

# PennEngineering®

**P**RODUCT GUIDE  
**A**ND INDEX  
**T**O BULLETINS

## BULLETIN



**STICKSCREW®**



**PG** 207

Revised 1107

# INTRODUCTION

PennEngineering offers the hardware, equipment, and technical services and support to satisfy assembly needs from design through production.

**PEM®** brand fasteners utilize self-clinching, broaching, flaring, surface mount, or weld technology to provide strong, reusable, and permanent threads in thin sheetmetal or P.C. board materials.

**ATLAS®** brand blind threaded rivets provide strong and reusable permanent threads in sheet materials where only one side is accessible for hardware installation.

**SI®** brand inserts employ press-in, molded-in or heat/ultrasonic installation methods to provide strong, reusable, permanent threads in plastic materials.

**STICKSCREW®** System uniquely offers a time-saving and cost-effective solution for inserting small screws to predetermined torque values.

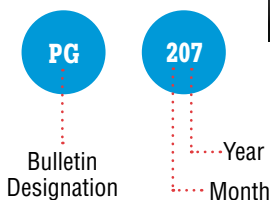
Our advanced and pioneering fastener-installation equipment is engineered to streamline and enhance the production process for any operation. Included are **PEMSERTER®** installation presses, in-die installation equipment, robotics, "blind" threaded insert tools, and small screw insertion systems.

The PennEngineering catalog has tabbed sections for each product line.

The bulletin designation and date can be found at the bottom right of each product bulletin. Fastener bulletins appear alphabetically in each section by bulletin designation.



Example: ↑



# QUICK PRODUCT LOCATOR

If you need information on any of these products

Request/See Bulletin

## PEM® FASTENERS

AS, AC, LAS, LAC	ALA
B, BS	B
CFHA, CFHC, CHA, CHC, CSOS, CSS	CH
S, SS, CLS, CLSS, SP, CLA, SL, SMPS, H, HN, HNL	CL
F	F
FEO, FE, UL, FEOX, FEX, U	FE
FH, FHS, FHA, HFH, HFHB, HFHS, HFE, HFED	
TFH, TFHS, FH4, TPS, FHL, FHLS	FH
KF2, KFS2, KFE, KFSE, PFK, KFH, KSSB, SOSG, SOAG, KFB3, KPS6	K
LK, LKS, LKA	LK
PFHV, PFC2, PFS2, PFC2P, PF30, PF31, PF32, PF50, PF60	
PF11, PF11M, PF12, PF12M, PTL2, PFK, F10, PR10, PS10, N10, PFF, PFP, PFK, PF10, PFC4, SMTPR, PSHP	PF
PL, PLC, CFN	PL
RAA, RAS	RA
SKC	SK
SMTSO, SMTRA, PSHP, SMTPR	SMT
SO, SOA, SOS, SO4, TSO, TSOA, TSOS	
BSO, BSOA, BSOS, BS04, DSO, DSOS	SO
PFC4, SP, SO4, BS04, FH4	SS
SSA, SSC, SSS, KSSB	SSA
TD, TDO	TD
WN, WNS	WN

## SI® INSERTS FOR PLASTICS

IUB, IUC, IUTB, IUTC, ISB, ISC, IBB, IBC, IBLC, ITB, ITC, STKB, STKC, NFPC, NFPA, PPB, PFLB, PKB	SI
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## ATLAS® BLIND THREADED INSERTS

Blind Threaded Inserts	AE
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## STICKSCREW® SYSTEM

StickScrew® System	SST
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## INSTALLATION EQUIPMENT


Fastener Installation equipment	PS
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## NEW PRODUCTS


TPXS	FPS
SCB, SCBJ	SCB
SKC-F	SK-F
SF, SFP	SF





FLOATING FASTENERS (Bulletin ALA)		
	TYPES	GENERAL INFORMATION
	AS, AC	Floating action compensates for mating hole misalignment. Thread sizes #4 to 1/4" and M3 to M6.


TRI-DENT® SELF-CLINCHING LOCKNUTS (Bulletin CL)		
	TYPES	GENERAL INFORMATION
	SL	Locknuts designed with a unique and economical TRI-DENT® locking feature, which meets demanding locking performance requirements.


FLOATING SELF-LOCKING FASTENERS (Bulletin ALA)		
	TYPES	GENERAL INFORMATION
	LAS, LAC	Floating action with locking threads compensates for mating hole misalignment. Thread sizes #4 to 1/4" and M3 to M6.


THIN SHEET SELF-CLINCHING NUTS (Bulletin CL)		
	TYPES	GENERAL INFORMATION
	SMPS	Nuts that feature a lower profile and can be mounted closer to the edge of a sheet than standard self-clinching nuts.


BLIND FASTENERS (Bulletin B)		
	TYPES	GENERAL INFORMATION
	B, BS	Used for applications requiring closed thread ends. Blind end limits screw penetration and excludes foreign matter. Thread sizes #4 to 1/4" and M3 to M6.


PEMSERT® FLUSH FASTENERS (Bulletin F)		
	TYPES	GENERAL INFORMATION
	F	Fastener remains flush with both sides in sheets as thin as .060" / 1.5 mm. Thread sizes #2 to 1/4" and M2 to M6.

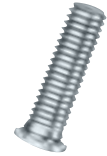
CONCEALED-HEAD STUDS (Bulletin CH)		
	TYPES	GENERAL INFORMATION
	CHC, CHA, CFHC, CFHA	Installed into a blind milled hole where surface opposite stud must remain unmarred. Thread sizes #4 to #10 and M3 to M5.


MINIATURE FASTENERS (Bulletin FE)		
	TYPES	GENERAL INFORMATION
	U, UL, FE, FEO, FEX, FEOX	Strong threads in a minimum of space. Available with locking or non-locking threads. Can be installed into sheets as thin as .020" / 0.76 mm. Thread sizes #0 to 1/4" and M2 to M6.


CONCEALED-HEAD STANDOFFS (Bulletin CH)		
	TYPES	GENERAL INFORMATION
	CSS, CSOS	Installed into a blind milled hole where surface opposite standoff must remain unmarred. Thread sizes #4 to 1/4" and M3 to M6.

SELF-CLINCHING FLUSH-HEAD STUDS (Bulletin FH)		
	TYPES	GENERAL INFORMATION
	FH, FHS, FHA, FH4	Flush-head studs for sheet thickness of .040" / 1 mm and greater.


SELF-CLINCHING NUTS (Bulletin CL)		
	TYPES	GENERAL INFORMATION
	S, SS, H, HN, HNL, CLS, CLSS, CLA	Strong internal threads in sheets as thin as .030" / 0.8 mm. Thread sizes #2 to 1/2" and M2 to M10.

SELF-CLINCHING NON-FLUSH STUDS (Bulletin FH)		
	TYPES	GENERAL INFORMATION
	TFH, TFHS	Non-flush studs for sheets as thin as .020" / 0.51 mm. Stud head will project above the sheet surface approximately .025" / 0.64 mm.


NUTS FOR STAINLESS STEEL SHEETS (Bulletin CL)		
	TYPES	GENERAL INFORMATION
	SP	Installs into stainless steel sheets as thin as .030" / 0.8 mm. Thread sizes #4 to 1/4" and M3 to M6.

SELF-CLINCHING HIGH-STRENGTH STUDS (Bulletin FH)		
	TYPES	GENERAL INFORMATION
	HFH, HFHS, HFHB	For high-strength applications in sheets as thin as .050" / 1.3 mm. Type HFHB is used for superior electrical/mechanical attachment in copper bus bars.


**LOW DISPLACEMENT HEAD STUDS (Bulletin FH)**

	TYPES	GENERAL INFORMATION
	FHL, FHLS	Installs closer to the edge of a sheet than standard studs without causing that edge to bulge. Flush-head for sheets thickness .040" / 1 mm and greater.


**BROACHING TYPE PANEL FASTENERS (Bulletin K)**

	TYPES	GENERAL INFORMATION
	PFK	Panel fasteners with spring-loaded captive screws for mounting on P.C. boards. Thread sizes #4, #6, and M3.


**STUDS FOR STAINLESS STEEL SHEETS (Bulletin FH)**

	TYPES	GENERAL INFORMATION
	FH4	Installs into stainless steel sheets as thin as .040" / 1 mm. For use in sheet hardness of 92 or less on the Rockwell "B" scale.


**FLARE-MOUNTED STANDOFFS (Bulletin K)**

	TYPES	GENERAL INFORMATION
	KFB3	For spacing or stacking P.C. boards. Special shank is flared to increase pushout resistance. Thread sizes #4, #6 and M3, M4.


**FLUSH-MOUNTED PILOT PINS (Bulletin FH)**

	TYPES	GENERAL INFORMATION
	TPS	Self-clinching pilot pins satisfy a wide range of positioning, pivot, and alignment applications. The chamfered end makes mating hole location easy.


**FOILGARD® FASTENERS (Bulletin K)**

	TYPES	GENERAL INFORMATION
	KPS6	Used in plated thru-holes in multi-layer P.C. boards. The self-expanding shank ensures positive contact with plated thru-holes. Thread sizes #4 to #10 and M3 to M5.


**HIGH-STRENGTH STUDS FOR THIN SHEETS (Bulletin FH)**

	TYPES	GENERAL INFORMATION
	HFE	Self-clinching studs with an enlarged head diameter that provide high-strength in sheets as thin as .040" / 1 mm.


**GROUNDING STANDOFFS (Bulletin K)**

	TYPES	GENERAL INFORMATION
	SOAG, SOSG	Used to ground P.C. boards to steel or aluminum chassis. Annular projecting teeth eliminate the need for serrated or starwashers to make good electrical contact with the circuit foil. Thread sizes #4, #6 and M3, M4.


**BROACHING TYPE STANDOFFS (Bulletin K)**

	TYPES	GENERAL INFORMATION
	KFE, KFSE	Standoffs available with or without threads for mounting on P.C. boards, for spacing or stacking. Thread sizes #4, #6 and M3.


**BROACHING SNAP-TOP® STANDOFFS (Bulletin K)**

	TYPES	GENERAL INFORMATION
	KSSB	All-metal standoffs with a spring action to hold a PC board securely without screws or other threaded hardware.


**BROACHING TYPE NUTS (Bulletin K)**

	TYPES	GENERAL INFORMATION
	KF2, KFS2	Internally threaded fasteners for mounting on P.C. boards. Thread sizes #2 to #10 and M2 to M5.


**PEMFLEX® SELF-LOCKING FASTENERS (Bulletin LK)**

	TYPES	GENERAL INFORMATION
	LK, LKS, LKA	The PEMFLEX® design provides NASM25027 locking performance without damaging mating threads. Thread sizes #2 to #10 and M2.5 to M5.


**BROACHING TYPE STUDS (Bulletin K)**

	TYPES	GENERAL INFORMATION
	KFH	Studs for mounting into P.C. boards which can be used as solderable connectors as well as threaded fasteners. Thread sizes #4 to #10 and M3 to M5.


**PANEL FASTENER ASSEMBLIES (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PFHV	Low cost panel fasteners with a small, compact design for limited space applications. Thread sizes #4 & #6 and M3 to M4.


**FLUSH-MOUNTED PANEL SCREWS (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PR10, PS10, N10, F10	Captive screws with self-clinching retainers can be flush mounted into sheets as thin as .125" / 3.2 mm. Thread sizes #4 to #10 and M3 to M5.


**HYBRID™ FLOATING PANEL FASTENERS (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PFF	Floating panel fasteners that can be installed into any panel material with tool or finger operation, and can compensate for up to .060"/1.52mm mating hole misalignment.


**HYBRID™ PANEL FASTENERS (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PF50	Self-clinching panel fastener assemblies with a standard black ABS knob with a steel retainer and screw. Non-stocked standard colors and custom colors are available.


**LOW-PROFILE PANEL FASTENERS (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PF50 PF60	Low-profile panel fasteners with a large head and Phillips recess for tool or finger operation. Available with smooth cap (Type PF60) for limited access.


**PANEL FASTENER ASSEMBLIES (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PFC2, PFS2	Completely pre-assembled spring-loaded panel fasteners that meet UL 508 "operator access area" requirements. Thread sizes #4 to 1/4" and M3 to M6.


**ACCESS HARDWARE FOR STAINLESS (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PFC4	Specially hardened stainless steel access hardware for use in stainless steel sheets.


**PHILLIPS DRIVE PANEL FASTENERS (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PFC2P	Panel fasteners that are tool-only to meet UL 1950 "service area access" requirements. Thread sizes #4 to 1/4" and M3 to M6.


**PEMHEX® SELF-LOCKING FASTENERS (Bulletin PL)**

	TYPES	GENERAL INFORMATION
	PL, PLC	Trademarked blue nylon locking element (for unified fasteners) prevents thread galling. Locking performance meets NASM25027. Thread sizes #4 to #10 and M3 to M5.


**LOW-PROFILE PANEL FASTENERS (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PF30, PF31, PF32	Panel fasteners with a low-profile design with a large knurled head that can be tool or hand actuated. Thread sizes #4 to 1/4" and M3 to M6.


**NYLON INSERT SELF-LOCKING NUTS (Bulletin PL)**

	TYPES	GENERAL INFORMATION
	CFN	Broaching nuts for use in thinner sheet, close-to-edge applications. The locking element provides prevailing torque to eliminate loosening of mating threaded hardware.


**PANEL FASTENER ASSEMBLIES (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PF11 PF11M, PF12, PF12M	Universal slot/Phillips recess. Type PF11 (knurled cap) meets UL 508 "operator access area" requirements. Type PF12 (smooth cap) meets UL 1950 "service access area" requirements.


**R'ANGLE® RIGHT ANGLE CLINCH FASTENER (Bulletin RA)**

	TYPES	GENERAL INFORMATION
	RAA	Provide strong right angle attachment points in aluminum sheets. Attachment is easily made using thread forming screws.


**SPRING-LOADED, PLUNGER ASSEMBLY (Bulletin PF)**

	TYPES	GENERAL INFORMATION
	PTL2	Used as a retractable drawer-guide stop, indexing pins and latch detents. Can be locked in retracted position. Plunger diameter .250" / 6.4 mm.


**R'ANGLE® RIGHT ANGLE CLINCH FASTENER (Bulletin RA)**

	TYPES	GENERAL INFORMATION
	RAS	Provide strong right angle attachment points in steel sheets. Type RAS fasteners are threaded and attachment is simply made using a standard screw. Thread sizes #4 to #8, M3 and M4.


**KEYHOLE® STANDOFFS (Bulletin SK)**

	TYPES	GENERAL INFORMATION
	SKC	Designed so that a P.C. board or component can be quickly slipped into place and then removed by sliding the board sideways and lifting it off.


**FASTENERS FOR STAINLESS SHEETS (Bulletin SS)**

	TYPES	GENERAL INFORMATION
	PFC4, SP, S04, BS04, FH4	Specially hardened stainless steel fasteners for use in stainless steel sheets.


**SURFACE MOUNT FASTENERS (Bulletin SMT)**

	TYPES	GENERAL INFORMATION
	SMTPR, SMTSO, SMTRA	ReelFast® SMT surface mount fasteners are mounted on printed circuit boards in the same manner as other surface mount components.


**SNAP-TOP® STANDOFFS (Bulletin SSA)**

	TYPES	GENERAL INFORMATION
	SSA, SSS, SSC, KSSB	Accurately space a P.C. board or panel from a metal chassis simply by snapping board on standoff.


**THRU-HOLE, THREADED STANDOFFS (Bulletin SO)**

	TYPES	GENERAL INFORMATION
	SO, SOS, SOA, SO4	Self-clinching standoffs with thru-hole threads. Thread sizes #4 to #10 and M3 to M5. Also available unthreaded on special order.


**TY-D® CABLE-TIE MOUNT HARDWARE (Bulletin TD)**

	TYPES	GENERAL INFORMATION
	TD	Self-clinching to permanently mount in enclosure. Replaces plastic or loose hardware devices. Tie slides easily through "eye" of fastener for fast cable mounting.


**BLIND, THREADED STANDOFFS (Bulletin SO)**

	TYPES	GENERAL INFORMATION
	BSO, BSOS, BSOA, BS04	Self-clinching standoffs with blind threads. Thread sizes #4 to #10 and M3 to M5.


**SELF-CLINCHING CABLE-TIE HOOKS (Bulletin TD)**

	TYPES	GENERAL INFORMATION
	TDO	Allows for easy removal and return of tie-bundled wires from their mounting points without cutting or damaging the cable ties.


**STANDOFFS FOR STAINLESS STEEL (Bulletin SO)**

	TYPES	GENERAL INFORMATION
	S04, BS04	Installs into stainless steel sheets as thin as .040" / 1 mm. For use in sheet hardness of 88 or less on the Rockwell "B" scale.


**PROJECTION WELD NUTS (Bulletin WN)**

	TYPES	GENERAL INFORMATION
	WN, WNS	Unique PEM design prevents burnouts and eliminates the need for indexing and retapping to remove weld spatter. Thread sizes #4 to 1/4" and M3 to M6.

**STANDOFFS FOR ULTRA-THIN SHEETS (Bulletin SO)**

	TYPES	GENERAL INFORMATION
	TSO, TSOS, TSOA	These self-clinching standoffs provide permanent threads in sheets as thin as .025" / 0.63 mm.

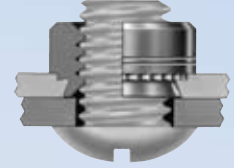
**THREADED STANDOFFS (Bulletin SO)**

	TYPES	GENERAL INFORMATION
	DSO, DSOS	Self-clinching, threaded standoffs for use in close-to-edge applications.

## Self-clinching Fastener Installation Do's And Don'ts

### “Do's”

- Do** provide mounting hole of specified size for each fastener.
- Do** make certain that shank (or pilot) is within hole before applying installation force.
- Do** apply squeezing force between parallel surfaces.
- Do** apply sufficient force to totally embed clinching ring around entire circumference and to bring shoulder squarely in contact with sheet. For some fasteners, installation will be complete when the head is flush with the panel surface.



### “Don'ts”

- Don't** install steel or stainless steel fasteners in aluminum panels before anodizing or finishing.
- Don't** deburr mounting holes on either side of sheet before installing fasteners – deburring will remove metal required for clinching fastener into sheet.
- Don't** install fastener closer to edge of sheet than minimum edge distance indicated by manufacturer – unless a special fixture is used to restrict bulging of sheet edge.
- Don't** over-squeeze. It will crush the head, distort threads, and buckle the sheet. Be certain to determine optimum installation force by test prior to production runs.
- Don't** attempt to insert fastener with a hammer blow – under any circumstances. A hammer blow won't permit the sheet metal to flow and develop an interlock with the fastener's contour.
- Don't** install screw in the head side of fastener. Install from opposite side so that the fastener load is toward sheet. The clinching force is designed only to hold the fastener during handling and to resist torque during assembly.
- Don't** install fastener on pre-painted side of panel.

### PEM® Fasteners Prototype Kits

The PEM prototype kit contains a wide variety of PEM self-clinching fasteners for your prototype needs. The kit contains over 1,000 different nuts, studs, standoffs, and panel fasteners of various types and sizes, so you can choose the one which will best suit your specific design requirements. The kit is available with unified or metric parts. Price \$99.00 (subject to change without notice).



**ULTRASONIC/HEAT STAKING INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	IUB, IUC	Tapered, thru-threaded inserts designed for use in tapered holes. Taper allows for rapid and accurate alignment prior to installation.

**PRESS-IN THREADED INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	NFPA, NFPC	Hexagonal inserts that provide strong, reusable threads. Hexagonal "barbed" configuration ensures high torque-out and pullout values.

**ULTRASONIC/HEAT STAKING INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	IUTB, IUTC	Straight wall, thru-threaded inserts designed for use in straight holes. Self-aligning lead-in provides for accurate alignment prior to installation.

**PRESS-IN THREADED INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	PPB	Thru-threaded, slotted inserts with strong, reusable threads. The slot compresses allowing easy access into the mounting hole.

**ULTRASONIC/HEAT STAKING INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	ISB, ISC	Symmetrical, thru-threaded inserts designed for use in straight or tapered holes. Symmetrical design eliminates the need for orientation.

**PRESS-IN THREADED INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	PFLB	Flange-head, slotted inserts with strong, reusable threads. Flange-head eliminates direct contact of plastic with mating parts.

**MOLDED-IN THREADED INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	IBB, IBC	Inserts with a blind end to protect the threads from plastic intrusion.

**PRESS-IN THREADED INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	PKB	Straight knurl, slotted inserts with strong, reusable threads. Straight knurling at the top end of the insert offers higher torsional resistance.

**MOLDED-IN THREADED INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	IBLC	Self-locking, blind threaded inserts with deformed threads to lock screw in place to resist vibration. Blind end protects the threads from plastic intrusion.

- Strong, durable threads in plastic
- Ultrasonic/heat stake, molded-in, and press-in installation types
- Available in brass, aluminum, and stainless steel



**MOLDED-IN THREADED INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	ITB, ITC	Thru-threaded inserts with a pilot diameter and undercut to allow plastic to flow into grooves providing high pullout resistance.

**MOLDED-IN THREADED INSERTS (Bulletin SI)**

	TYPES	GENERAL INFORMATION
	STKB, STKC	Thru-threaded inserts with a uniform knurl diameter to reduce the risk of sink marks. Available in varying lengths for injection molding assemblies.

**SI® Inserts Prototype Kits**

The SI prototype kit contains a wide variety of SI threaded inserts for plastics for your prototype needs. The kit contains over 1,000 ultrasonic/heat staking, molded-in, and press-in inserts in various types and sizes, so you can choose the one which will best suit your specific design requirements. The kit contains both unified and metric parts. Part # PKSI-100. Price \$50.00 (subject to change without notice).









# ATLAS® BLIND THREADED INSERTS


## HALF-HEX SHANK LOW-PROFILE HEAD

	TYPES	GENERAL INFORMATION
	AEHS	SpinTite® inserts with a hex body design for high torque-out resistance. Available with open or closed end.


## SWAGING LOW-PROFILE HEAD

	TYPES	GENERAL INFORMATION
	AETS	SpinTite® inserts that work in any thickness over .029"/0.76mm including blind holes. They provide high torque-out resistance and minimal backside protrusion. Available with open or closed end.


## RIB-WALL LOW-PROFILE HEAD

	TYPES	GENERAL INFORMATION
	AELS	SpinTite® inserts with a large diameter, low-profile head and knurled shank. Offers highest all around strength. Available with open or closed end.


## BLIND THREADED STUDS

	TYPES	GENERAL INFORMATION
	AES	SpinTite® studs provide strong external threads in blind applications. Available with anti-cross threading feature.


## RIB-WALL MINIMIZED-PROFILE HEAD

	TYPES	GENERAL INFORMATION
	AEKS	SpinTite® inserts with a minimized-profile head design allows for near-flush installations with no need for countersink drilling or dimpling of the parent material. Available with open or closed end.


## HEAVY DUTY THREADED INSERTS

	TYPES	GENERAL INFORMATION
	AE	MaxTite® threaded inserts are designed for high-load applications. Available with countersunk feature for flush installations, rib or key features for high-torque applications, and full hex body.

## THIN-WALL LOW-PROFILE HEAD

	TYPES	GENERAL INFORMATION
	AEOS	SpinTite® inserts with a low-profile head design which allows for near-flush installations with no need for countersink drilling or dimpling of the parent material.

## PRE-BULBED BLIND INSERTS

	TYPES	GENERAL INFORMATION
	PB	Plus+Tite® inserts have superior pullout resistance in plastics and thin sheet metal. They install into variable thickness materials.

## SERIES 800 SPIN/SPIN TOOL

ATLAS® Series 800 tools provide totally pneumatic, spin/spin operation to easily install all ATLAS SpinTite® and Plus+Tite® fasteners. They are lightweight, economical, low maintenance, ergonomically designed, and portable.



## HEX WRENCH INSTALLATION TOOL

The ATLAS® Hex Wrench Tool is designed for installing SpinTite® and MaxTite® fasteners. This tool is ideal for field installations, repair work, and prototype applications.



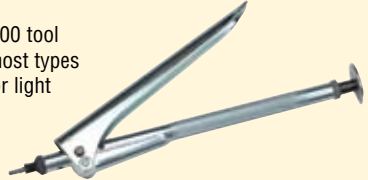
## ATLAS® SPIN/PULL TOOL

This ATLAS® portable tool provides a hydraulic/pneumatic action to install ATLAS MaxTite® products for those heavy-duty applications. It is a powerful, efficient, and quiet tool, designed to provide long life and trouble free service.



## L6000 INSTALLATION TOOL

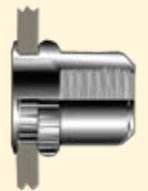
The ATLAS® hand operated L6000 tool installs SpinTite® fasteners in most types and sizes and is also suitable for light production requirements.

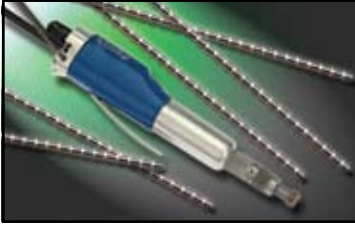


**AE® Prototype Kits**  
The AE prototype kit contains a wide variety of Atlas blind threaded rivets for repair or prototype needs. The kit contains over 1,200 pieces of Type AELS SpinTite® unified and metric fasteners, proper sized drill bits, and a hand installation tool. To order specify item number PKAE-100. Price \$99.00 (subject to change without notice).



- Fast, easy, one-sided installation
- Install anytime during production
- Ideal for close-to-edge applications
- Attach to panels of any hardness





**STICKSCREW® SYSTEM (Bulletin SST)**

A low cost system that combines a lightweight driver and “sticks” of serially connected hex head screws. Simply insert the stick in the driver, advance to the second screw, squeeze the trigger, place the tip of the rotating screw in the threaded hole and the screw is driven home, twisting off cleanly when precise seating torque is reached.

**INSTALLATION EQUIPMENT**



**PEMSERTER® IN-DIE FASTENER FEEDING SYSTEM**

The In-die system allows you to install fasteners during the stamping process so that no secondary insertion operations are required, thus reducing overall labor costs, improving part quality, and dramatically improving product through-put.



**PEMSERTER® TRU-MOTION™ PRESSES**

TRU-MOTION™ presses are custom integrated systems that combine PEMSERTER automatic fastener installation presses with automated workpiece handling. Available integrated systems include X/Y positioning tables, rotary indexers, and multi-axis robotics. These systems can also be directly integrated into your production line, working as a station and providing feedback to your master control system.



**PEMSERTER® SERIES 3000™ PRESS**

The new Series 3000 automatic fastener-installation press can install self-clinching fasteners up to 30% faster than traditional systems to deliver comparable productivity gains. Full servo electromechanical actuation technology provides significant improvement in operating consistency, improved reliability, increased efficiencies and minimized maintenance. Total elimination of hydraulic fluids provides an environmentally friendly system.



**PEMSERTER® SERIES 2000® PRESS**

The Series 2000 press is a 71.2 kN / 16,000 lbs. automatic press system, that utilizes a programmable logic controller and a menu driven touch screen, operator interfacing system, which is available in nine different languages. Touch screen allows for quick-run-set-up, easy operator training, and precise fastener installation setups.

The Series 2000 press has a unique LIGHTSTREAM® Operator Safety System (patent applied for). It is a wireless, fail-safe system which utilizes a pair of infrared light beams to improve worker and workpiece safety.



**PEMSERTER® SERIES 4® PRESS**

The Series 4 press is a 53.3 kN / 12,000 lbs. manual press, equipped with an adjustable stroke length, and a 45.7 cm / 18” throat depth which provides a generous work area for a variety of chassis configurations. It is designed to install self-clinching fasteners in sizes M2 thru M10 / #0 thru 3/8” in steel, and sizes up to M12 / 1/2” in aluminum or circuit boards.

	<b>PEMSERTER® SERIES LT/4™ PRESS</b>	
	<p>The Series LT/4 press is a 26.7 kN / 6,000 lbs manual press designed to install unified or metric self-clinching nuts, studs, and standoffs requiring three tons of insertion force or less. It has an internal point-of-operation safety and a unique removable anvil base to accept future applications.</p> <p>Stand available.</p>	

	<b>PEMSERTER® SERIES P3™ PNEUMATIC HAND PRESS</b>	
	<p>The Series P3 fastener installation press is a portable hand tool weighing only 4.6 kg. / 10 lbs. that can develop a squeezing force of 26.7 kN / 6,000 lbs.</p> <p>With the Series P3 press, you can easily install self-clinching nuts and studs in metric or unified sizes. The metric press kit contains punches and anvils to install nuts (S, CLS, and CLA) ranging from M2 thru M5 thread sizes and studs (FH, FHS, and FHA up to 12mm in length) ranging from M2.5 thru M5 thread sizes. The unified press kit contains punches and anvils to install nuts and studs up to 0.5" in length ranging from #2-56 thru #10-32 thread sizes.</p>	

	<b>PEMSERTER® MICRO-MATE® HAND TOOL</b>	
	<p>The MICRO-MATE hand press is a versatile hand tool weighing only 1.25 kg. / 2.75 lbs. that can develop a squeezing force of 1,134 kg. / 2,500 lbs.</p> <p>The kit contains one hand tool, one flat punch, seven punches and dies, one punch adapter bushing, one edge-depth guide, five fastener anvils and a storage case. The metric kit installs nut sizes M3 to M5, while the unified kit installs nut sizes #2-56 to #10-32.</p>	

**NEW PRODUCTS**

<b>ATCA® FACEPLATE FASTENING SOLUTIONS (Bulletin FPS)</b>		
	TYPES	GENERAL INFORMATION
	TPXS™	PEM® Type TPXS pin meets the TCA PICMG 3.0 specification for a 3mm alignment pin. The 15° tapered point makes mating hole location easy.

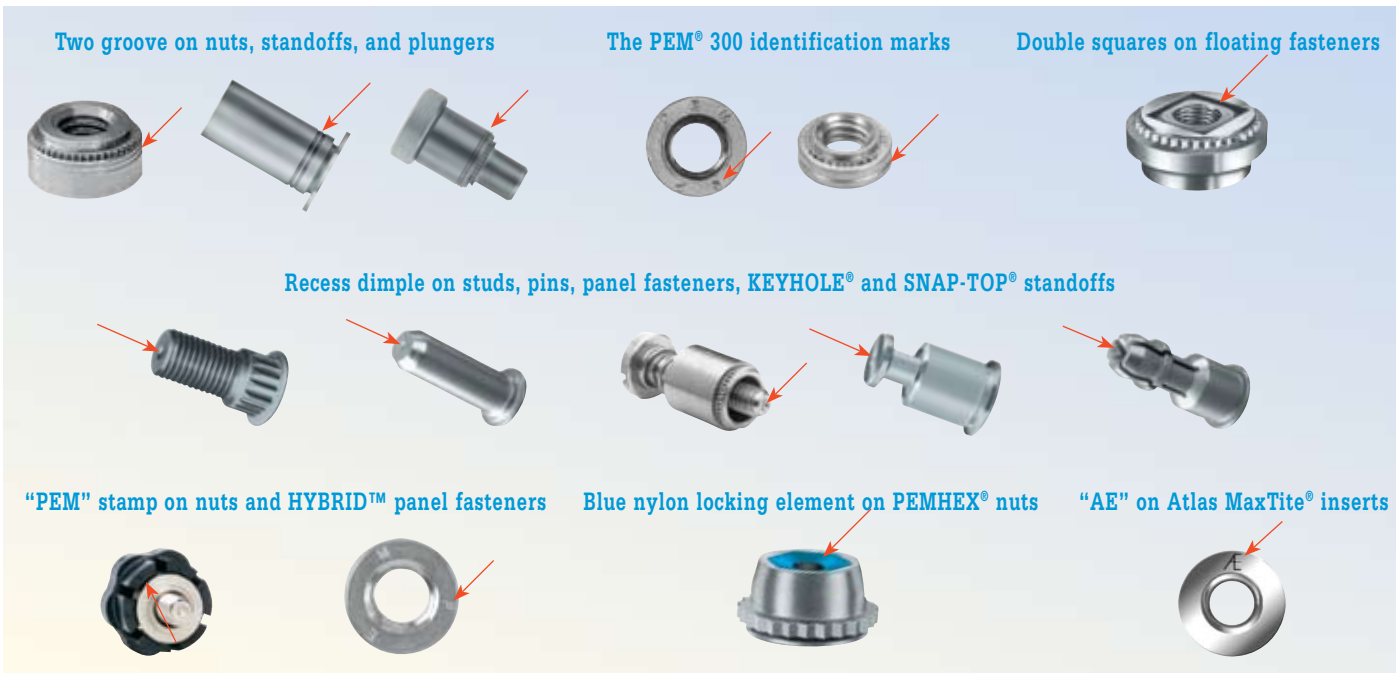
<b>SPOTFAST™ FASTENERS (Bulletin SF)</b>		
	TYPES	GENERAL INFORMATION
	SF™ SFP™	Allows permanent joining of two metal sections. The fastener installs smooth with the top sheet, and flush or sub-flush with the bottom sheet.

<b>SPINNING CLINCH BOLT (Bulletin SCB)</b>		
	TYPES	GENERAL INFORMATION
	SCB™ SCBJ™	Installs by simply pressing it into a properly sized hole. The controlled clinching action permanently captivates the screw in the panel yet still leaves it to spin freely in the sheet.

<b>KEYHOLE® SHEET JOINING FASTENERS (Bulletin SK-F)</b>		
	TYPES	GENERAL INFORMATION
	SKC-F™	Allows two sheets to be quickly joined flat against each other and then can be removed from the assembly by simply sliding the sheet sideways and lifting it off.

## Fastener Identification Marks

To help you identify genuine PEM® and ATLAS® brand fasteners, most are marked by one of our registered trademarks. Genuine PEM and ATLAS brand fasteners can only be purchased from one of our authorized worldwide distributors. For a complete listing of these distributors, check our web site: [www.pemnet.com](http://www.pemnet.com) or call one of the numbers below.



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To locate a representative or distributor near you, call one of the locations below or visit [www.pemnet.com](http://www.pemnet.com)

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Specifications subject to change without notice.  
Check our website for the most current version of this bulletin.

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