Henrob Self-Pierce Riveting

Innovative joining solutions
company OVERVIEW
Operating in the world market for over 30 years, we have established ourself as a world leader in self-pierce fastening technology. We design, manufacture, and sell self-pierce riveting systems and rivets for use in construction, automotive, and white goods industries.

Henrob’s self-pierce riveting (SPR) technology was invented in Australia in the early 1980’s as an improved process to fasten precoated steel. An entrepreneur licensed the technology and transferred it to the UK in 1985 to set up a manufacturing and R&D center. With manufacturing sites in the United States and in the United Kingdom, along with international locations in Europe, North America and Asia providing customer application support, we have the ability to deliver solutions globally while serving customers locally. Now being part of the Atlas Copco Group we are able to extend our reach even further in the areas of sales, service, and engineering support.

We are committed to providing high quality, innovative, and cost effective joining solutions for today’s demanding applications in the automotive, heavy truck, steel-frame construction and recreational vehicle industries to name a few.
Self-pierce riveting (SPR) is a method of joining two or more pieces of material using a rivet without the need for a pre-drilled hole. The basic self-pierce riveting process involves driving a semitubular rivet at high force through the material layers to be joined, into a die which causes the tail of the rivet to flare out and form a joint.

It is an automated repeatable process that requires no hole preparation and delivers high static strength similar to, or better than, spot welding. The process produces a fatigue resistant joint that is stronger than spot welding and less susceptible to corrosion.

The increasing use of coated, lightweight and high-strength materials, such as galvanized or pre-painted steel and aluminum has led industries to re-examine traditional methods of assembling components. Welding these materials is difficult and often not possible, while assembly using conventional rivets is slow and costly.

The SPR process combines high joint integrity with rapid assembly time.
what is SPR?
Self-pierce riveting is the modern, flexible joining solution that meets the demanding requirements of cutting edge industries, both today and for the future.

The SPR process can join sheets of dissimilar materials, like aluminum to steel and composites to metals, as well as similar materials like steel to steel and aluminum to aluminum.

The rivets are inserted using specially designed hydraulic and electric servo units with automatic rivet feed suitable for robotic production.
• Difficult to weld materials, such as aluminum or high strength steel, can be joined with consistent quality
• Joining of galvanized or pre-painted materials without damaging the coating
• No pre-drilling required

Advantages of SPR over other fastening techniques

• High strength with a visually checkable joint
• Can be used in conjunction with adhesives
• Manual or automatic application
• The ability to join dissimilar materials, such as aluminum to steel

The riveting process has a very small environmental footprint, with reduced waste and no cooling water or fume extraction required.

Another benefit is a work environment that is quiet, clean, and safe. SPR provides a workplace that is free from sparks, fumes, excessive noise, filings or debris.
CAPABILITIES

At Atlas Copco we develop, design and manufacture a wide range of self-pierce fasteners and riveting systems in-house to our own exacting standards which meet or exceed the requirements of ISO9001, ISO14001, TS16949, and other customer specific accreditations.

The SPR process is constantly being improved and developed for ever more challenging applications. We have engineered a range of systems including both hydraulic and electric powered tools, a range of rivet feed systems, and a real-time monitoring system which gives traceable and recordable results without destroying the riveted joint.

We also manufacture upset dies in-house allowing comprehensive solutions for your SPR needs. We machine over 144 different dies in a two step operation with robotic loading and unloading and rigid quality inspection.

Our focused approach to maintaining high standards of design and manufacture has resulted in customer satisfaction and repeat business across industries worldwide.
Our applications engineers add fastening and assembly expertise to your technical team. After a careful review of your joint and installation needs, they will propose a complete fastener and tool specification suited to your application requirements and production environment.

We provide sound and rapid joint development solutions to optimize your rivet joint to best suit the application and ensure the desired outcome.

Our extensive global network with several locations, as well as distributors and agents, offers comprehensive local service and support.
rivet SELECTION

With complete in-house fastener design and manufacturing facilities in the UK and US, our offering includes an extensive self-piercing rivet product range, allowing us to successfully join a wide variety of materials. Standard product offerings include:

**Sizes**
- 3mm and 5mm body diameters
- Lengths from 3.5mm to 14mm
- Semitubular and fully tubular designs

**Materials**
- Heat-treated boron steel wire
- Stainless steel

**Coatings**
- Zinc
- Zinc / Tin
- AlMac (Zinc/Tin/Aluminum)
- Also with top coatings

**Head Styles**
- Countersunk
- Pan
- Flat
- Threaded studs

Our state-of-the-art rivet manufacturing facilities include in-line wire processing, advanced multi-die forging technology with SPC control and 100% automatic inspection and packaging. Complete batch traceability exists from the production of raw material through to the packaged product.
Our self-pierce riveting systems are available to suit a wide variety of applications and production styles. Standard catalog riveting tools are effective solutions for many functions, however, equipment is most often designed and manufactured specifically for customer requirements.

**Equipment Options**

Every rivet and tool system we manufacture is designed to meet the specific needs of your applications.

**Equipment Types**

- **RivLite**: Handheld portable tool for repair, on-site applications, and low volume production
- **Hydraulic**: High volume production, fast cycle times, automatic rivet feed
- **Electric**: Heavily automated, high volume production

**Rivet Delivery**

- **Tape Feed**: Fast, low maintenance, cost-effective
- **Blow Feed**: Single and dual continuous feed systems ideal for high volume applications
- **Magazine Feed**: Greater freedom of tool movement and faster cycle times
Hydraulic Pre-Clamping and Electric Servo Systems used in combination with a robot accommodate sophisticated riveting operations in high volume production situations.
Battery-operated tools for repair

Manually operated fast-acting hydraulic tools

High force automated electric systems
In recent years the motor vehicle industry has moved focus to weight-reduction with vehicle body construction materials that can lead to increased performance and reduce carbon dioxide and other emissions. Today’s lightweight fuel-efficient automotive structures call for an assembly technique that can join advanced materials reliably and efficiently.

Henrob rivets are featured in several major vehicle programs as auto manufacturers strive to reduce weight through more extensive use of ‘new’ materials like aluminum, high-strength steels and composites.

Our self-pierce riveting is found in body-in-white assembly lines as well as shock towers, sunroofs, doors, and hoods.
Our SPR solutions have been revolutionary allowing for the possibility of joining materials that are resistant to welding in industries such as light gauge steel construction, recreational vehicles, trailers, solar panels, road signs and more. Whether developing a new product or streamlining assembly of an existing one, you can rely on Atlas Copco’s experience and innovation in fastening technology.

Henrob SPR systems and rivets can join a variety of materials, including thin sheet high-strength steel, aluminum, plastic and composites. When it comes to applications that require an adhesive joining method, self-pierce riveting adds the benefit of ensuring a secure joint while giving the adhesive time to cure to form a tight bond.
CUSTOMER CENTERS

Beijing, China
Shanghai, China
Herford, Germany
Yokohama, Japan
Seongnam-si, Korea
Bratislava, Slovakia
Stockholm, Sweden
Bangkok, Thailand
Istanbul, Turkey
Birmingham, UK
Deeside, UK
Cornelius, USA
New Hudson, USA
Moscow, Russia

PRODUCT DEVELOPMENT, MANUFACTURING, ENGINEERING, PROJECT MANAGEMENT

Deeside, UK
New Hudson, USA

DISTRIBUTORS

Brisbane, Australia
Murano sul Po, Italy
Tokyo, Japan
Gimhae, Korea
Darul Ehsan, Malaysia
Athlone, South Africa
Stockholm, Sweden
Kachsiung, Taiwan
COMMITTED TO SUSTAINABLE PRODUCTIVITY

We stand by our responsibilities towards our customers, towards the environment and the people around us. We make performance stand the test of time. This is what we call - Sustainable Productivity.