

Strength and safety in the motor vehicle industry

Innovative joining solutions

Lighter bodies, stro

Leading motor manufacturers like Jaguar, BMW and Volvo are constantly searching for more speed and strength, and at the same time improving safety. That means lighter, stronger bodies.

The use of aluminium, high strength steel and magnesium are becoming more prominent.

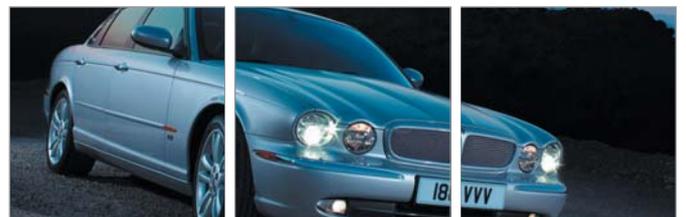
Joining these new metals needs something more than traditional spot-welding. With lightweight materials, spot-welding produces joints that are difficult or impossible to achieve consistently. High costs and variable quality make them unsuited for mass-production.

HSPR offers a joining process that is cost-effective, consistently strong, and environmentally friendly.

Henrob Self-Pierce Riveting (HSPR) is a cold joining process used to fasten two or more sheets of material by driving a rivet through the top sheet(s) and upsetting the rivet, under the influence of a die, into the lower sheet without piercing it. The result? No holes, no fumes, no sparks, no fuss, a cycle time of two to four seconds, and a joint that's stronger than spot-welding.

Since 1985, **Henrob** has led the way in the relentless pursuit of the ultimate joining process. Self-pierce riveting is 30% stronger than spot-welding, and has greater energy absorption, fatigue resistance and repeatable joint quality. And class-leading manufacturers agree.

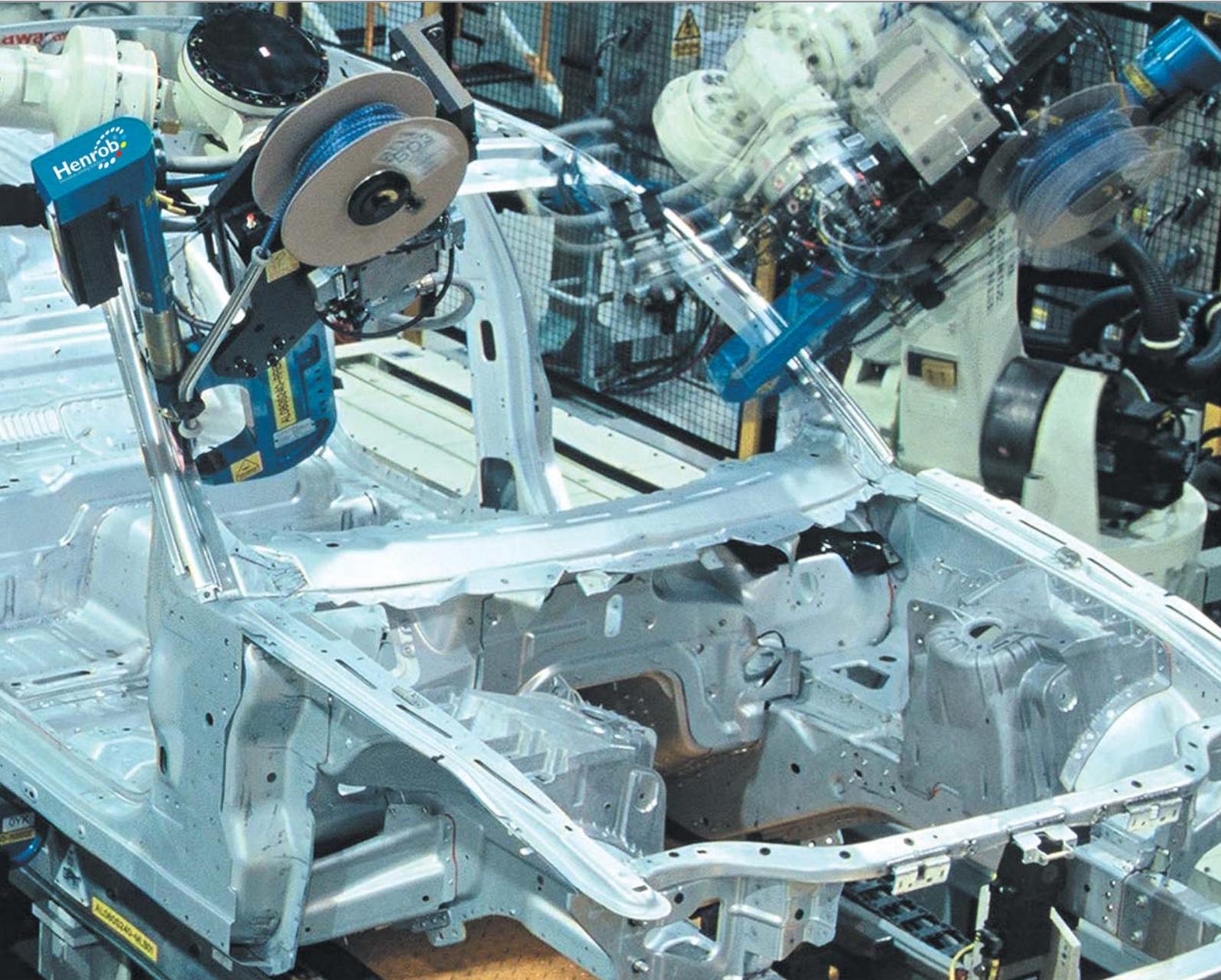
Henrob Self-pierce riveting offers security. Little wonder manufacturers who have used HSPR are consistently rated highly on the European New Car Assessment Programme (NCAP).





nger joins

'the relentless pursuit
of the ultimate
joining process'



Our client list currently numbers no fewer than eight leading motor manufacturers.

Why Henrob?

Specialisation is our strength. Doing one thing, and one thing only for decades, means a world-leading level of quality, precision and expertise. Unlike other SPR manufacturers, we understand in finite detail the requirements not only of the technology, but of the SPR joint itself. The result? A range of rivets for almost any need, and the ability to develop new rivet types in-house – very quickly.

And, of course, being focused only on SPR, we can keep one step ahead of the competition. **Henrob** is privately owned, which means we have the flexibility to change direction very quickly.

Now over three-thousand systems and a network of distribution partners across the world are your assurance that **Henrob** is still innovating, still expanding, and still dedicating ourselves to finding new solutions to old and new problems.



‘still innovating, still expanding, and still dedicating ourselves to finding new solutions to old and new problems’



Henrob self-pierce riveting:

- Is fast
- Is a high-quality process
- Is consistently strong
- Is environmentally friendly
- Can join mixed materials, e.g. steel and aluminium
- Can be used with adhesives
- Can be applied manually or by robot
- Needs no cooling water or fume extraction
- Is quiet (less than 80 decibels)



Innovative joining solutions

Good enough for Jaguar, Volvo & Audi, good enough for you?

German car manufacturer Audi has long had a reputation for safety, style, and for the sheer build quality of its cars. And it was Audi that provided the breakthrough for self-pierce riveting in the automotive industry.

In 1993, while developing the revolutionary, all-aluminium A8, Audi realised that how they joined the aluminium panels was critical for the car to comfortably pass fatigue and safety tests.

Spot-welding failed to offer the right joint characteristics. So, Audi looked further a field. After extensive crash, fatigue and environmental testing, they chose **Henrob's** patented high-force, pre-clamping, self-pierce riveting for the bulk of the car's single-point joints.

Audi used manual and robotic assembly techniques, and self-pierce riveting easily adapted to each. The company also got a better working environment – self-pierce technology does not generate heat, sparks, fumes, dust or excessive noise.



‘self-pierce technology does not generate heat, sparks, fumes, dust or excessive noise’

In 1994, **Henrob** followed our success with the A8 by applying our technology to North American truck builder Freightliner, which used SPR on a range of its trucks.



Next was Volvo's FH12 truck cab. The cab used relatively thin, high-strength steel to reduce weight. Spot-welding resulted in fatigue failure during testing.

Volvo's solution was to add reinforcing plates, which also added more weight and cost.

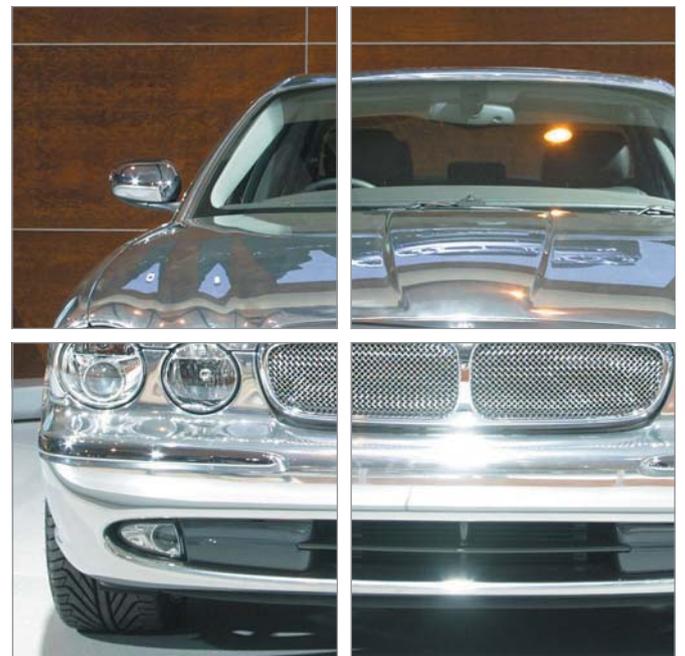


So, Volvo tested a cab assembled with HSPR, without reinforcement plates. The system survived for twice the normal test period without failure. Problem solved.

Perhaps the most significant new vehicle to use SPR is Jaguar's XJ model. The XJ uses unitary body construction – more suited to conventional methods of construction and manufacture.

Jaguar chose HSPR because of the difficulties and extra costs of spot-welding aluminium.

Now, more than a decade after its debut in the industry, **Henrob's** SPR is recognised as the market-leading joining technique, with motor manufacturers queuing up to reap the benefits.



United Kingdom

Henrob Limited, Second Avenue, Zone 2
Deeside Industrial Park, Flintshire, CH5 2NX, UK
Tel: +44 (0)1244 837220
Fax: +44 (0)1244 837222
Email: sales@henrob.co.uk

Henrob Direct Limited, Unit F, Tyburn Trading Estate,
Ashold Farm Road, Birmingham, B24 9QG, UK
Tel: +44 (0)121 382 7338
Fax: +44 (0)121 382 4203
Email: sales@henrobdirect.co.uk

United States of America

Henrob Corporation, 30000 South Hill Rd,
New Hudson, Michigan 48165, USA
Tel: +1 248 493 3800
Fax: +1 248 493 3800
Email: sales@henrob.com

Henrob Corporation (North Carolina),
9805 NorthCross Centre Court, Suite A,
Huntersville, NC 28087, USA.
Tel: +1 704 987 8005
Fax: +1 704 987 8006
Email: sales@henrob.com

Mainland Europe

Henrob GmbH, Oststraße 72,
32051 Herford, Germany
Tel: +49 (0) 5221 763080
Fax: +49 (0) 5221 7630811
Email: info@henrob.de

Australia

Henrob (UK) Pty Ltd, 400 Newman Road,
Geebung 4034, Brisbane, Queensland, Australia
Tel: +61 (0) 7 3865 2898
Fax: +61 (0) 7 3865 2867
Email: sales@henrob.com.au

visit our **website** www.henrob.com