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ARNOLD[®]
BlueFastening Systems



Flowweld[®]

Excellent fastening performance for difficult combinations of materials

The market's demands

- ⊕ Multi-material mix and joinability of ultra high strength steels to aluminum
- ⊕ Wide variety of sheet thicknesses
- ⊕ Using existing quality characteristics
- ⊕ Reliable high-volume production thereby cost reduction at each joint
- ⊕ Saving weight, Material flexibility, Corrosion-resistance
- ⊕ Fastener element and system technology from a single supplier
- ⊕ Global availability and support
- ⊕ No preparation of assembly point necessary

ARNOLD provides the solution

Flowweld[®]
Friction element
welding to join
multi-material mixes

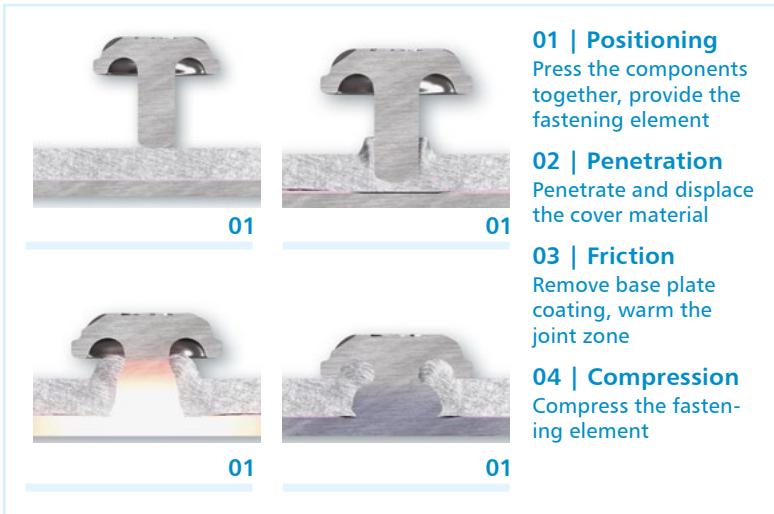


Watch how Flowweld[®] works

ARNOLD UMFORMTECHNIK provides an extensive selection of videos and animations. Just scan the QR code above or visit our website and click on our Youtube channel ARNOLD TV.
www.arnold-fastening.com

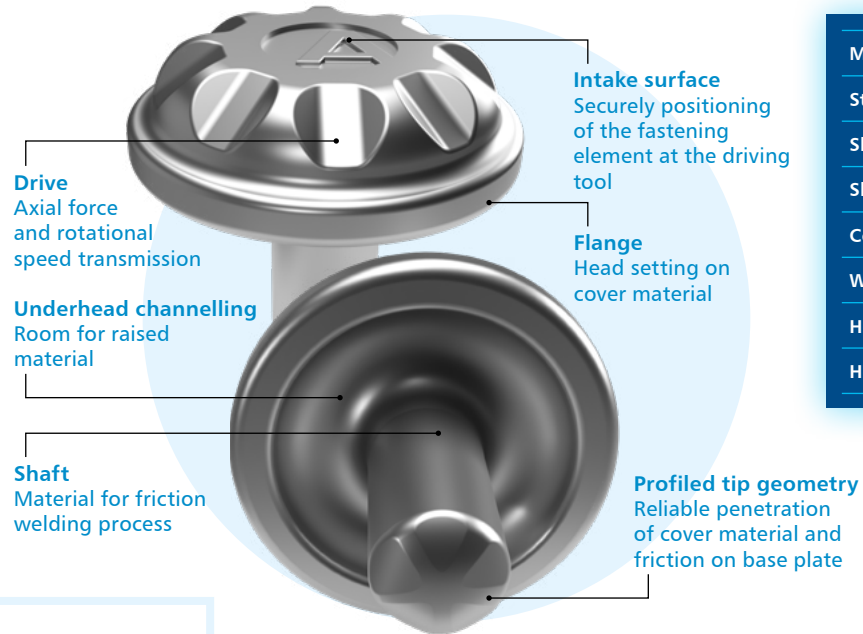
Flowweld®

The steps of the joining process



Flowweld®

Features



Material	1.5525 20MnB4
Strength class	10
Shaft diameter	3.5 mm
Shaft length	5.0 / 7.0 mm
Coating	Zink-Nickel
Weight	2.2 g
Head height	3.5 mm
Head diameter	11.9 mm

Technical advantages of Flowweld®

- ⊕ Base plate thicknesses start at 0.8 mm and steel strength classes up to 1900 MPa are possible
- ⊕ Aluminum thicknesses from 0.8 to 3.0 mm can be joined with just two lengths of fastener element
- ⊕ System technology designed especially for friction element welding
- ⊕ Shearing strength of up to 12.0 kN, cross tensions up to 8.0 kN
- ⊕ Joining direction - aluminum to steel
- ⊕ Car body
- ⊕ Hybrid material combinations with adhesive are possible
- ⊕ Achievable flange widths min 17.0 mm

Commercial advantages of Flowweld®

- ⊕ Fastener element and system technology from a single supplier
- ⊕ Proven integrated system ensures suitability for high-volume production
- ⊕ Standard OEM assembly cycle times
- ⊕ Globally available technical support from ARNOLD

Joining system technology



Learn more about Flowweld® friction element welding, and its applications

www.arnold-fastening.com

Max downholder force 4.0 kN

Max axial force 10.0 kN

Max rotational speed 25,000 rpm

