

Henrob Self-Pierce Riveting Technology (HSPR)

Our reputation as the pioneer of modern self-pierce riveting has been built on providing creative products and joining solutions for our customers throughout the world. We invite you to discover the benefits of HSPR.

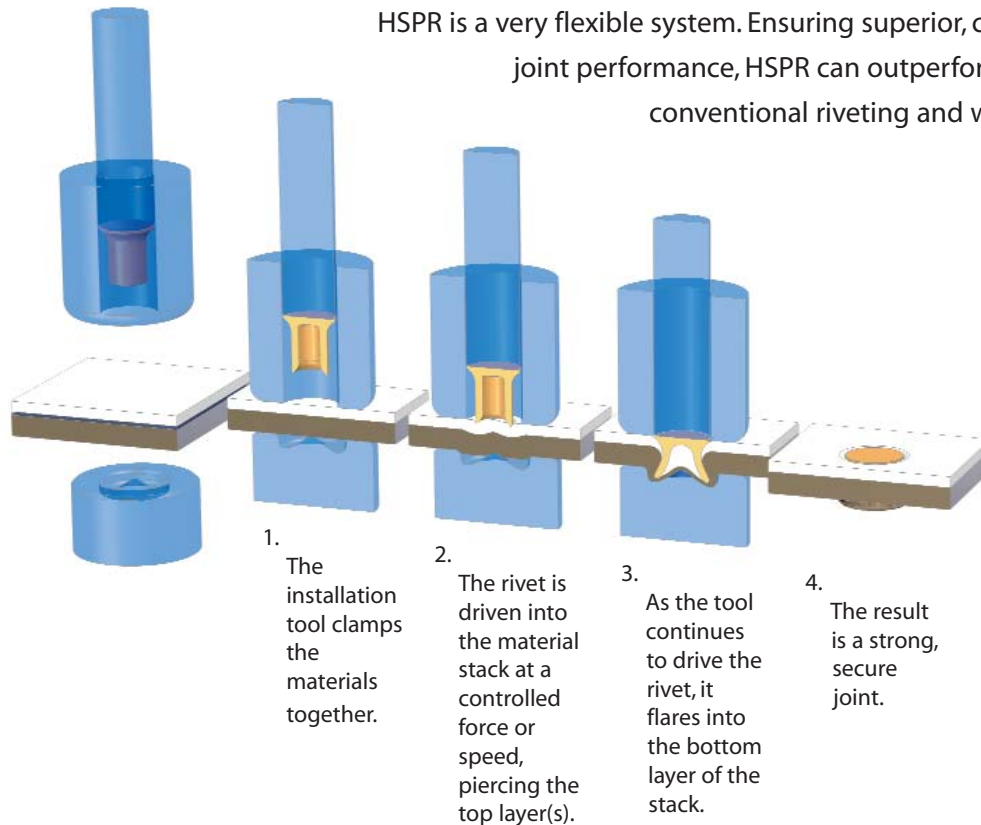




How HSPR Benefits Your Assembly

Self-pierce riveting is a process of joining two or more layers using an engineered rivet. Unlike conventional riveting, HSPR does not require a drilled or punched hole. In terms of product design and ease of integration into your manufacturing process,

HSPR is a very flexible system. Ensuring superior, consistent joint performance, HSPR can outperform both conventional riveting and welding.



Benefits of using self-pierce riveting technologies

- Can fasten stacks of 2 or more layers; current applications include up to 12mm total thickness in aluminum and 6mm in steel
- Will not damage coated or painted surfaces
- Provides repeatable joint strength
- Eliminates hole preparation
- Can replace expensive, multi-piece fasteners
- Provides superior static and dynamic load-carrying capabilities
- Because the bottom layer is not pierced, an HSPR joint can prevent the ingress of liquids or gases through the fastened joint

Benefits over welding

- HSPR can join dissimilar materials
- HSPR installation equipment is operator- and environment-friendly:
 - no cooling water or fume extraction is required
 - no waste products are generated
 - noise levels are low, typically <80dBa
- Riveted joints can be checked visually for proper fastening
- HSPR is compatible with adhesives and sealants, including layered sheets
- HSPR can be used on coated and painted surfaces, and will create better joints even on steel with thicker coatings of zinc
- Because HSPR is a cold form process, distortion due to heat-affected zones is eliminated

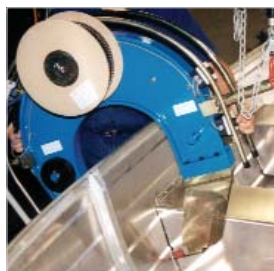


Installation Equipment



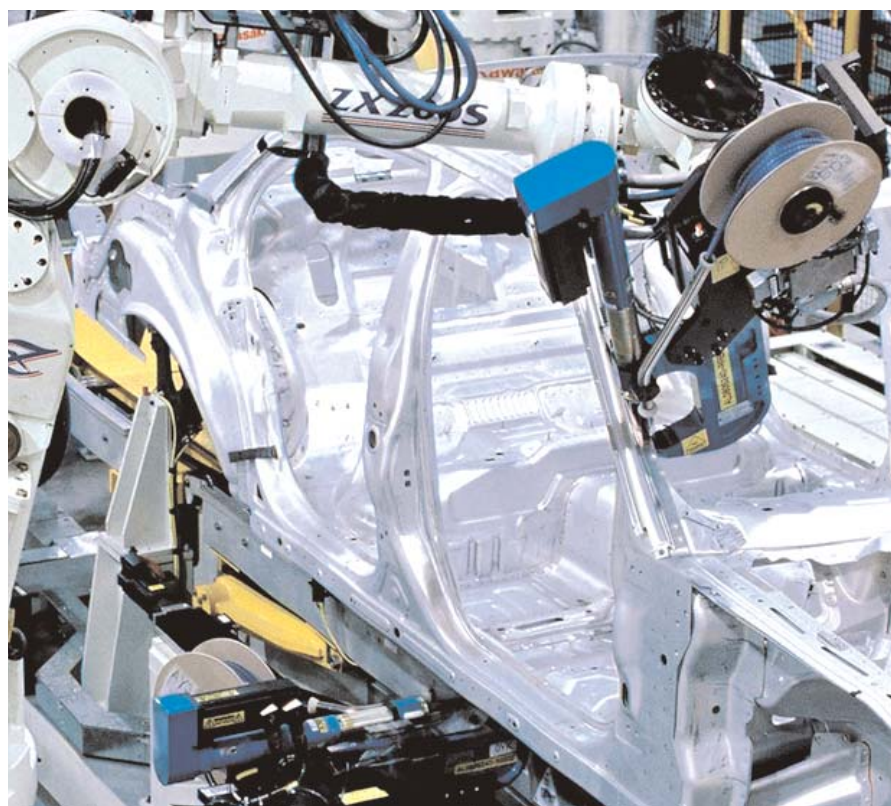
Henrob's philosophy is to design reliable, robust solutions for high productivity. This is achieved with the aid of 3D computer-aided design (CAD) software allowing in-depth modeling of tools and product access studies. Finite Element Analysis (FEA) software is used to ensure adequate life expectancy of tools.

Electric servo and hydraulic systems are available. The tool size, shape and configuration can be engineered to install the fasteners quickly and consistently. Lower-weight frames can be built to accommodate pre-existing equipment.



Optional process monitoring equipment ensures proper, consistent riveting with pedestal or automated systems.

Many rivet feed systems are available, including tape-mounted and loose feed. Compliant devices, tool balancers, robotic tool changers and process monitoring equipment can be integrated as required.



Standard Systems

- RivLite hand-held battery tool
- Single- and double-acting hydraulic systems
- Pre-clamp hydraulic systems
- Electric-servo based systems

Integrated Solutions/Options

- RivMon process monitoring
- Custom lightweight C-frames
- Special E-frames and O-frames
- Equipment handling accessories
- Mistake-proof tooling



Applications

Whether developing a new product or streamlining assembly of an existing one, you can rely on Henrob's experience and innovation in riveting technology. Henrob systems have benefited applications in a wide variety of industries around the world.

From standard tools to customized systems, from rivet joint design assistance to automated assembly cells, Henrob can find your optimal solution.



construction

Materials that can be fastened with HSPR

- steel (including high strength steel)
- aluminum
- plastics such as nylon and PP
- composites
- sheets with an intermediate layer of adhesive, insulation, sealants, etc.



recreational



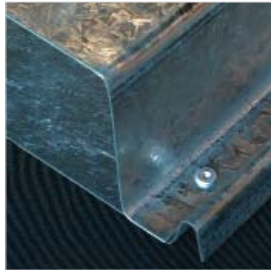
automotive



transportation



industrial



metal fabrication



white goods



agricultural



electronics

About the company

Henrob's principal activity is designing and manufacturing self-piercing rivets and installation systems, for which the company holds a number of patents.

Established in Flint, England in 1985, Henrob has grown to include operations in the USA, Australia and Germany. Additional distribution channels throughout the US, Europe and the Pacific Rim allow easy access to a wide variety of markets worldwide. In all industries, Henrob is the world leader in self-pierce riveting technology.



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