ARNOLD®
BlueFastening Systems

SWOPtec

Resistance element welding for aluminum and steel

Market requirements

- Joins aluminum to high-strength steel
- Reduces car body weight
- Has sufficient bonding strength
- Integrates into customer's existing welding and assembly lines
- Joining point surfaces are flush

ARNOLD has the solution

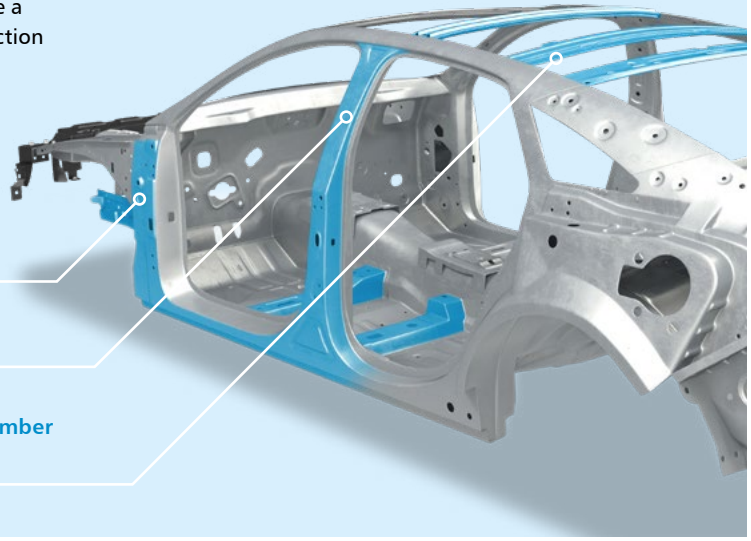
SWOPtec
A solution that uses **existing system technology.**

ARNOLD UMFORMTECHNIK offers a comprehensive selection of videos and animations. Simply scan the QR code above, or visit our website and click on our ARNOLD TV YouTube channel.

www.arnold-fastening.com

SWOPtec
Applications

SWOPtec
is suitable for joining any components where a steel-aluminum connection is required.



Examples:

A pillar

B pillar

Seat or roof cross member

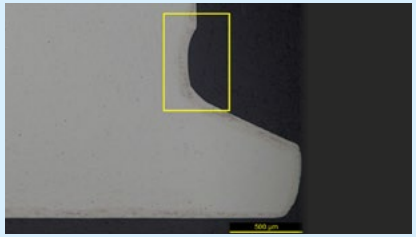
The technical advantages of SWOPtec

- Joins lightweight materials to high-strength steels
- Can be integrated into existing welding and assembly lines
- Requires only a small amount of further qualification for factory personnel
- Is available as a complete system including the flexible feeder and processing technology
- Very good strength performance

The commercial advantages of SWOPtec

- Generates considerable weight saving
- Efficient solution saves additional costs
- Can be implemented in pressing shop or shell construction applications

SWOPtec
The geometry of the fastener element



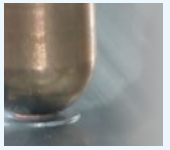
12 mm at the head and 10.5 mm shank diameter.

Covers aluminum sheet applications in thickness range of **1.1 mm to 4.5 mm.**

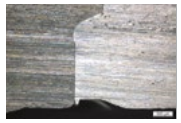
SWOPtec fastener elements
are made from easily weldable 20MnB4 manganese boron steel. The coating on the elements can be adapted to suit the customer's needs. The standard coating on the element is electro-galvanized zinc to a minimum thickness of a minimum 8 μm. The elements are not heat-treated (tempered) as standard.

SWOPtec
The joining process in two steps

Step 1
Press the SWOPtec element into the aluminum component



Step 2
Resistance spot welding on the aluminum and steel components



Elements cannot fall out due to the interlock in the aluminum in the element groove

Metallographic micro-section of a welded SWOP fastening

Find out more
about SWOPtec, innovative sheet-metal fastenings, and possible applications

www.arnold-fastening.com

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