

# SOLUTIONENGINEERING™

NEWSLETTER

Fastening Products, Systems, and Applications from the Industry Pioneer

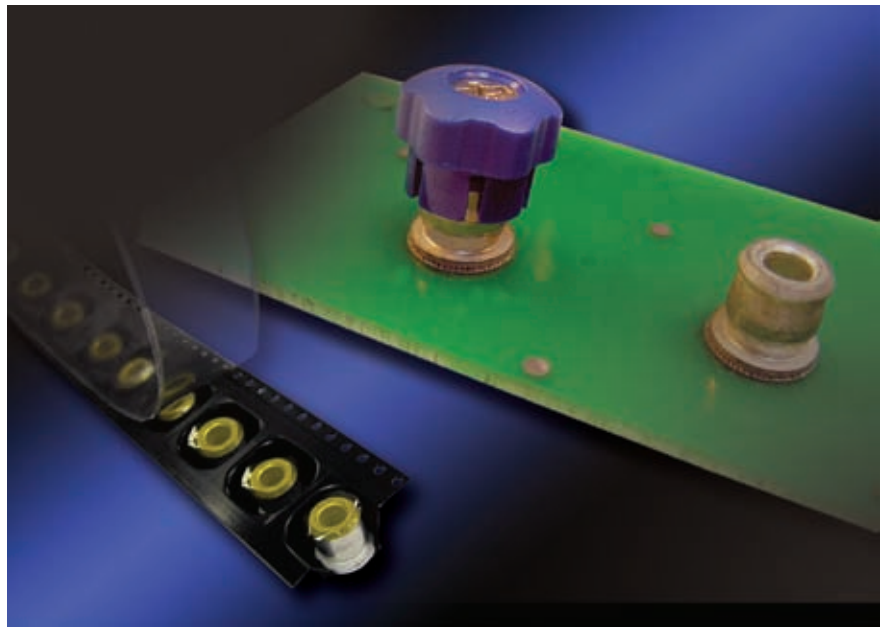
## ReelFast™ Panel Fasteners Win Two Awards

The first product in our growing family of PEM® ReelFast™ SMT fasteners has been honored with awards from two leading design magazines.

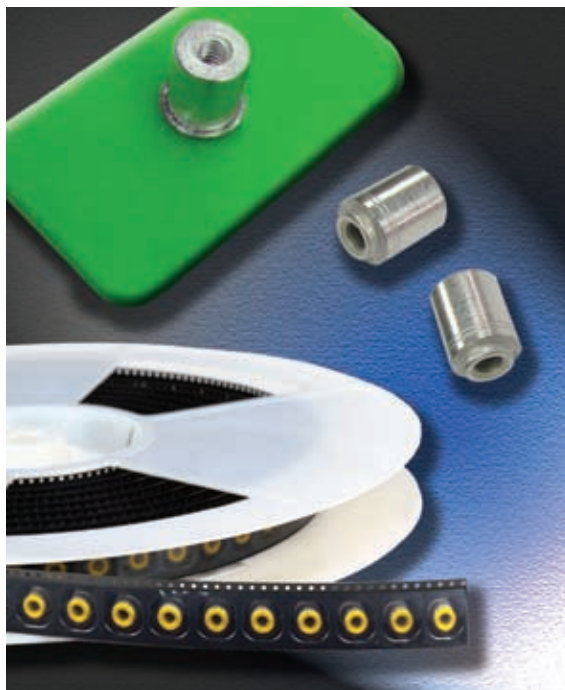
Surface mount panel fasteners (left) have won prestigious competitions sponsored by *Design News* and *Product Design & Development*.

Awards were based on voting by readers.

The panel fasteners were named in *Design News* as "**Best Fastener Product-2004.**" Readers of *PD&D* ranked these fasteners among the "**Top 5 Engineered Products-2004.**"



ReelFast™ SMT Panel Fasteners



Since the introduction of our ReelFast SMT panel fasteners, the product family has been augmented with spacers/nuts (shown at left).

All ReelFast SMT fasteners mount on printed circuit boards in the same manner and at the same time as other surface mount components prior to the automated reflow solder process.

They can reduce the risk of damage to boards; reduce the number of loose parts to be handled; and speed assembly by eliminating the need for secondary fastening operations.

Tape-and-reel packaging conforms with industry standards and preferences for other surface mount components.



ReelFast™ SMT Spacers/Nuts

# LINKING UP WITH TECHNOLOGY



## PEMSERTER®

### New Automation Package for Series 2000® Press

The PEMSERTER® Series 2000® Press can now be equipped with an Automation Signals Software and Hardware Package.

This package fulfills growing interest in systems that will link the automatic Series 2000 fastener-installation press with automation or with robotic work cells.

All necessary software and hardware modifications are provided to start the process of robotic or automation integration.

The package has been developed to meet basic requirements of integrators and customer engineering departments.

Presses equipped with Standard Automation Signals include a standard PEMSERTER Series 2000 press (shown at left) incorporating expanded outputs, special software, and signal collector.

Presses offer 24"/61 cm throat depth, cycle rates ranging from 2,750 strokes/hour to 3,600 strokes/hour, and ram force of 400 lbs. to 16,000 lbs./2.7 to 71.2 kN.

## CLINCH FASTENER INSTALLATION TROUBLESHOOTING

**PROBLEMS:** Fastener not seated squarely-  
Reduced holding power

**POSSIBLE CAUSES:**

- Punch and anvil faces are not parallel or panel cocked during installation

**SOLUTIONS:**

- Ensure punch and anvil are flat and parallel and hard
- Ensure that large panels are held perpendicular to punch and anvil



# TRENDS IN FASTENING

**SMALLER PARTS:** Compact designs for components inherently shrink the “real estate” available to place and install hardware. Miniature fastener types and styles have evolved to fit effectively in the increasingly restrictive design envelopes encountered in industries ranging from electronics to aerospace.

In applications where threads may be required for very thin and “ultra-thin” metal sheets, miniature clinch fasteners offer strong, permanent, and reusable threaded solutions. Some types will even promote installation closer to edges to optimize use in minimal space.

**FEWER PARTS:** A possibility for some types of fasteners to reduce hardware requirements opens the door for fewer parts in an assembly, which is a perennial quest. In the case of clinch fasteners, usually only a single mating screw or nut is required to complete attachment of components. This reduces hardware by half, accelerates the assembly process, and lowers costs.

*PEM® StickScrew® System*

**FASTER INSTALLATION:** As parts get smaller, innovative delivery systems and automation have arrived to make handling and installation quicker and easier.

Loose screws have especially presented problems over the years.

When workers must insert small screws by hand or when each screw must be handled and fed one at a time into conventional semi-automated power fastening tools, productivity rates suffer and associated costs rise.

Conventional screw-insertion methods usually fail in assuring proper seating torque for small screws will be achieved consistently and accurately.

As a remedy, systems have been engineered for fast and accurate small-screw insertion.

These can eliminate loose screws by utilizing “sticks” of serially connected hex-head screws in thread sizes as small as #0-80 and M2.

These sticks are simply placed in a driver and, when a job gets under way, screws install and twist off cleanly when precise seating torque is reached. Some systems have been further enhanced with robotics to fully automate the process of installing small screws in metal or plastic components.



## [www.pennfast.com](http://www.pennfast.com)

All **online CAD drawings** for the entire line of our fastener products **can be directly inserted** into market-leading CAD systems. No download or importing is necessary.

The enabling tool allows designers to insert drawings directly into as many as 30 different CAD systems and versions, as well as enabling downloads into as many as 20 each 2D and 3D file formats.

The procedure is easy: Simply select the part, press the button, and the geometry (2D or 3D) is immediately inserted into a design.

Designers can access the capability at [www.pennfast.com/cad\\_library](http://www.pennfast.com/cad_library)

The online CAD library includes drawings of all types of PEM self-clinching, broaching, weld, and surface mount fasteners, SI® inserts for plastics, and Atlas™ SpinTite®, MaxTite®, and Plus+Tite™ blind threaded inserts.



# PRODUCT NEWS



## AE® Prototype Kit

The AE prototype kit contains a wide variety of Atlas™ blind threaded inserts for repair or prototype needs.

The kit contains more than 1,200 pieces of Type AELS Spin-Tite® unified and metric fasteners, properly sized drill bits, and a hand installation tool. (Call for pricing.)

## PEM® Self-Locating Projection Weld Nuts

These provide load-bearing threads in metal sheets too thin to tap and incorporate unique engineering to help promote cost-effective and efficient component assembly.

Among design advantages compared with other traditional weld nuts to help speed production:

- **Self-locating shanks** properly position the nuts without the need for pilots or complicated electrodes and further serve to protect threads from weld splatter, making time-consuming splatter-removal operations unnecessary.

- Engineered **projections** prevent burn-outs in thin sheets.

- **Round head** eliminates any need for tedious, time-consuming indexing.

PEM weld nuts are available in steel (Type WN) and stainless steel (Type WNS) in thread sizes ranging from #4-40 through 1/4-20 and M3 through M6.

Their compact profile enables them to fit on narrow flanges and stainless types offer the added benefits of corrosion-resistance and non-magnetic properties.

All types can be installed easily and permanently in steel or stainless sheets as thin as .030"/0.8mm.

**PennEngineering® Fastening Technologies 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.**

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