Corporation.



## Robotic cell capability

PEMSERTER® robotic cell capabilities are uniquely engineered for the PEMSERTER® Series 3000™ fastener-installation press. This advanced technology offers a completely automated “hands-off” solution for the precise and continuous installation of self-clinching fasteners.

The robotic system is equipped to pick up, move, and position a work piece for alignment with holes where fasteners will be installed automatically by the press. After fastener installation, the robot removes the finished work piece and advances to the next job.

The turnkey package integrates a FANUC robot, gripper, input conveyor with locator, output conveyor, basic sequence program, and interface to the PEMSERTER Series 3000 press. A robot slide can be supplied to expand work cells for multiple PEMSERTER presses.

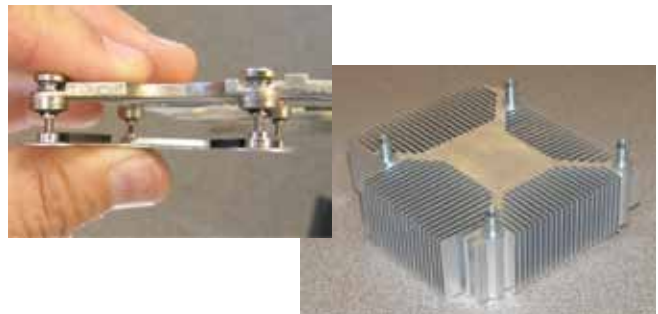


## Fastening hardware for heatsink assembly

Fasteners that can be pressed directly into extruded material are now available. Some PEM solutions are the Spinning Clinch Bolt, PEM® S.E.T.™ surface embedding hardware, and stamped hardware. These solutions employ self-captivating methods including clinching and surface embedding styles to both reduce the amount of hardware necessary for attachment and also the secondary machining operations necessary to make threads for standard hardware.

Download the complete 6-page tech paper at:

[http://www.pemnet.com/design\\_info/articles/index.html](http://www.pemnet.com/design_info/articles/index.html)



# NEW FASTENER SOLUTION

## microPEM® TackPin™ Fasteners

The New microPEM™ TackPin™ (Type T™) fasteners for compact electronic assemblies enable sheet-to-sheet attachment, replacing costly screw installation in applications where disassembly is not required. Their use eliminates typical screw-related issues (including tapping, cross-threading, torque control, and vibration backout) and ultimately promotes quick and easy installation with minimal hardware. TackPin fasteners can serve as ideal alternatives to welds or adhesives.

Among notable applications, these aluminum fasteners can be specified to attach super-thin membranes to very thin cosmetic substrates, such as keyboards. The fastener's low-profile head provides cosmetic benefits.

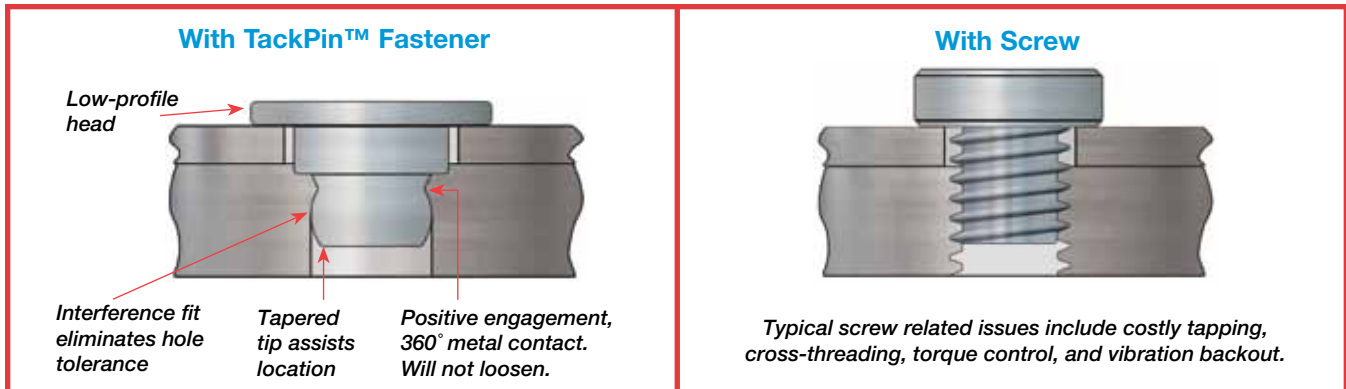
Type T microPEM TackPin fasteners install by first preparing properly sized mounting holes in the sheet to be attached and the base panel. After inserting the fastener

into these holes, the fastener is pressed into place. The fastener clinches into the base panel and the fastener's head subsequently holds the top sheet (as thin as 0.2 mm) firmly and permanently in place. The base panel can be as hard as HRB 45 or less on the Rockwell "B" scale and should be at least 0.89 mm in thickness for blind holes or 0.5 mm in thickness for thru holes. Upon installation, loosening due to vibration or other factors is not a concern.

During the process, the fastener's tapered tip assists in location, an interference fit eliminates hole-tolerance issues, and the self-clinching action results in full 360° metal contact. The fasteners can be installed automatically for high-volume applications.

## microPEM™ FASTENERS

### Comparison of TackPin™ fastener to screw installation.



To see our complete line of microPEM fasteners and capabilities go to our website and click on the microPEM button.



Locating Pins



Standoffs/spacers



TackPin Fasteners



Inserts for plastics



Low-profile head screws

## Winston-Salem updates

Our Winston-Salem facility was granted approval for the Qualified Suppliers List of Manufacturers (QSLM) for Class 2 and Class 3 threaded fasteners.

In addition, the Winston-Salem facility received a certificate of registration that certifies the Quality Management System to AS9100:2009, Rev. C.



# UPDATES

## QRP® stainless steel shackle pins

QRP, Inc. introduces a line of shackle pins offering increased tensile strength to satisfy the most demanding heavy-lifting applications. These shackle pins are manufactured from stainless steel (except for their aluminum button) to promote high corrosion resistance in the harshest environments.

Among noteworthy features, the shackles can pivot when unobstructed to move 90° on both sides of vertical to correspond with application dynamics. Full visibility of a contrasting color groove on these pins indicates pin status as “fully locked” to promote safety in use. The latest design features a red button allowing for easy identification and serving as a caution in activation.



## QRP® high performance struts

QRP, Inc. introduces high-performance struts designed for hold-open and lock-in-place applications in the aerospace and military industries. All strut types have been engineered to offer ideal solutions for engine cowlings, access panels, and maintenance doors, among other end-uses.

QRP's scissor struts in particular have been qualified for JSFM62 and JSFM64 (Joint Strike Fighter) programs by meeting or exceeding JSFM specifications for tension, compression, and handling loads.

In addition to scissor versions, the product lineup includes telescoping struts, fixed-length struts, spring struts, and hold-open rods.



## New authorized distributors

PennEngineering has appointed GIN Engineers Ltd. as an authorized distributor in Israel and CL Engineering for Russia for PEM® brand fasteners and PEMSERTER® installation presses.

## Stay connected

Follow us on LinkedIn, Twitter and Youtube for the latest news releases, bulletin updates, tech tips, job postings, videos and more. You can link from our web site.



## TECH TIP

### PEM® - REF / SELF-PIERCING, SELF-CLINCHING TOOLING

Specialized PEMSERTER® tooling introduces a newly developed capability to install PEM® Type S self-clinching nuts permanently in thin aluminum sheets without the usual need to pre-punch a mounting hole in a separate operation. When used properly and meeting key application criteria, the tooling and fastener will pierce the mounting hole during the fastener-installation process and yield associated savings in production time and money. This can be accomplished using manual tooling or automatically with in-die equipment.

You can read more about this at:

[http://www.pemnet.com/design\\_info/articles/self\\_piercing.pdf](http://www.pemnet.com/design_info/articles/self_piercing.pdf)

**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®



North America: Danboro, PA 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)  
Europe: Galway, Ireland • E-mail: [europe@pemnet.com](mailto:europe@pemnet.com) • Tel: +353-91-751714 • Fax: +353-91-753541  
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

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