

PennEngineering®

**FASTENER INSTALLATION  
EQUIPMENT AND SYSTEMS**

BULLETIN

**PS**

**PEMSERTER®**



## FASTENER INSTALLATION EQUIPMENT AND SYSTEMS

Dedicated fastener-installation equipment, pioneered by PennEngineering, can deliver a competitive edge. No matter how demanding a job, our systems and expertise provide time-proven solutions.

We rolled out our first PEMSERTER® fastener-insertion press in 1967, which introduced fabricators and OEMs to an entirely new method for installing self-clinching fasteners. The benefits of installation speed, quality, and cost reduction quickly became apparent and remain true to this day.

As we have grown, our PEMSERTER brand has stood to identify a diverse product line ranging from simple hand tools to the most technologically advanced press systems available in the industry.

Our response over the years to evolving customer requirements has led to expanding equipment choices and enhanced engineering expertise.

Our equipment capabilities now incorporate “smart” tooling and software, automation, robotics integration, the in-die fastener installation system, and a whole new world of emerging fastener-installation technologies. Our sales and service options continue to keep pace.

At your service is an experienced tech force well-versed in hardware and systems. Every day we are prepared to handle the most challenging assembly problem or field a quick question. We invite your contact.



*Series LT/4® pneumatic press.*



*Series 2000® Press equipped with dual bowl expansion cart and the QX™ turret tool system.*

# PEMSERTER® SERIES 3000™ AUTOMATIC INSERTION PRESS

## FEATURING FULL SERVO ELECTROMECHANICAL ACTUATION TECHNOLOGY

The new PEMSERTER® Series 3000™ automatic feed fastener-installation press can install self-clinching fasteners up to 30% faster than traditional systems to deliver comparable productivity gains. This press provides **71.2 kN / 8 tons of force and a 61 cm / 24” throat depth** and has full servo electromechanical actuation technology to provide significant improvement in operating consistency, improved reliability, increased efficiencies and minimized maintenance. Total elimination of hydraulic fluids provides an environmentally friendly system.

The Series 3000 press introduces “clean” technology without hydraulics to install all types of self-clinching fasteners rapidly, accurately, and permanently. The electromechanical servo drive optimizes ram function to achieve ideal and repeatable speed and force for proper fastener installation.

Among features, PC-based programming interfaces with Windows operating platforms for job versatility and customization. Menu-driven touch-screen controls, descriptive screen alerts, and an on-screen multi-media instructional video contribute to user-friendly operation and quick learning. Data logging capabilities allow for performance monitoring. A patented LIGHTSTREAM® Operator Safety System provides a continuous safeguard by ensuring ram force is applied only to fasteners.

All auto feed tooling used on the Series 2000 press can be used on the Series 3000 press.

**WORLD'S FIRST  
SERVO DRIVE  
INSERTION PRESS**

**NEW!**



*For more information request specification sheet PS3000.*

## FEATURES AND BENEFITS

- **Intelligent Set-up System (ISS).** Automatically determines insertion force requirements.
- **“Optimized Motion Profiles”.** Eliminates need for “dwell time” and provides optimal fastener insertion.
- **PC Based Programming.** Push button, menu driven, touch screen control system.
- **Robot Ready.** Press ships standard with robot interface.
- **Remote Monitoring.** Monitoring and troubleshooting through ethernet compatibility.
- **Data Logging.** Internal data for force and distance is measured and stored within the machine. Data collected can be downloaded to Windows operating platforms for QC documentation.
- **Multiple Pictures of Single Workpiece.** Digital pictures of workpiece for clarification of insertion points.
- **Multi Language Capable.**
- **Technical Video.** Pre-loaded on-screen video instructions for machine set-up and tooling changeover.

## SERIES 2000® AUTOMATIC INSERTION PRESS

The PEMSERTER® Series 2000® press has established itself as the productivity leader in the world of fastener installation. This press has **71.2 kN / 8 tons of force and a 61 cm / 24" throat depth**. The high speed hydra-pneumatic actuating system delivers insertion speed that cannot be met by competitive systems and the optional auto-feed capabilities insure that the fasteners are positioned quickly and accurately.

The Series 2000 press utilizes a programmable logic controller and a menu-driven touch screen operator interface system, in eleven available languages. Touch screens allow for quick-run-set-up, easy operator training, and precise fastener installation setups. They automatically alert and direct the operator to any safety or system faults for quick diagnosis.

The Series 2000 press has a unique patented LIGHTSTREAM® Operator Safety System. It is a wireless, fail-safe system that immediately detect when the main ram contacts any object, metallic or non-metallic, that should not be in its path. The LIGHTSTREAM® system provides a fast, precise, and reliable safety system that ensures ram force is only applied to fasteners during installation.

For higher productivity and ease of operation, add up to two bowl expansion carts and the QX™ Turret Tool system to the PEMSERTER® Series 2000® press for a quick and efficient method to quickly change between anvil tools. With the use of the second and/or third bowl and the QX™ Turret Tool System, you can install up to four different fasteners; two or three in automatic feed mode, and the remainder in manual feed mode.

### FEATURES AND BENEFITS

- The job search and recall mode allows operators to reference 300 stored jobs and return to previous jobs quickly and easily.
- PLC readily accommodates custom programs.
- A cast aluminum bowl with epoxy coating handles larger parts and performs quietly.
- A wide feeder track increases fastener-feeding rates.
- A larger touch-screen and graphics contribute to operator-friendly operation.
- The press is Ethernet capable.
- Adjustable ram stroke distance control in manual and bottom feed nut mode.
- Real-time installation force feedback displayed on screen.
- Fastener and batch counters.
- Descriptive screen alerts for operating errors.
- Smart dwell and force verification.
- Self-diagnostic system lets operator work with increased speed, accuracy, and confidence.
- Color-coded tooling for quick changeover.



*For more information request specification sheets PS2000 and PS2000DB.*

## SERIES 4® AND SERIES LT/4® PNEUMATIC PRESSES

The PEMSERTER® Series 4® press is totally pneumatic providing short cycle time for increased productivity and **53.4 kN / 6 tons of force and a 45.7 cm / 18" throat depth** which provides clearance for a variety of chassis configurations. It is designed to install self-clinching fasteners in size M2 / #0 thru M10 / 3/8" in steel, and sizes up to M12 / 1/2" in aluminum panels or circuit boards.

The PEMSERTER® Series LT/4™ totally pneumatic press provides **26.7 kN / 3 tons of force and a 25.4 cm / 10" throat depth**. The LT/4 press is ideal for short production runs and is highly engineered with features promoting optimized performance, productivity, and safety.



Series LT/4® Press

*For more information request specification sheet PSLT4.*



Series 4® Press

*For more information request specification sheet PS4.*

### FEATURES AND BENEFITS

- Pneumatic power for speed, consistency, and simple operation. Requires shop air only.
- Integral point-of-operation safety.
- Adjustable positive ram stop.
- Large parts tray with dividers.
- Rapid tooling changeover, perfect for short production runs.
- One-year parts warranty and two-year limited warranty on pneumatic components.

### QX4™ MANUAL TURRET TOOL SYSTEM FOR SERIES 4® AND SERIES LT/4® PRESSES

The PEMSERTER® QX4™ Turret Tool System provides an efficient method to quickly change between four different anvil tools. The one-handed operation of this tool allows an operator to install four different types and/or sizes of fasteners with one set-up. The QX4 Turret Tool System can be easily installed on all new and existing PEMSERTER® Series 4® and Series LT/4® presses.

- Lower installed cost. Four different fasteners installed with one machine set-up.
- Increased productivity. Set-up time reduced. Turret is easily rotated by hand and positively locks in place.
- Reduced risk of missing a fastener or damaging work-piece. Each position is color-coded with matching color coded parts trays.



*For more information request specification sheet QX4.*

## SERIES P3® PORTABLE PNEUMATIC HAND TOOL

The PEMSERTER® Series P3 fastener installation press is a portable power hand tool weighing only 4.6 kg. / 10 lbs. that can develop a **squeezing force of 22.2 kN / 5,000 lbs.**

With the PEMSERTER 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 M4 thread sizes and studs (FH, FHS, and FHA up to 12mm in length) ranging from M2.5 thru M4 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 #8-32 thread sizes.

### FEATURES AND BENEFITS

- Pneumatic power for consistency and simple operation. Requires shop air only.
- Trigger controlled safety.
- Snap-in tooling changeover.
- Press includes metric or unified tooling.
- Can be bench-mounted. Back side of yoke has two predrilled and tapped holes for bench mounting. Mounting bracket hardware included.
- One-year parts warranty.



*For more information request specification sheet P3PS\_MM.*

## MICRO-MATE® HAND TOOL

The PEMSERTER® MICRO-MATE® press is a versatile hand tool weighing only 1.25 kg / 2 3/4 lbs. that can develop a **squeezing force of 1,134 kg / 2,500 lbs.**

The press 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 M2 to M5, while the unified kit installs nut sizes #2-56 to #10-32.

### FEATURES AND BENEFITS

- Equipped with punches and dies to punch fastener mounting holes in metal sheets.
- Changes to a flat punch and recessed anvil to easily install metric or unified self-clinching nuts.
- Ideal for prototype shops or short production runs.
- One-year parts warranty.



*For more information request specification sheet P3PS\_MM.*

# IN-DIE FASTENER INSTALLATION SYSTEM

The PEMSERTER® in-die fastener installation system brings new dimensions to stamping capabilities. It incorporates the latest technologies to deliver the performance that is needed to compete in the highly competitive stamping industry. It eliminates the secondary operations typically required for fastener insertion, thus reducing overall labor costs, improving part quality and dramatically improving product through put.

As designed, the system interfaces with the die and the press with surprising ease. Through the use of a multi pin twist lock connector it is virtually plug and play. All that is needed to operate the system is a standard 110V receptacle and shop air.

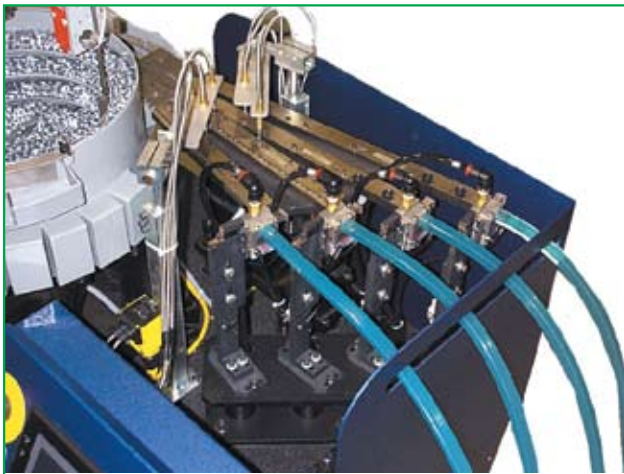
Other advantages are that the standard tooling is in press removable and can handle complex work pieces reaching into areas generally considered inaccessible. Additionally, if required special tooling can be engineered to fit your specific application.

The complete in-die fastener installation system consists of the die tooling, fastener-feeding system module, the die-sensing module, and the support needed to make every project a success.



## FEATURES AND BENEFITS

- Can be easily moved from press to press.
- In press removable tooling can be easily removed for maintenance.
- Easy interface with existing press controls.
- Touch screen operator interface.
- Self-diagnostics with extensive library of help screens.



*System can be configured for single or multiple insertions.*



*In-die tooling.*

## CUSTOM APPLICATIONS

Custom designs such as the punch assembly shown below can be offered to meet the needs of a specific customer application. Please call us for more information about your requirements. We will be happy to assist you to design the proper tool for your assembly.



**For more information request Bulletin PSPD.**

*For your local PEMSERTER® Dealer, or more information on our installation equipment, call us at 800-523-5321 (USA only) or 215-766-8853 or visit us at [www.pemnet.com](http://www.pemnet.com)*

# PEMSERTER®



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

**PennEngineering®**



**North America:** Danboro, PA 18916 USA • E-mail: [pemsertter@pemnet.com](mailto:pemsertter@pemnet.com) • Tel: +1-215-766-8853 • Fax: +1-215-766-3634 • 800-523-5321 (USA Only)

**U.K. And Europe:** Doncaster, England • E-mail: [uk@pemnet.com](mailto:uk@pemnet.com) Tel: +44 (0)1302 765700 • Fax: +44 (0)1302 367580

**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

**Visit our PEMNET™ Resource Center at [www.pemnet.com](http://www.pemnet.com)**

CAGE-46384