



Fasteners for Electronics



Innovative Fasteners for an innovative Industry

Company Overview

Avdel's global electronics customers create products that link people together through voice, data and video. Cellular phones, computers, hard disk drives, TVs and satellite dishes all contain Avdel products. Because we know that a complete fastening solution means more than a quality fastener, we offer a complete package to help you overcome very specific application challenges, lower costs and maximize efficiency of your operation. From the earliest stage of new product design through large scale assembly, Avdel is a global organisation offering expertise and know-how at a local level through manufacturing facilities, as well as service and logistics on five continents.



We offer a broad range of fasteners including:

- Speed Fastening® System, a unique assembly system designed for rapid, reliable fastening in medium to high volume applications
- Breakstem fasteners to suit virtually every assembly requirement
- Threaded inserts, a quick reliable low cost system of inserting high quality, load bearing threads
- Installation systems ranging from cost-effective handtools to bespoke assembly systems

Fasteners for Electronics Applications

Speed Fastening® Systems

Avdel Speed Fastening® systems provide rapid and reliable assembly of metals, plastics, composites, passive and active 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 process. Speed Fastening® offers many benefits over conventional mechanical assembly systems, including:

- High speed, blind sided assembly
- Consistent clamp and grip
- Good vibration resistance
- Elimination of over-torquing
- Short cycle times
- Sizes from \varnothing 1.6 - 6.4 mm (1/16" - 1/4")

Briv®



Bulbed tail
Large headform
High clamp and shear

Grovit®



Designed for blind hole applications
Annular grooves on body
For use in wood, plastics
fibreglass and aluminium

Rivscrew®



Threaded fastener
Removable with hex key
and reusable
Fastens into materials up to
Vickers hardness 105 Hv5

Avtronic®



Attaches DIN 41612 connectors
and other components to PCBs
Annular grooves on body

Chobert®



Internal tapered bore
Controlled clamp
High shear
Ideal for soft and brittle
materials

Avsert®



Threaded stand-off pillars for
PCBs
Internally threaded bore
Variety of stand-off heights

Double Flush Chobert®



Designed for thin sheet materials
Flush surface on both sides of
the joint
Reduces excess space require-
ments within the chassis

Avlug®



Solderable terminal posts
for PCBs
Rolled/knurled shank

Fasteners for Electronics Applications

Breakstem Systems

Avdel breakstem fasteners and installation tools are a leading fastening system offering multi-grip performance, consistent and reliable installation and high speed, high performance assembly. There is an 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
- Good clamp and vibration resistance
- Positive stem retention
- Sizes from \varnothing 2.4 - 10.0 mm (3/32" - 3/8")

Avex®/Stavex®



Multi-grip capability
Good hole fill
Retained stem
Large blind side bearing area

Hemlok®



Very high shear and tensile strength
Large blind side bearing area
Interference lock via splined stem

Avibulb®/Avinox®



High shear and tensile strength
Retained stem
Large blind side bearing area
Stainless steel option

Monobolt®/Interlock®



Multi-grip capability
Fully sealed fastener
Mechanically locked stem
Good sheet take-up performance

Earth Tab Rivet



Cost effective earthing point
Paint piercing capability
Twin tabs allow one or two connections

Q Rivet



Interference lock via a splined stem
Stem plugs entire shell length
Weatherproof

Avex® Splined



Steel splines for electrical continuity in earthing applications
Multi-grip capability

Blind Threaded Inserts

Avdel threaded inserts and installation tools provide a quick, reliable and low cost system of inserting high quality, load bearing threads. The inserts 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
- Lower cost of installation
- Reduced rework and wastage
- Sizes from M3 - M12, 6-32 - 3/8-16 UNC, 10-32 - 3/8-24 UNF

Splined Body - Eurosert®



Improves torque-to-turn resistance in softer materials such as aluminium when compared to plain body inserts.

Square Body - Squaresert®



Improves torque-to-turn resistance in components via form lock due to even greater contact surface compared to round and splined inserts.

Hexagonal Body - Hexsert®



Improves torque-to-turn in components via form lock when compared to round and splined inserts.

Versa-Nut®



Slotted body forms four legs when placed.
Extra large blind side bearing area.
For use in composites and plastics.

Headforms and body geometries include:

- Large Flange

Provides a large load bearing surface to reinforce the hole and prevent push through.

- Low profile

Allows near flush installation and clamp up without the need to prepare special holes.

- Countersunk

Allows flush installation and secure clamp up.

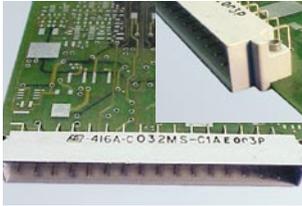
- Closed end

Prevents the ingress of dirt and fluids into thread.

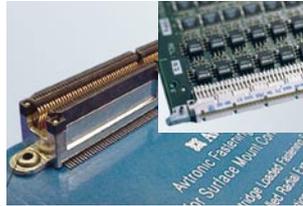
Success with Avdel® Systems

Electronic Components / PCBs

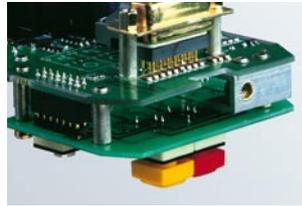
DIN 41612 male edge connector



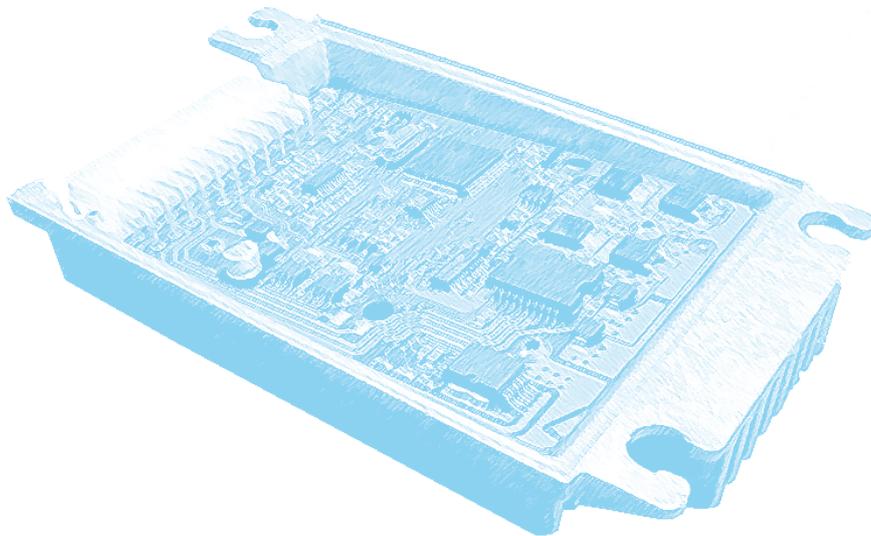
Surface mounted connectors to PCBs



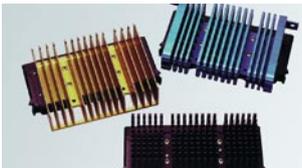
Threaded stand-off pillar



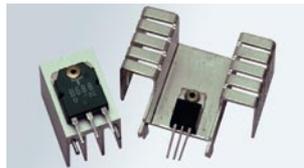
Terminal post - wire wrap



Heatsinks to processor cartridges



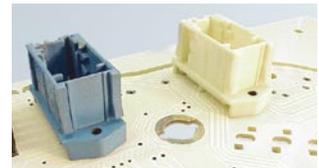
Semi-conductors to heatsinks and printed circuit boards



DB25 subminiature connector 4.40 UNC female



Automotive vertical mounted connectors

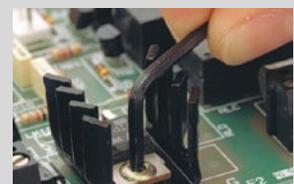


Assembly Applications

- Removable and reusable Rivscrew® fasteners attach electronic components on PCBs
- Chobert® rivet attaches PCB to metal frame
- Rivscrew® PL fasteners attach PCB to LCD television frame
- Avsert® stand-off pillars provide a female thread in port adaptors and serial ports
- Avtronic® fasteners attach connectors to PCBs
- Avsert® fasteners serve as a stand off pillar for PCBs
- Avlug® fasteners can be used as solderable terminal post and wire wrap
- Earth Tab Rivet earths most electrical needs

Featured Product: Rivscrew®

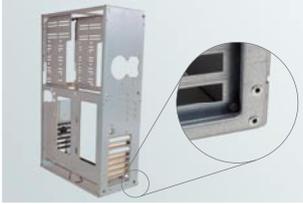
Threaded, removable speed (repetition) fasteners that combine the speed of rivet placement with the removability of a screw, but without the risk of over-torquing. Rivscrew® fastener is placed using a hexagon mandrel which expands the threaded diameter radially, adjacent to its six corners forming a thread in the host material. After placing, Rivscrew® fasteners are removable for servicing with a hex key and reusable.



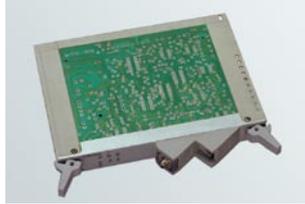
Success with Avdel® Systems

Computer Chassis, Housing & Peripherals

Computer cabinet



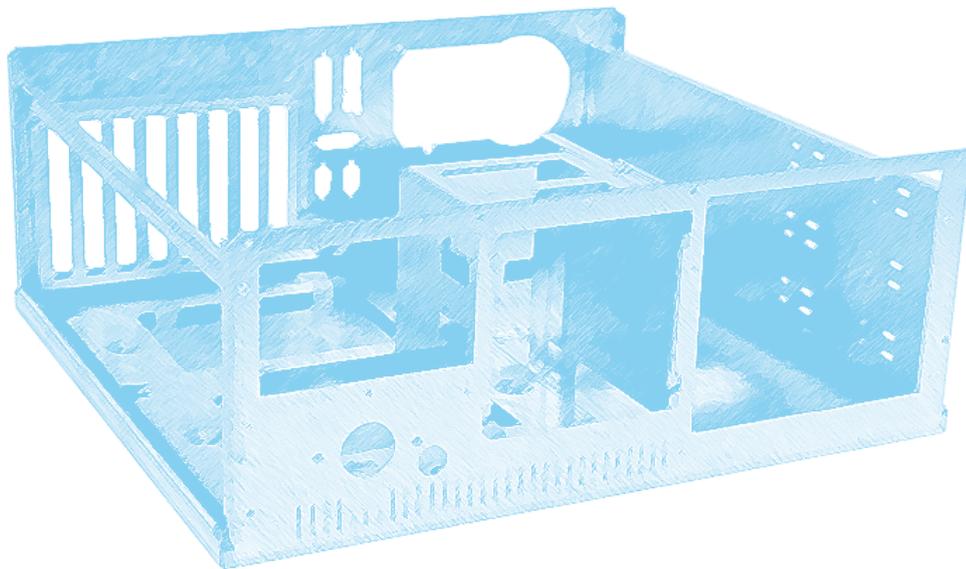
Card ejector



Resistor



Speaker



Identification plate



Housing for car alarm



Threaded female connector



Fan attachment

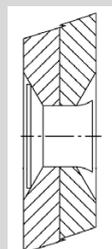


Assembly Applications

- Briv® and Chobert® rivets for assembly of computer cabinets using multi-head assembly systems
- Rivscrew® PL fastener for use in plastic materials like speaker or other housing
- Chobert® rivet attaches identification plates to housing
- Eurosert® threaded inserts to attach fan housing
- Monobolt® rivet assembles cash dispenser housing

Featured Product: Double Flush Chobert®

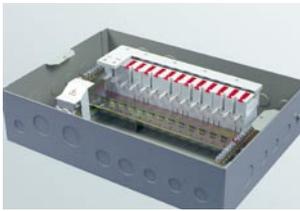
The Double Flush rivet is a Speed Fastening® rivet with countersunk head for use in exceptionally thin sheet materials. It is placed into sheets that have countersunk bores on both sides. After installation, the placed rivet forms a flush fastening on both the front and rear of the application. Use of the Double Flush reduces excess space requirements within the chassis and provides superior joint strength when compared to competitive technologies.



Success with Avdel® Systems

Telecommunications & other Applications

Electrical switches



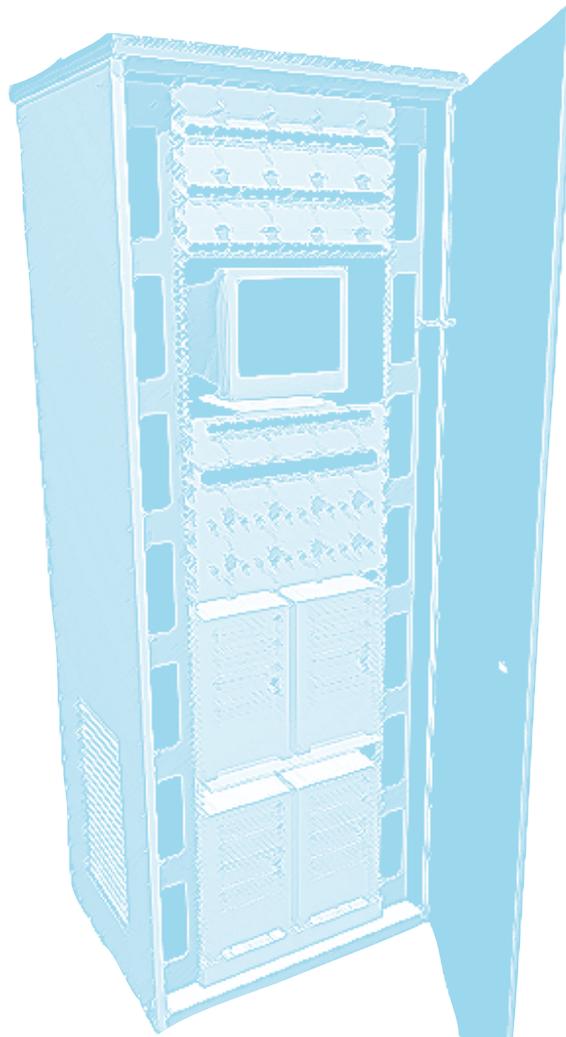
Telecommunications cabinets



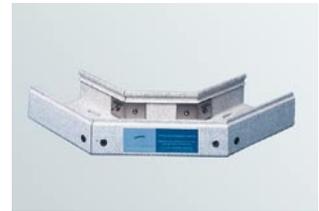
Control box



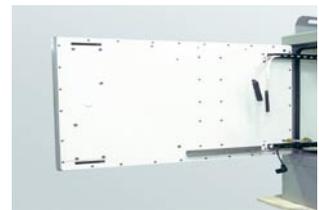
Traffic light reflector, contact point



Cable trunks



Door hinge



Frame



Earthing point



Assembly Applications

- Avinox® and Stavex® rivets for assembly of outdoor telecommunications housing
- Hemlok® fasteners for attachment of door hinges
- Double Flush Chobert® and Rivscrew® rivets for mobile phones
- Avibulb® rivet to attach PCB racking
- Earth Tab Rivet attaches earth strap to door
- Monobolt® rivet for attachment of outer panels to framework
- Large Flange Eurosert® threaded insert for lifting eye points in roof

Featured Product: Monobolt®

Multi-grip structural breakstem fasteners providing a fully sealed joint and visible lock. Excellent hole fill is achieved via radially expanded body that provides very strong, vibration resistant joints and compensates for irregular, oversized, slotted or misaligned holes. Monobolt® rivets feature good sheet take-up performance for large gap closing capability and a visible lock for quick and easy inspection.



Installation Systems

Handtools, Workstations and Assembly Systems

From cost-effective handtools to bespoke assembly systems, Avdel installation tools offer rapid and reliable assembly to meet your specific requirements. We also design complete workstations for the individual requirements of the electronics industry. Ranging from simple pantograph workstations to multi-headed, customised equipment, these systems can dramatically reduce assembly time and costs whilst improving consistency of placing. Together with the fasteners, these precision tools create a high quality, reliable assembly system. The fasteners are placed accurately and consistently without the risk of over-torquing.

Handtools & Workstations

Some examples of Avdel installation tools especially suited for the electronics industry:



The lightweight Speed Fastening® tool Type 753 with separate intensifier uses hydraulics for placing fasteners resulting in reduced shock loads.



The Genesis® nG range comprised of high performance, lightweight hydro-pneumatic handtools for breakstem rivets. The tough ergonomic construction allows for swift placement whilst the light design reduces operator fatigue.



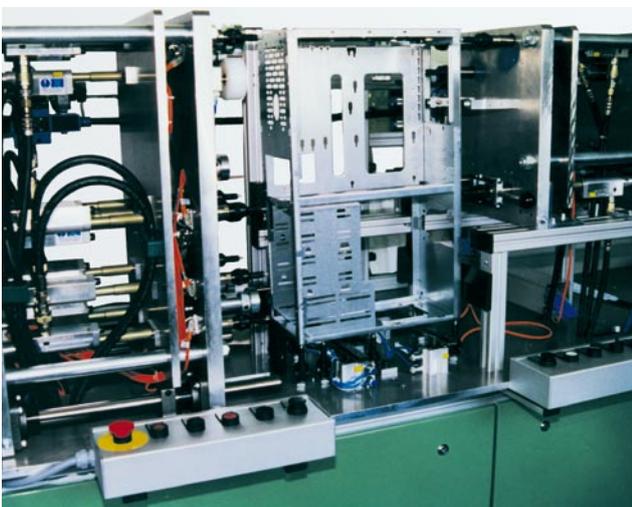
Single-head workstations provide rapid assembly which makes them cost-effective even with small batch sizes. Available as Pantograph, Fixed arm or Under-bench Workstation.



Mini-MAS offers double-head parallel riveting and linear positioning of one riveting module for progressive adjustment of the riveting pitch from 29 up to 120 mm (optional 17 -108 mm).

Customized Assembly Solutions

These systems can dramatically reduce assembly time and costs whilst improving consistency due to synchronous placement of multiple fasteners. The direction, type and number of assembly heads can all be customized, the systems can be designed for virtually any application or assembly environment. We have designed equipment from two heads to over eighty heads, the configurations are almost limitless. Process monitoring equipment or clamping modules can be easily integrated. An additional benefit of these systems are the practical jig points provided by the assembly heads. ESD construction is optional.



29 placing heads to assemble computer chassis using Speed Fastening® rivets.



Speed Fastening® module with rivet process monitoring and release function at balancer arm for assembly of AC converter.



Multiple head workstations especially designed for assembly of various electronic components.