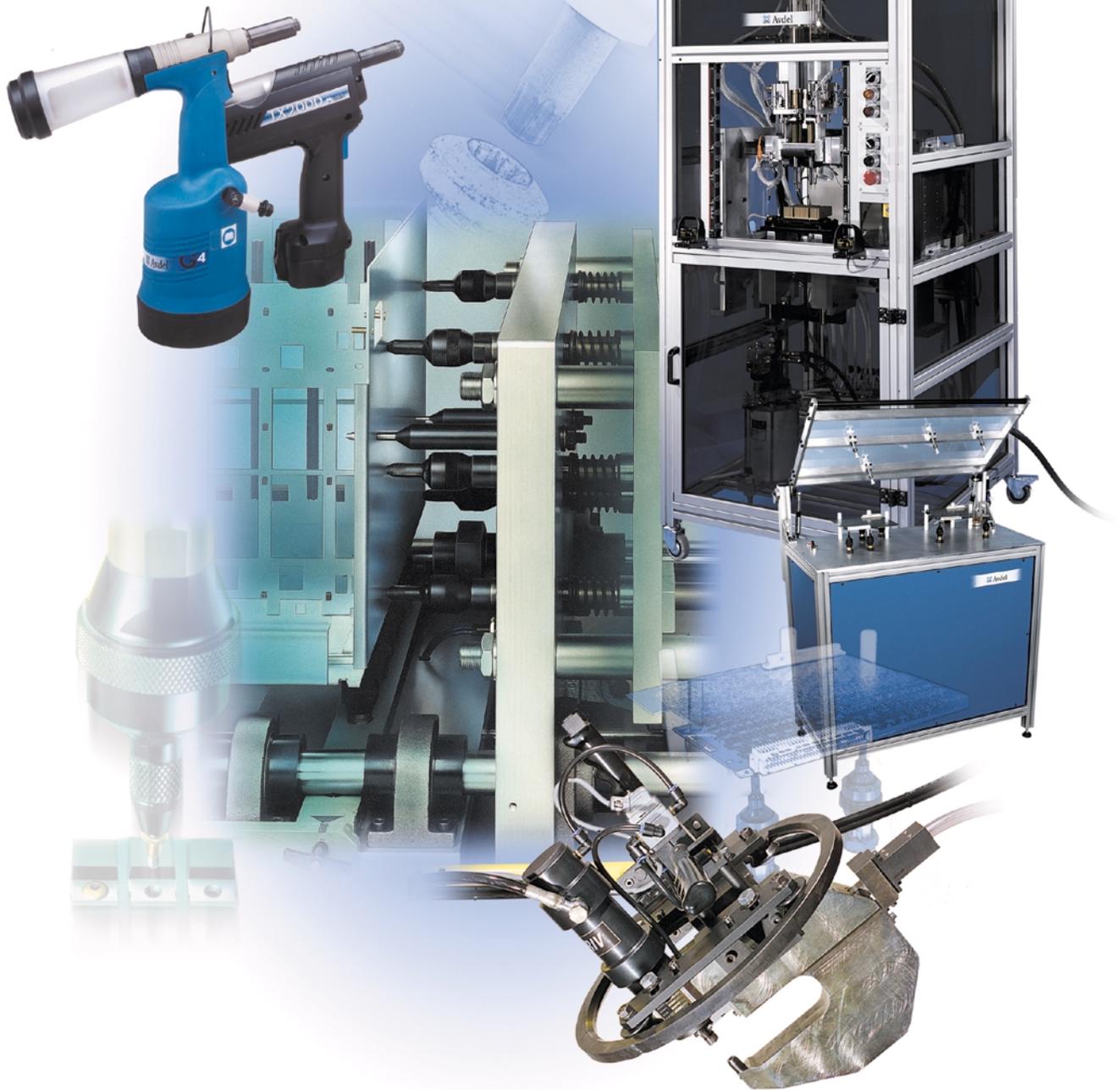


**TEXTRON** Fastening Systems

# INSTALLATION SYSTEMS FOR FASTENERS





## **Installation Tools for Avdel® Speed Fasteners . . . . .3**

Unlike traditional rivets, Avdel® speed fasteners feature a separate mandrel/nail and rivet. This configuration speeds the installation process through increased loading capabilities and by minimizing nail/mandrel extraction.



## **Installation Tools For Breakstem Fasteners . . . . .5**

From manual tools to multi-headed equipment, this wide range of tools is designed to ease installation of breakstem and structural breakstem fasteners. Stem collectors, ergonomic designs, and flexible configurations help reduce installation costs and increase productivity.



## **Installation Tools for Lockbolts . . . . .7**

Hand-held systems for quick, consistent placement of 2-piece structural lockbolts, and also large diameter (3/8" and larger) structural breakstem fasteners.



## **Installation Tools for Pierce Riveting . . . . .8**

Fastriv® pierce rivets eliminate drilling operations and are also an excellent replacement for spot welds. A variety of hand-held or fully-robotic equipment is available for placing these unique rivets.



## **Installation Tools for Threaded Inserts . . . . .9**

Hand-held and automated systems provide consistent placement of a wide variety of threaded inserts.



## **Installation Tools for Threaded Fasteners . . . . .9**

This new line from Textron Fastening Systems can be configured to install screws sized #1 to 3/8" in any head or drive style.



## **Automation Capabilities . . . . .10**

Textron Fastening Systems can configure the optimal equipment for your specific needs.

# TOOLS FOR INSTALLING AVDEL® SPEED FASTENERS



The 753 MkII line of lightweight, versatile tools allows rapid, cost-effective assembly even in low volume batch runs. Many standard configurations are available to ease alignment of tool and workpiece and maximize worker comfort, in order to reduce operator fatigue and increase efficiency. Each of these styles can be customized to meet your specific assembly needs.

## 753 MkII Handtool



### FEATURES

- Air over oil actuation
- Available with in-line handle and top or bottom hose configuration

### BENEFITS

- Fast and smooth operation
- Reduces operator fatigue
- Reduces overall installation cost

## 753 MkII Inverted Workstation



### FEATURES

- 90° head swivel for easy reload of rivets
- Economical solution to top-down fixed position riveting requirements
- Foot pedal activation

### BENEFITS

- Hands-free actuation
- Increases production
- Reduces operator fatigue

## 753 MkII Balance Arm Workstation



### FEATURES

- Tool supported on an extendable arm
- Wide arm reach to over 30 in. (0.8m)
- Single hand operation
- Long-life intensifier can be bench or floor mounted

### BENEFITS

- Allows accurate and precise fastening
- Eases movement of tool and workpiece, thereby decreasing operator fatigue

## 753 MkII Adjustable Workstation



### FEATURES:

- Linear control
- Only requires compressed air for operation

### BENEFITS:

- Meets top-down riveting requirements
- Permits easy alignment of workpiece
- Reduces operator fatigue

## 753 MkII Bench Mounted Workstation



### FEATURES

- Ergonomic design
- Jig points can be added easily
- Easy to integrate into existing assembly workstations
- Only requires compressed air for operation
- Foot pedal activation

### BENEFITS

- Meets bottom-up riveting requirements
- Reduces operator fatigue

## 753 MkII Suspended Handtool Workstation



### FEATURES

- Allows for the placement of rivets at any angle to the application
- Ergonomic design
- Only requires compressed air for operation
- Tool mounted on zero gravity balancer. Extensions for the tool and a stand are optional.

### BENEFITS

- Easy to integrate into existing assembly workstations
- Maximizes assembly flexibility
- Reduces operator fatigue

# TOOLS FOR INSTALLING AVDEL® SPEED FASTENERS

## 78900 Autoload Installation System



### FEATURES

- All major components are modular for ease of servicing
- Automatic unload and reload of the mandrel to the tool
- Available with single or dual nest station
- Bowl-fed pick and place system to automatically load rivets onto mandrels

### BENEFITS

- Capable of handling flow line applications
- Quick disconnects allow for quick service change-out
- Allows continuous placement
- Reload time eliminated

## MA30124 Bench Mounted Speed Fastening Workstation



### FEATURES:

- Flip up eye guard for safety and easy reloading
- Foot pedal activation frees operator's hands to align workpiece

### BENEFITS:

- Meets bottom-up riveting requirements
- Capable of placing up to 1,500 fasteners per hour

## MA30286 Two-Head Adjustable Center Speed Fastening Workstation



### FEATURES

- Adjustable placement heads place fasteners simultaneously
- Foot pedal activation frees operator's hands to align workpiece
- Variable hole centers from 1.8" to 12" (46mm to 304mm)
- Two adjustable leveling legs

### BENEFITS

- Capable of placing up to 3,000 speed fasteners per hour

## Avdel® Mini-MBS Twin Head Assembly Station



### FEATURES:

- Body and casters are ESD-construction (Electro-Static Discharge) to meet electro-static protection requirements
- Center pitch distance between riveting modules adjustable from 1.14" – 4.72" (29mm – 120mm)
- Compact design with lockable casters
- Foot pedal activated
- Hydraulic riveting modules
- Optional pressure control component available

### BENEFITS:

- Provides smooth, shock-free placement of fasteners
- Easy integration into assembly line

## Rivmatic™ Free-Standing Workstations

The Rivmatic family of workstations are stand-alone repetition riveters designed to optimize installation of Avdel speed fasteners.



### FEATURES

- Hydraulic or pneumatic cylinder provides continuous feed of fasteners to placing head
- Foot pedal activation frees operator's hands to align workpiece
- Laser diode assists component alignment
- Cycle time of approximately 2 sec.

### BENEFITS

- Meets bottom-up riveting requirements
- Eases component placement to optimize assembly

# TOOLS FOR INSTALLING BREAKSTEM FASTENERS

## G28 Right Angle Plier



### FEATURES

- Lightweight
- Versatile; supplied with two nosepieces

### BENEFITS

- Ideal for field use
- No power supply needed

## GH4024 Long Arm Plier



### FEATURES

- Medium-duty tool capable of installing breakstem fasteners and Monobolt® fasteners (with additional nosepiece)
- Weight: 2.5 lbs. (1.13 kg)

### BENEFITS

- Ideal for field use
- No power supply needed

## GHA-743 Heavy-Duty Riveter



### FEATURES

- Heavy-duty construction
- Hydra-pneumatic operation
- Mandrel collection bag available
- Pull Force: 3,600 lbs. (16 kN)
- Stroke: .750" (19mm)
- Weight: 6.25 lbs. (2.84 kg)

### BENEFITS

- Ideal for tough work environments
- Reduces clean-up when using collection bag

## GH780 Pneumatic Handtool



### FEATURES

- Unique tool designed to provide long stroke length: 1.125" (28.5mm)
- Lightweight: 3 lbs. (1.36 kg)
- Pull Force: 1000 lbf. (4.4 kN)

### BENEFITS:

- Provides consistent pull force
- Reduces operator fatigue

## G752A Hydraulic Manual Handtool



### FEATURES:

- Versatile with added adapters
- Push button return on hydraulics
- Pull force min.: 3,800 lbf (17 kN)
- Stroke: .750" (19mm)
- Weight: 1.9 lbs. (0.86kg)

### BENEFITS

- Provides consistent lever force throughout fastener installation
- Ideal for field use

## TX2000™ Battery-Operated Tool



### FEATURES

- Balanced ergonomic design
- Battery powered
- Pull Force: 1,000 lbf. (4.4 kN)
- Stroke: 1.125" (28.5mm)
- Weight: 3 lbs. (1.36 kg)

### BENEFITS

- Ideal for field use
- Reduces operator fatigue

## GH702A Lightweight Handtool



### FEATURES

- Hydra-pneumatic operation
- Designed to place 3/16" aluminum rivets
- Stroke: .750" (19mm)
- Weight: 3.5 lbs. (1.60 kg)

### BENEFITS

- Provides consistent power for installation
- Reduces clean-up when using mandrel collection bag

## GH703 Medium-Weight Handtool



### FEATURES

- Hydra-pneumatic operation
- Designed to place 3/16" breakstem rivets of any material; also places 1/4" aluminum rivets

### BENEFITS

- Provides consistent power for installation
- Reduces clean-up when using mandrel collection bag

# TOOLS FOR INSTALLING BREAKSTEM FASTENERS



The Genesis® line of durable, hydro-pneumatic-powered handtools are designed for ergonomic, high-speed installation of breakstem fasteners.

With a single action trigger and average cycle times of one second, assembly time is reduced to a minimum. Each tool features a built-in stem collector to prevent contamination of the workplace.

Genesis tools are lightweight, portable and easy to handle, maximizing operator comfort. These tools can also be suspended or mounted in workstations for further assembly benefits.

## Genesis® G1 Handtool



### FEATURES:

- Pull Force: 940 lbf. (4.2 kN)
- Stroke: .560" (14mm)
- Weight: 2.5 lbs. (1.13 kg)
- Places breakstem fasteners sizes 1/8" – 5/32" (3.0mm – 4.0mm)

### BENEFITS

- Provides high-speed installation
- Reduces installation costs
- Reduces operator fatigue

## Genesis® G2 Handtool



### FEATURES

- Pull force: 1,618 lbf. (7.2 kN)
- Stroke: .670" (17mm)
- Weight: 3.2 lbs. (1.45 kg)
- Places breakstem fasteners sizes 1/8" – 3/16" (3.0mm – 4.8mm)

### BENEFITS

- Provides high-speed installation
- Reduces installation costs
- Reduces operator fatigue

## Genesis® G2s – Remote Intensifier Handtool



### FEATURES

- Placing head weight: 1.9 lbs. (.88 kg)
- Pull Force: 1,650 lbf. (7.2 kN)
- Stroke: .70" (17mm)
- Places breakstem fasteners sizes 1/8" – 3/16" (3.0mm – 4.8mm)

### BENEFITS

- Provides high-speed installation
- Reduces installation costs
- Reduces operator fatigue

## Genesis® G3 Handtool



### FEATURES

- Pull Force: 2,518 lbf. (11.2 kN)
- Stroke: .984" (25mm)
- Weight: 3.6 lbs. (1.63 kg)
- Places breakstem fasteners sizes 1/8" – 1/4" (3.0mm – 6.4mm)
- Can be adapted to seat Avtainer® two-piece fasteners

### BENEFITS

- Provides high-speed installation
- Reduces installation costs
- Reduces operator fatigue

## Genesis® G4 Handtool



### FEATURES

- Pull Force: 4,200 lbf. (18.68 kN)
- Stroke: .670" (17mm)
- Weight: 3.6 lbs. (1.63 kg)
- Places breakstem fasteners 3/16" (4.8mm) and larger, including structural breakstem fasteners
- Can be easily adapted to install Avtainer® two-piece fasteners and Maxlok® lockbolts

### BENEFITS

- Provides high-speed installation
- Reduces installation costs
- Reduces operator fatigue

Genesis tools can be configured into workstations to further benefit your assembly process.



- Place multiple fasteners at one time
- Foot actuation leaves operator's hands free to align workpiece
- Can utilize two different Genesis tool models to place the entire range of Avdel breakstem rivets

# TOOLS FOR INSTALLING BREAKSTEM FASTENERS

## Avimat™ 2000 Automated Breakstem Rivet Placement System



### FEATURES

- Modular design: placing head assembly, blow feed unit, and PLC control package assembly
- Flexible electrical, pneumatic and hydraulic connections allow quick module interfacing
- Placing head functions within 0 to 360 degrees
- Process/fault diagnostics throughout machine cycle
- Robotic- or static-design compatible
- Useable stroke: 2.6" (65mm)
- Seats breakstem fasteners 3/32" – 1/4" (2.4mm – 6.4mm)

### BENEFITS

- Can be used in a wide range of applications
- Easy integration into assembly line
- Quick and consistent placement of breakstem rivets offer increased through-put while maintaining quality standards



blow feed unit  
with bowl feeder

# TOOLS FOR INSTALLING LOCKBOLTS

## Hydraulic Lockbolt Handtools

Designed for use in demanding engineering environments, these robust, durable tools provide consistently accurate and secure installation of a wide range of lockbolt brands. Each features quick change nose assemblies – no special tooling required – and quick disconnect hydraulic cables and contacts. The separate hydraulic power unit\* is mounted on casters for maneuverability.



### T10 Lockbolt Handtool

- Seats fasteners sizes 3/16" to 3/8" (5mm to 10mm)
- Weight: 7.7 lbs (3.5 kg)

### T30 Lockbolt Handtool

- Seats fasteners sizes 1/2" to 3/4" (13mm to 19mm)
- Weight: 17.6 lbs (8.0 kg)

### T51 Lockbolt Handtool

- Seats fasteners sizes 7/8" to 1" (22mm to 25mm)
- Weight: 39.7 lbs (18 kg)



separate hydraulic  
power unit

\* A diesel-powered hydraulic power unit is available for applications in isolated locations.

## 722 Lockbolt Handtool



### FEATURES

- Heavy-duty placing tool
- Hydra-pneumatic powered
- Installs 3/16" to 3/8" (4.8mm to 9.6mm) lockbolts
- Weight: 11 lbs. (5.0kg) without nosepiece
- Pull Force: 6,000 lbf. (10.91 kN)
- Stroke: .750" (19mm)
- Wide selection of nosepieces available

### BENEFITS

- Durable
- 3 sec. cycle time

## ESN50 Pierce Riveting Battery-Powered Tool



### FEATURES

- Electric-hydraulic press
- Battery-powered
- C-frames with different throat depths available
- C-frame has 360° rotation
- Joining cycle: 3.0 sec.
- Joining force: up to 11,240 lbf (50 kN)
- Stroke: 1.38" (35mm)
- Tape feed option
- Weight: 10.35 lbs. (4.7 kg.); dependent on C-frame
- Can be equipped with different tooling for clinching or pressing operations or for placing clinch nuts and studs
- With special tooling, can also be used to remove self-piercing rivets

### BENEFITS

- Wide range of uses, from sampling, prototyping and repair use to small batch production

## SN2 Pierce Riveting Hydraulic Tool



### FEATURES

- Hand-operated or stationary C-frame
- Various C-frames available, connected by a quick-fitting coupling
- Remote intensifier with hydraulic drive
- Joining cycle: 2 sec.
- Joining force: up to 13,489 lbf (60 kN)
- Stroke: 0.78" (20mm)
- Tape feed option
- Hand-operated c-frame weight: 7.7lbs (3.5 kg)
- Can be equipped with different tooling for clinching or pressing operations or for placing clinch nuts and studs

### BENEFITS

- Can be used in a large range of applications, from sampling to series production

## Pedestal Mount Pierce Riveting System



### FEATURES

- Hopper feed system with large capacity
- Cycle times as low as 0.5 sec.
- Safety features include a pneumatic trip facility, power control, and a pneumatic free fall probe guard
- CE compliant
- Clean processing is guaranteed by the pneumatic-mechanical driving system
- Length of stroke: 2.99" (76mm)
- Joining force: up to 7,000 lbf (31.81 kN)

### BENEFITS

- Continuous production and increased productivity
- Convenient, safe operation

## Portariv™ Pierce Riveting System

Portariv equipment is designed to place the entire range of Fastriv® pierce rivets. It can be configured to meet specific requirements. Each Portariv system consists of three modules: power pack and control system, c-frame head assembly, and blow-feed fastener system. This permits easy integration into existing production lines.



### FEATURES

- Available in hand-operated or robot-mounted systems; multi-headed and other custom systems available
- Cycle times of 2.0 – 3.5 sec., dependant on hose length
- Joining force: up to 10,000 lbf (45.45 kN)
- Vibratory bowl feed systems and proprietary pneumatic components ensure reliable feeding
- Process monitoring can be incorporated into system

### BENEFITS

- Allows flexible integration into existing production lines
- Increases productivity
- Ensures consistent, quality joints

# TOOLS FOR INSTALLING THREADED INSERTS

## 7410 In-line Grip Handtool



### FEATURES

- In-line installation
- Internal torque-sensing clutch
- Rugged yet lightweight
- Utilizes spin-spin technology
- Cycle time: approximately 3 sec.

### BENEFITS

- Ergonomic
- Meets high production needs
- Provides consistent placement of threaded inserts, except stainless steel

## 7411 Pistol-Grip Handtool



### FEATURES

- Pistol-grip
- Internal torque-sensing clutch
- Rugged yet lightweight
- Utilizes spin-spin technology
- Cycle time: approximately 3 sec.

### BENEFITS

- Ergonomic
- Meets high production needs
- Provides consistent placement of threaded inserts, except stainless steel

## 742 Handtool



### FEATURES

- Spin-on, pull-up, spin-off action
- Lightweight and ergonomically designed
- One-step trigger
- Pull force: 4,380 lbf at 75 psi (19.5 kN at 5 bar)
- Stroke: .276 (7mm)
- Weight: 4.85 lbs (2.2 kg)

### BENEFITS

- Minimizes installation costs
- Reduces operator fatigue

## Autosert™ Threaded Insert Assembly System



### FEATURES

- Modular design: placing head, blow feed unit, and PLC control cabinet
- Flexible, plug-type electric, pneumatic and hydraulic connectors
- Can be integrated with robotic controls
- Continuous feed bowl capacity up to 2000 inserts
- Cycle time 3 seconds

### BENEFITS

- Reduces installation costs
- Versatile

# INSTALLATION TOOLS FOR THREADED FASTENERS

## Camcar® Automatic Screwfeed System



### FEATURES

- Durable industrial construction
- Installs screws sized #1 to 3/8" (M2 – M10), any head, thread or drive style
- Pneumatic or electric screwdrivers with adjustable torque and automatic shut-off
- Patented feed mechanism
- Inline, pistol grip or T-handle drivers
- Torque range 3 – 200 in.-lbs. (.34 – 22.60 Nm)
- Wide variety of accessories available
- Requires only minimal maintenance
- Full automation available

### BENEFITS

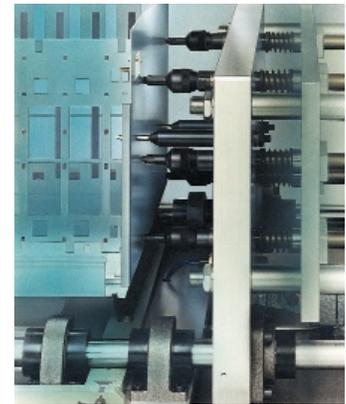
- Efficient, reliable operation
- Ideal for blind hole applications and vertical applications

# AUTOMATION CAPABILITIES

Drawing on its well-established products and application experience, Textron Fastening Systems can configure the optimal tooling system for your assembly line. From simple, two-headed modules to multi-headed equipment, these systems can dramatically reduce assembly time and costs.

- Rapid, blind-sided assembly
- Synchronous fastener placement
- Unlimited assembly configurations
- Fastening at any angle
- Precision fastening
- Continuous assembly
- Fully-automated assembly

Following are some examples of systems created to meet the requirements of specific assembly needs.



**Application:** Computer chassis

**Need:** Flexible system to provide high speed assembly of sheet metal assemblies

**Textron Fastening Systems SOLUTION:** 34-Head Assembly System and Briv® Speed Fasteners



## FEATURES

- Flexible part recognition – able to assemble 5 different chassis styles on one system
- Rivet sensors and part sensors
- Opti-touch sensors for ergonomic actuation
- Soft-set feature levels operation while ensuring rivet presence
- Automatic indexing of rivets

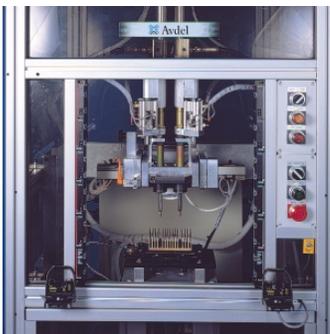
## BENEFITS

- Eliminated welding and grinding operations
- Increased through-put by 68%
- Decreased in-place costs
- Maintained high quality

**Application:** Attachment of heat sinks to processor

**Need:** Quick seating of 4 fasteners while maintaining quality

**Textron Fastening Systems SOLUTION:** 4-Head Speed Fastening System



## FEATURES:

- Seats RivscREW® threaded rivets
- Specially-designed nose tip
- Full process monitoring, including rivet and part presence
- Light curtain safety feature
- Mistake-proof nesting
- Opti-touch actuation method

## BENEFITS:

- Zero defect through-put
- Maximizes operator comfort



# AUTOMATION CAPABILITIES

**Application:** Automotive subassembly

**Need:** Speed assembly while ensuring quality

**Textron Fastening Systems SOLUTION:**

15-Head Breakstem Fastening System



## FEATURES:

- Easy loading/unloading of subassembly
- Full process monitors including part presence sensors
- Spent nail extraction to external collection box
- Capable of riveting two separate applications at one time

## BENEFITS:

- Increased productivity
- Reduced operator fatigue

**Application:** Office furniture

**Need:** Flexible system to assemble five different applications

**Textron Fastening Systems SOLUTION:**

Multi-head Threaded Insert System



## FEATURES

- Adjustable head center distance
- Component positional sensors
- Individual shut-off toggles to drilling and insert heads
- Light curtain for operator safety
- Mistake-proof jiggling
- PLC-controlled
- Complete process sensing

## BENEFITS

- Capable of installing inserts into 6 different configurations
- Ensures quality through-put

**Application:** Truck cab back panels

**Need:** Create complex joining patterns through XY or rotary motion

**Textron Fastening Systems SOLUTION:** C-2001 Pierce Riveting System



## FEATURES

- Large 8' x 10' work area
- No drilled or punched holes required
- Programmable
- Servo-driven XY working area

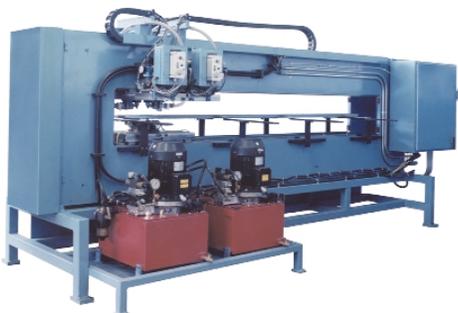
## BENEFITS

- Automated assembly
- Increases productivity
- Uniform assembly
- System can be sized to other application requirements, including adding placing heads

**Application:** Truck cab wall panels

**Need:** Eliminate drilling and manual installation of rivets

**Textron Fastening Systems SOLUTION:** H-Frame Pierce Riveting System



## FEATURES

- No drilled or punched holes required
- Programmable
- Able to place multiple fasteners at one time

## BENEFITS

- Automated assembly
- Increases productivity
- Uniform assembly
- System can be sized to other application requirements

