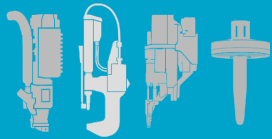


Henrob self-piercing stud systems

High mechanical strength with minimal electrical current resistance ideal for BIW earthing and conductivity

Atlas Copco



Industrial Assembly Solutions

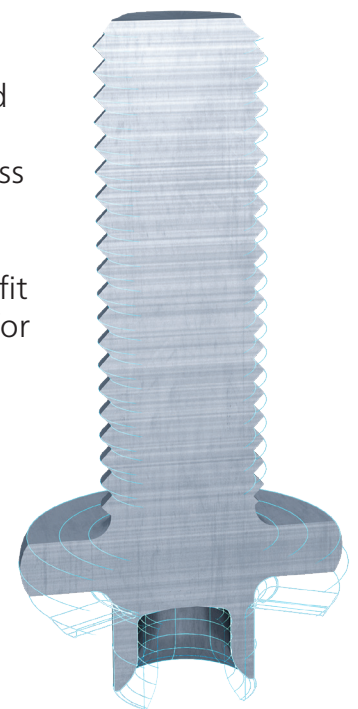
Motor vehicle lightweight car body joining made easier

Used for high or low volume manufacturing in automated and non-automated environments, our self-piercing studs (SPS) have a high degree of mechanical strength that can withstand impact, torque and vibrations. The insertion process for SPS is clean, with none of the sparks, spatter, waste, or fumes of welding.

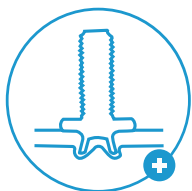
When your application needs to hold up to a heavy load, with the added benefit of minimal electrical current resistance, Henrob self-piercing studs are perfect for grounding.

Target market

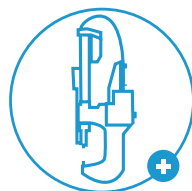
Target applications for Henrob SPS systems are BIW earthing and conductivity, along with trim fixing, brake fluid tubes, and wire harness anchoring.



Benefits at a glance



Highly impact-resistant and low-impedance bolt protrusion



Effective with both high volume robotic systems and lower volume manual systems



Real time process monitoring

Henrob self-piercing studs

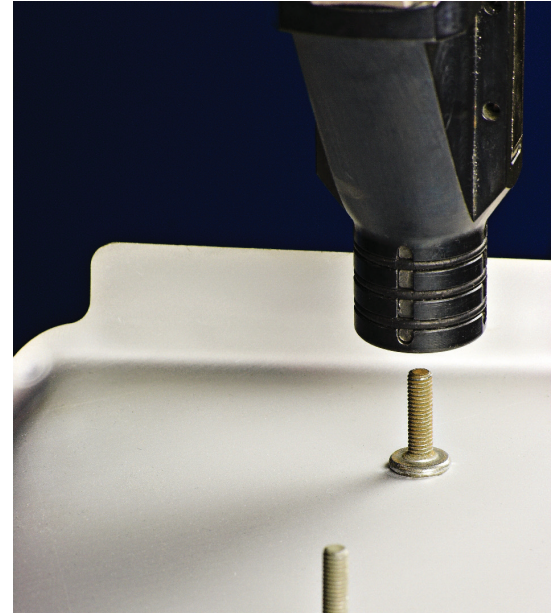
Features & benefits

Studs have a threaded shank attached to a castellated flange, with Henrob self-pierce rivet profile design. The geometry of the engaged castellation prevents the stud from rotating when torque is applied to the thread.

- Servo riveting technology
- Real-time process monitoring
- Uninterrupted stud supply
- Fast cycle times of 2-3 seconds
- 100% duty cycle
- High technical availability
- Perpendicular stud insertion with no leaning

Tool specifications

- Stud tools can be either manually or robot controlled
- Studs are loose fed from a vibratory bowl down a round tube to the tool nose
- Each bowl holds 250 - 500 studs
- Pedestal mount only



- M5 and M6 studs available
- 16mm & 17mm lengths in current production; shorter or longer available as required
- Minimum thickness panel possible: 1.0mm aluminum



Capabilities



Torque resistance

20Nm

Testing in 3mm thick 5000 aluminum sheets show M6 studs withstanding 18Nm - 20Nm torque.



Pull out performance

3kN

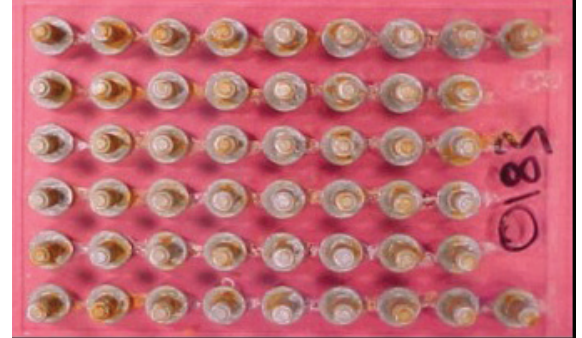
M6 studs tested in 3mm thick 5000 aluminum sheets withstood 3kN of force.



Electrical continuity

80-100 $\mu\Omega$

An aluminum sheet of studs was tested for electrical continuity between the stud and the sheet. A ductor tester was attached to the stud via an eyelet and torqued nut. The ductor probe was placed on the sheet 50mm from the stud. A current was passed between stud and probe and a measure made of the resistance. An M5 zinc nickel electro-plated stud had an average resistance of 86 $\mu\Omega$, compared to 54 $\mu\Omega$ for 50mm of sheet alone.



Corrosion resistance

240 - 600 hours

Samples of SPS were tested in a continuous salt fog per ASTM BS117. Once 5% of the stud surface area showed signs of red rust, the test was stopped and the time recorded. Corrosion resistance capability varies depending on the plating type selected. Electroplated zinc nickel yielded the longest corrosion resistance.