

PennEngineering®

PEM[®]LINE

Fastening Products, Systems, and Applications from the Industry Pioneer



NEW PRODUCT

PEM[®] Self-Clinching KEYHOLE[®] Sheet Joining Fastener

- *Joins Two Sheets Flat Against Each Other*
- *Allows for Quick Panel Attachment and Detachment*
- *Speeds Assembly*

See Page 3

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PEM® SPOTFAST™ SOLUTIONS

Since the introduction of our SpotFast™ product, more real-world applications have evolved



BEFORE: Ejector handle using custom rivet



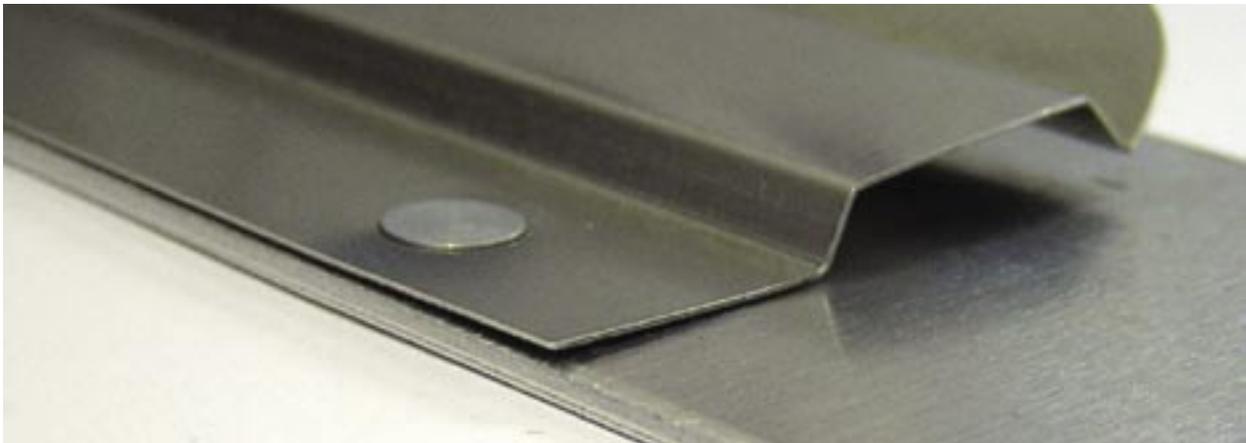
AFTER: Using SpotFast fastener and washer

'HINGING' WITH WASHER

One of our telecom/datacom customers substituted a SpotFast fastener for a custom rivet in a card ejector handle assembly. (The handles enable safe removal of printed circuit board cards from servers and routers.)

The SpotFast fastener serves as both a joining device and hinging point for the handle.

Further enhancing the pivot action, a metal wave washer is used between the metal sections to provide constant hinging action over time.



APPLICATIONS FOR EVEN THINNER SHEETS

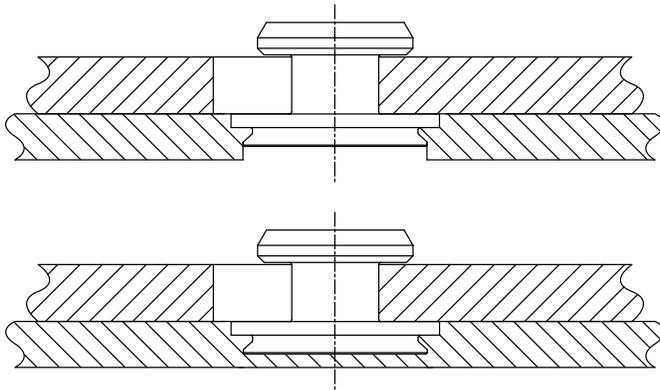
SpotFast fasteners can be used with sheets even thinner than those described in our catalog. Shown above, a SpotFast part is being used to attach a .010"/0.25mm thin sheet to a thicker panel. And attachment of even thinner sheets is possible.

As long as the thinner sheet (Panel 1) is on top, it will be clamped between the head of the SpotFast part clinched into Panel 2.

The proper SpotFast fastener to specify will be one whose overall length is less than or equal to the combined thicknesses of Panels 1 and 2.

NEW PRODUCT

Creating 'Panel-on-Panel' Assemblies



**Top drawing shows the part installed
in a thru-hole application and (at bottom)
fastener installation in a blind hole application**

KEYHOLE® self-clinching sheet joining fasteners enable two sheets to be quickly joined flat against each other and then easily detached simply by sliding the top sheet sideways and lifting it off from the "panel-on-panel" assembly.

They install permanently in a metal sheet and will accommodate a second sheet made from any material.

Adding security against unwanted sheet movement, a standard PEM®



**PEM® Type SKC-F™
Fastener**

threaded flush nut and screw can be specified.

These stainless steel Type SKC-F™ fasteners can install in aluminum or steel sheets as thin as .040"/1.02mm and feature a unique "barrel" design. Upon installation, the fastener's head will be flush or sub-flush with one side of the metal sheet and the fastener becomes an integral and permanent part of the host sheet.

These fasteners can reduce the amount of hardware to be handled and installed; promote speedier assembly and disassembly; and allow for horizontal or vertical component mounting.



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PART NUMBER LISTINGS

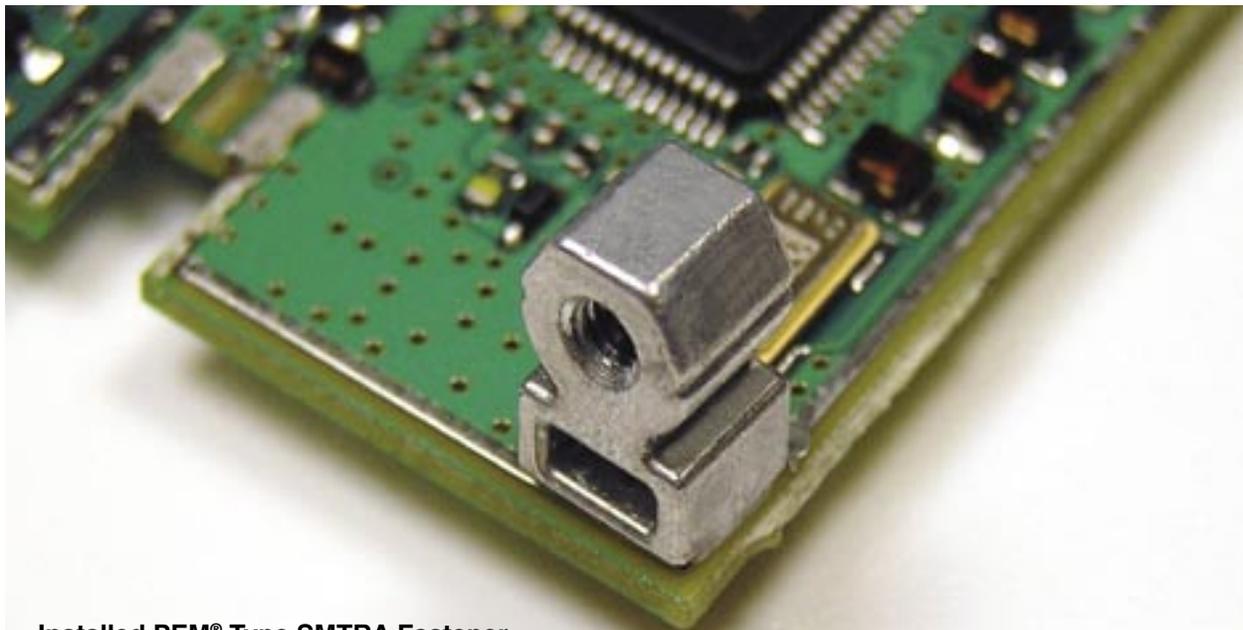
Our Website now includes a complete HTML listing for PEM® part numbers. This makes it easier to find our page during a search for a part number. The product link can be found at the bottom-right corner of our Home Page ("Part Number List"). Each part number is then linked to the specifications for that product.

GLOBAL NEWS

The Chinese version of "Bulletin PG" has been posted in the Chinese-dedicated section of our Website: <http://www.pemnet.com/chinese/>

FREE BULLETIN & DRAWING DOWNLOADS

All bulletin files can be downloaded free in PDF format via the link "Complete Product Literature" and free part drawings can be downloaded free via "CAD File Library."



Installed PEM® Type SMTRA Fastener

TECHNOLOGY IN ACTION: *Surface Mount Fasteners*

TELECOM LINE CARD

Four surface mount spacers have been specified for a PCB to mount a daughter board in a line card for optical fiber telecom equipment.

The previous method used loose hardware (four standard hexagonal pillars and eight sets of screws and washers) to secure both boards. Manual assembly slowed progress.

Results: Surface mount standoffs immediately provided a 50% reduction in required hardware and a cost reduction exceeding 50% (eliminating labor-intensive assembly by hand).

EXTERNAL WIRELESS MODEM

A surface mount right angle fastener attaches a PCB to the inside housing of an external modem. Previous attachment relied on custom-made (and expensive) brackets.

Results: Installed fastener cost has dropped dramatically and production has accelerated without secondary operations.



PEM® Type SMTSO Fasteners

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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