

PEM[®]LINE

Fastening Products, Systems, and Applications from the Industry Pioneer

PEM[®] SpotFast™ Self-Clinching Fasteners Permanently Flush-Mount Two Metal Sheets



See Page 3



**TAPERED ALIGNMENT PIN
IDEAL FOR ATCA[®]-STYLE
FACEPLATE MOUNTING**

See Page 2



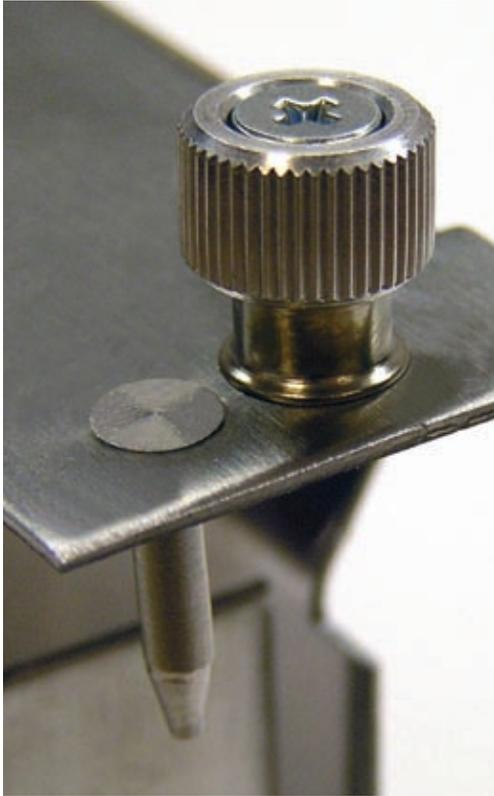
• *No Protrusions
on Either Side*

• *Ideal Replacements
for Rivets or Welding*

• *Pivot Point Capability*

**Application in Action:
An 'Exercise' in Fastening
*See Page 4***

PEM® PRODUCT SOLUTIONS



Mounted PEM® Pin and Thumb Screw

Tapered Alignment Pin Makes Faceplate Mounting Easier

A newly developed PEM® self-clinching alignment pin is engineered with a 15° tapered point to make location of the mating hole easier when mounting faceplates in telecom rack applications.

Use of the specially styled pin and proper captive retention screw provide an ideal faceplate mounting solution in accordance with Advanced TCA® (Telecom Computing Architecture) specifications.

This newest tapered pin (Type TPXS) joins a growing extended family of PEM self-clinching pilot pins to meet alignment, positioning, and pivot applications.

Type TPXS pins satisfy the TCA PICMG 3.0 specification for a 3mm alignment pin. Pins are 16mm long and made from 300 Series stainless steel. They will install permanently in aluminum or steel sheets as thin as 1mm with hardness of 70 or less on the Rockwell "B" scale.

ATCA-style faceplate mounting can be fully realized using captive retention screws with M3 threads and 0.51mm of total radial float.

Suitable Phillips-drive PEM versions offer an added advantage of an anti cross-thread feature for quick and reliable thread engagement. They are available with knurled or smooth caps and with or without retainer shoulder.

NEW BROCHURE:

PEM® AUTOSPEC® Fasteners

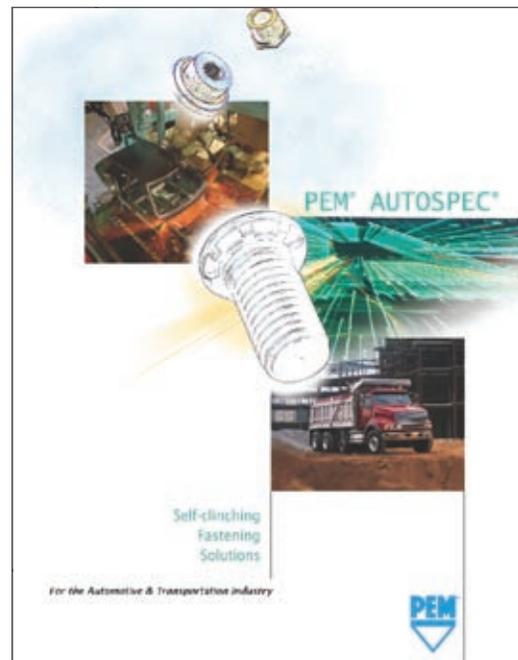
This eight-page full-color brochure profiles the comprehensive product line of fastener solutions for reliable and secure attachment of vehicle components.

An added advantage of PEM AUTOSPEC self-clinching fasteners is their ability to meet increasingly stringent automotive industry certification and quality standards.

This new brochure offers an overview of fastening products and capabilities for automakers, tier-one suppliers, and aftermarket manufacturers.

A wide range of fastening applications are listed and the complete line of PEMSERTER® fastener-installation equipment is covered.

**Download free in PDF Format:
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INNOVATION IN FASTENING

PEM® SpotFast™ Self-Clinching Fasteners Enable Flush-Mount Connection



SF-3
Average head
diameter



SF-5
Average head
diameter

Illustrations show head sizes
of the two available types



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

The RoHS-compliant steel 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.

Installed smooth with top panel...



...Sub-flush with bottom panel



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.

Used as a pivot point, the top sheet is effectively captivated between the head of the fastener and the lower (non-rotating) sheet. The top sheet then is able to rotate freely.

Standard parts can be installed in aluminum or steel sheets as thin as .030”/ 0.8mm with hardness of 80 or less on the Rockwell “B” scale.



Koko Fitness Smartrainer®

APPLICATION IN ACTION:

**Surface-Mount Spacers
'Smart Choice'
for Koko Smartrainer®**

The Koko Smartrainer® from Koko Fitness, Inc. (Norwell, MA) lifts strength training technology to higher levels by delivering the most advanced and engaging exercise-guidance technology in the industry.

This simple-to-use multi-gym gets its “smarts” from an integrated computerized “personal trainer” that automatically customizes each workout to each individual.

Such highly sophisticated equipment necessarily embodies advanced engineering supported by reliable assembly.

As evidence, a viable fastening method was required for an all-important printed circuit board assembly that senses the location of a pin in the weight stack (to track and assign the amount of weight a person will lift).

“We needed a fastening solution that would allow us to position, align, and join the sensor-board

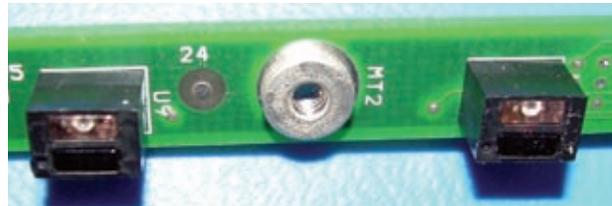
assembly to a metal tray that houses electronic system components,” recalls Joe Gately, Director of Manufacturing at Koko Fitness. “We arrived at the solution” with PEM® ReelFast® SMT threaded surface mount spacers.

“The amount of hardware (with a screw-and-nut assembly) would have doubled if we opted for a screw, spacer, washer, and nut,” Gately says. “The PEM spacers (Type SMTSO) require only a mating screw, which helps save time and money.”

Two PEM ReelFast SMT carbon steel spacers with electro plated bright tin finish are installed in each .060”-thick sensor board. Their permanent installation at designed locations on each board satisfies position and alignment issues.

The spacers (thread size #2-56) install on PC boards in the same manner and at the same time as other surface mount components prior to the automated reflow solder process.

They simply become another board component.



Installed PEM® Type SMTSO Fastener

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®



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