Fastening Systems
Product Overview
Speed Fastening® Systems

Benefits of assembly

POP Avdel Speed Fastening systems provide rapid and reliable assembly of metals, plastics, composites and passive electronic components. The fasteners are either magazine-fed or fed via a vibrating bowl to a wide choice of installation equipment. At the end of each assembly cycle, the next fastener is automatically delivered to the nose of the tool ready to repeat the assembly process. Speed Fastening offers many benefits over conventional mechanical assembly systems, including:

- High speed, blind sided assembly
- Consistent clamp and grip
- Good vibration resistance

- Highly controlled assembly
- Short cycle times
- Elimination of over-torquing

Typical placing sequence

1. The mandrel with pre-loaded fastener is located in the hole.

2. Tool activation pulls the mandrel through the fastener, expanding it within the hole to provide high clamp and secure joints.

3. At the end of the installation cycle, the next fastener is automatically delivered to the nose of the tool, ready to repeat the assembly process.

Please visit our website StanleyEngineeredFastening.com for fastener placing animations.

Assembly applications

- Aluminium die-cast boxes
- Car bumpers and doors
- DIN connectors and heatsinks to PCB’s
- Domestic appliances
- Electrical engineering
- Lighting equipment
- PCB’s to chassis assemblies
- Switchgear
- Telecommunications equipment

Window hinge

Gas firing

Computer chassis

Vacuum pump for diesel engines

Automotive die-cast chassis with PCB

Composite material latch for wheel cover
# Range Overview

<table>
<thead>
<tr>
<th>Product</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>NeoSpeed®</td>
<td>Wide grip range, High joint clamp, Hole filling, Very high strength</td>
</tr>
<tr>
<td>Briv®</td>
<td>Bulbed tail form, Large headform, High joint clamp, Good joint gap closure</td>
</tr>
<tr>
<td>Grovit®</td>
<td>Designed for blind hole applications, Annular grooves on body</td>
</tr>
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<td>Designed for blind hole applications, Annular grooves on body</td>
</tr>
<tr>
<td>Avtronic®</td>
<td>Attaches DIN 41612 connectors and other components to PCBs, Annular grooves on body</td>
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<td>Avtronic®</td>
<td>Attaches DIN 41612 connectors and other components to PCBs, Annular grooves on body</td>
</tr>
<tr>
<td>Rivscrew®</td>
<td>Threaded fastener, Removable with hex key and reusable, Fastens into materials up to Vickers hardness 105 Hv5</td>
</tr>
<tr>
<td>Avsert®</td>
<td>Threaded stand-off pillars for PCBs, Internally threaded bore, Many stand-off heights</td>
</tr>
<tr>
<td>Chobert®</td>
<td>Internal tapered bore, Controlled clamp, High shear, Ideal for soft and brittle materials</td>
</tr>
<tr>
<td>Avlug®</td>
<td>Solderable terminal posts for PCBs, Rolled/knurled shank</td>
</tr>
<tr>
<td>Double Flush Chobert®</td>
<td>Flush surface on both sides of the joint, Reduces excess space requirements within the chassis</td>
</tr>
</tbody>
</table>

# Installation Equipment

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7537</td>
<td>23 placing heads to assemble a computer chassis</td>
</tr>
<tr>
<td>753</td>
<td>70510 Underbench workstation</td>
</tr>
<tr>
<td>7535 Pantograph workstation</td>
<td>Twin head fixed pitch workstation</td>
</tr>
<tr>
<td>Mini-MAS</td>
<td>Customised systems</td>
</tr>
</tbody>
</table>
Breakstem Riveting Systems

Benefits of assembly

POP Avdel breakstem fasteners and installation tools are a premier fastening system offering multi-grip performance, consistent and reliable installation and high speed, high performance assembly. Used in all manufacturing industries throughout the world, there is an POP Avdel breakstem fastener and installation tool to suit virtually every assembly requirement. Key user benefits include:

- Blind sided assembly
- Multi-grip performance
- Complete hole fill
- High speed assembly
- Good clamp and vibration resistance
- Consistent high performance
- Positive stem retention
- Extensive product choice

Typical placing sequence

1. The fastener is located on the tool nose piece and inserted into the prepared hole in the workpiece.
2. On activating the tool, the fastener pulls the materials together and expands to fill the hole.
3. At a pre-determined load, the fastener stem breaks flush with the fastener head, leaving a locked stem.

Please visit our website StanleyEngineeredFastening.com for fastener placing animations.

Assembly applications

- Automotive components
- Boats and caravans
- Building and construction
- Cabinets and enclosures
- Commercial vehicles
- Domestic appliances
- Electrical components
- Garage doors
- Heating and ventilation
- Railway rolling stock
- Reefer cool containers
- Storage and warehousing

- Domestic heating systems
- Passenger air bag
- Sliding luggage cover
- Garage doors
- Wood application
- Telecommunications cabinets
Range Overview

<table>
<thead>
<tr>
<th>Rivet Type</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open End Rivets</td>
<td>Cost effective standard rivet installed quickly and easily. Design of the stem head ensures positive retention after installation.</td>
</tr>
<tr>
<td>Soft Set</td>
<td>Designed for soft or brittle materials. Incorporates a special aluminum alloy. Low clamping force.</td>
</tr>
<tr>
<td>Micro Rivet</td>
<td>Smallest blind rivet available accommodates very small holes. Very low secondary side clearance. Soft set body will not damage work piece. Ideal for thin metal and PCBs.</td>
</tr>
<tr>
<td>Pull-Thru (PT)</td>
<td>Flush set on both sides of the application. Insertion can be reversed improving rivet tool access. No loose stem heads remain in the application. Tight radial set provides increased structural rigidity.</td>
</tr>
<tr>
<td>Closed End Rivets</td>
<td>Seals out moisture, air and other contaminants. Higher tensile and shear strength than the equivalent open end rivet. 100% stem retention.</td>
</tr>
<tr>
<td>Avex®</td>
<td>Multi-grip capability. Good hole fill. Retained stem. Large blind side bearing area.</td>
</tr>
<tr>
<td>Stavex®</td>
<td>Multi-grip capability. Good hole fill. Retained stem. Large blind side bearing area.</td>
</tr>
<tr>
<td>Avibulb® / Avinox®</td>
<td>High shear and tensile strength. Retained stem. Large blind side bearing area. Stainless steel Avinox for high corrosion resistance.</td>
</tr>
<tr>
<td>T-Lok®</td>
<td>‘Peel-type’ tail formation for joining wood to metal. Wide grip range. Retained stem.</td>
</tr>
<tr>
<td>Avdelmate®</td>
<td>Two piece fastener. Extra wide grip range. Large bearing area against both sides of the application. Excellent hole fill.</td>
</tr>
<tr>
<td>Earth Tab Rivet</td>
<td>Cost effective earthing point. Paint piercing capability. Twin tabs allow one or two connections.</td>
</tr>
<tr>
<td>Avex® Splined</td>
<td>Steel splines for electrical continuity in earthing applications. Multi-grip capability.</td>
</tr>
<tr>
<td>Avex® Splined</td>
<td>Steel splines for electrical continuity in earthing applications. Multi-grip capability.</td>
</tr>
</tbody>
</table>

Installation Equipment

- PB2500 battery tool
- ProSet® XT1 - coming soon
- ProSet® XT2 - coming soon
- Genesis® nG2-S
Benefits of assembly

POP Avdel structural breakstem systems are designed for rapid, blind sided assembly in load-bearing structural applications, where high shear and tensile strength is required. Key user benefits include:

- Blind sided assembly
- High shear and tensile strength
- Multi-grip performance
- Complete hole fill
- High speed assembly
- Good clamp and vibration resistance
- Consistent high performance
- Positive stem retention
- Extensive product choice

Typical placing sequence

1. The fastener is located on the tool nose piece and inserted into the prepared hole in the workpiece.
2. On activating the tool, the fastener pulls the materials together and expands to fill the hole.
3. At a pre-determined load, the fastener stem breaks flush with the fastener head, leaving a locked stem.

Please visit our website StanleyEngineeredFastening.com for fastener placing animations.

Assembly applications

- Agricultural equipment
- Automotive assemblies and components
- Boats and caravans
- Building and construction
- Cabinets and enclosures
- Commercial vehicle bodies
- Domestic appliances
- Heating and ventilation
- Pallets and racking
- Roofing and cladding
- Railway rolling stock
- Reefer cool and dry freight containers

Product cooler  |  Column tail lifts  |  Car seat base
---|---|---
Step ladder  |  Vehicle panel  |  Heat exchanger
## Range Overview

<table>
<thead>
<tr>
<th>Fastener</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avibulb® XT &amp; Avinox® XT</strong></td>
<td>- Multi-grip capacity &lt;br&gt;- High residual clamp load &lt;br&gt;- Good blind side footprint and bulb formation &lt;br&gt;- Avibulb® XT = steel &lt;br&gt;- Avinox® XT = stainless steel</td>
</tr>
<tr>
<td><strong>Hemlok®</strong></td>
<td>- Very high shear &amp; tensile strength &lt;br&gt;- Large blind side bearing area &lt;br&gt;- Interference lock via splined stem</td>
</tr>
<tr>
<td><strong>Monobolt®</strong></td>
<td>- Multi-grip capability &lt;br&gt;- Fully sealed fastener &lt;br&gt;- Visible lock &lt;br&gt;- Excellent hole fill &lt;br&gt;- Mechanically locked stem &lt;br&gt;- Good sheet take-up performance</td>
</tr>
<tr>
<td><strong>Interlock®</strong></td>
<td>- Multi-grip capability &lt;br&gt;- Fully sealed fastener &lt;br&gt;- Excellent hole fill &lt;br&gt;- Mechanically locked stem &lt;br&gt;- Good sheet take-up performance</td>
</tr>
<tr>
<td><strong>Q Rivet</strong></td>
<td>- Interference lock via a splined stem &lt;br&gt;- Stem plugs entire shell length &lt;br&gt;- Weatherproof</td>
</tr>
<tr>
<td><strong>Klamp-Tite® (structural)</strong></td>
<td>- Split tail formation for thin sheet and low strength materials &lt;br&gt;- Multi-grip capability &lt;br&gt;- Good clamp up &lt;br&gt;- Mechanically locked stem &lt;br&gt;- Visible lock</td>
</tr>
<tr>
<td><strong>T Rivet</strong></td>
<td>- ‘Peel-type’ tail formation &lt;br&gt;- High shear and tensile strength &lt;br&gt;- High clamp up &lt;br&gt;- Visible lock</td>
</tr>
<tr>
<td><strong>Lockbolt for blind sided assembly</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Avbolt®</strong></td>
<td>- Use on blind sided application &lt;br&gt;- High residual clamp force &lt;br&gt;- High tensile and shear strength &lt;br&gt;- Speed of installation &lt;br&gt;- Vibration resistance &lt;br&gt;- High grip capability</td>
</tr>
</tbody>
</table>

## Avseal® Sealing Plug

<table>
<thead>
<tr>
<th>Avseal® Sealing Plug</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- For both low-pressure and high-pressure hole sealing applications &lt;br&gt;- High leak resistance &lt;br&gt;- Exceptional hole fill &lt;br&gt;- Efficient stem locking device &lt;br&gt;- Wide choice of installation tools</td>
</tr>
</tbody>
</table>

## Applications

- Engine blocks, transmissions, cylinders, brakes, gear box, pneumatic systems, hydraulic blocks, compressors, pumps

## Installation Equipment

<table>
<thead>
<tr>
<th>Fastener</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genesis® nG2-S</td>
<td></td>
</tr>
<tr>
<td>ProSet® XT3 - coming soon</td>
<td></td>
</tr>
<tr>
<td>ProSet® XT4 - coming soon</td>
<td></td>
</tr>
<tr>
<td>7287</td>
<td></td>
</tr>
</tbody>
</table>
Lockbolt Systems

Benefits of assembly

POP Avdel two piece lockbolt systems are designed for high strength assembly. Quick and simple to place, they provide tamper-proof joints and are the ideal solution where spot welding is not practical or not possible. They are widely used in demanding engineering industries such as vehicle body building, railways, construction and containers. Key user benefits include:

- High speed assembly
- High shear and tensile strength
- Consistent high clamp
- Excellent vibration resistance
- Tamper-proof joints
- Quick and simple to install

Typical placing sequence

1. The fastener bolt is located in the hole and the collar placed over the stem. The tool is then located onto the stem.
2. Tool activation pulls the materials together and swages the collar into the grooves of the pin.
3. At a pre-determined load, the stem breaks flush with the top of the collar.

Assembly applications

- Agricultural equipment
- Automotive assemblies and components
- Building and construction
- Cabinets and enclosures
- Commercial vehicle bodies
- Domestic appliances
- Fencing
- Railway rolling stock
- Reefer cool and dry freight containers
- Solar & wind energy
- Solar power plants
- Steel construction
- Commercial vehicles
- Rail wagon for vehicle transportation
- Ventilator frame
- Container

Please visit our website StanleyEngineeredFastening.com for fastener placing animations.
Range Overview

NeoBolt®
- No pin break
- High strength and superior vibration resistance
- Fast and consistent installation

Avdelok®
- High shear strength
- High controlled clamp

Avdelok® XT
- Exceptional shear and tensile strength
- Sizes from 12.7 mm (1/2"") to 28.6 mm (1-1/8"")

Maxlok®
- Wide grip range
- High shear strength

Avtainer®
- High shear strength
- Joins composite panels to metal
- Leak resistant
- High speed installation

Lockbolt for blind sided assembly

Avdelok® XT
- Exceptional shear and tensile strength
- Sizes from 12.7 mm (1/2"") to 28.6 mm (1-1/8"")

Avbolt®
- Use on blind sided application
- High residual clamp force
- High tensile and shear strength
- Vibration resistance
- High grip capability

Installation Equipment

<table>
<thead>
<tr>
<th>73200</th>
<th>nG3 LB</th>
<th>7287</th>
<th>734 AV™</th>
</tr>
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<tbody>
<tr>
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<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>
Blind Rivet Nuts

Benefits of assembly

POP Avdel blind rivet nuts and installation tools provide a quick, reliable and low cost system of inserting high quality, load bearing threads. The blind rivet nuts offer many benefits over weld nuts, self-tapping screws, pressed inserts and nuts & bolts. Key user benefits include:

- Blind sided assembly
- Reliable and secure thread installation
- No damage to surface coatings
- Reduced rework and wastage
- Lower cost of installation
- Suitable for use in stamped or drilled holes
- Designed for automation

Typical placing sequence

The rivet nut is threaded onto the drive screw of the installation tool and inserted into the prepared hole in the workpiece.

On activating the tool, the blind rivet nut is pulled towards the tool, forming the body wall radially outwards to clench tightly against the workpiece.

At a pre-determined torque, the drive screw of the tool reverses and is disengaged from the thread, leaving the rivet nut securely in position.

Please visit our website StanleyEngineeredFastening.com for fastener placing animations.

Assembly applications

- Adjustable feet/casters
- Automotive components
- Compressor units
- Computer chassis
- Door hinges
- Lawnmowers
- Lift cabins
- Number plates
- Radios
- Roof rack attachments
- Window frames

Suspension damper  Hydro formed cross beam  Handrail

Automotive crash structure  Washing machine  Gas burner
## Range Overview

POP Avdel blind rivet nuts are available in a variety of materials, head forms and body shapes and include well known brands like POP Nut®, Hexsert®, Eurosert®, Nutsert®, Squaresert®, Versa-Nut®, as well as Jack Nut® and Well-Nut®.

<table>
<thead>
<tr>
<th>Body Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Splined Body</td>
<td>Improves torque-to-turn resistance in softer materials such as aluminium when compared to plain body blind rivet nuts.</td>
</tr>
<tr>
<td>Hexagonal Body</td>
<td>Improves torque-to-turn in components via form lock when compared to round and splined rivet nuts.</td>
</tr>
<tr>
<td>Square Body</td>
<td>Improves torque-to-turn resistance in components via form lock due to even greater contact surface compared to round and splined blind rivet nuts.</td>
</tr>
<tr>
<td>Slotted Body</td>
<td>Slotted body forms four legs when placed. Extra large blind side bearing area. For use in composites and plastics.</td>
</tr>
<tr>
<td>Closed End Body</td>
<td>Prevents the ingress of dirt and fluids into thread.</td>
</tr>
<tr>
<td>Pipe POP Nut®</td>
<td>Designed to be installed in a pipe with the curved surface of a rear flange, creating a horizontal surface for subsequent component assembly.</td>
</tr>
<tr>
<td>Large Flange</td>
<td>Provides a large load bearing surface to reinforce the hole and prevent push through.</td>
</tr>
<tr>
<td>Low Profile</td>
<td>Allows near flush installation and clamp up without the need to prepare special holes.</td>
</tr>
<tr>
<td>Countersunk</td>
<td>Allows flush installation and secure clamp up.</td>
</tr>
<tr>
<td>Well Nut®</td>
<td>Rubber blind nuts ideal for isolating against vibration, electrical conductivity and galvanic corrosion and for sealing against ambient moisture and gases.</td>
</tr>
<tr>
<td>Jack Nut®</td>
<td>Designed to be installed in soft or brittle materials such as plastic, cardboard or glass.</td>
</tr>
<tr>
<td>Customised Designs</td>
<td>We can design and manufacture blind rivet nuts with a wide variety of forms and finishes:</td>
</tr>
<tr>
<td></td>
<td>• Special surface coatings</td>
</tr>
<tr>
<td></td>
<td>• Varying grip ranges, flange dimensions and nut lengths</td>
</tr>
<tr>
<td></td>
<td>• Closed end and sealed rivet nuts</td>
</tr>
</tbody>
</table>

## Installation Equipment

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Model</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProSert® XTN20</td>
<td>74200</td>
<td><img src="image1" alt="ProSert® XTN20" /></td>
</tr>
<tr>
<td></td>
<td>74405</td>
<td><img src="image2" alt="74405" /></td>
</tr>
</tbody>
</table>
STANLEY Engineered Fastening, a Stanley Black & Decker Inc. Company has been revolutionizing fastening and assembly technologies for a variety of industries for more than 40 years.

For more information, please visit our website

StanleyEngineeredFastening.com

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