Version 09.2026
www.arnold-fastening.com



Technical Services

Analyze

- Make influencing factors, interrelationships and risks transparent at an early stage.

Realize

- Transfer solutions quickly into prototypes, pre-series stages and applicable processes.

Validate

- Verify function and assembly behavior under real operating conditions.

Stabilize

- Secure launches and production processes on site and operate them reliably over the long term.

Your Added Value in Safety

- Stress and deformation analyses
- Production-oriented joining and screw-joint tests
- Standards-compliant test programs
- Assessment of all relevant influencing factors
- Clear assembly recommendations

Your Added Value in Speed

- Analyses ahead of the first physical component
- Reduction of variants in testing
- Fast functional samples and small batches
- Additive manufacturing for complex components
- On-site analyses for direct decisions

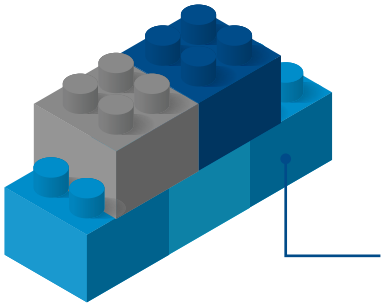


Less risk.
More clarity.

Less waiting.
More knowledge.



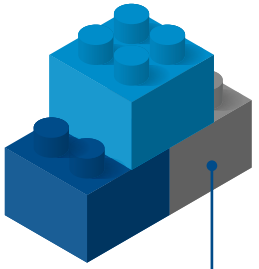
Individually Strong. Unbeatable Together.



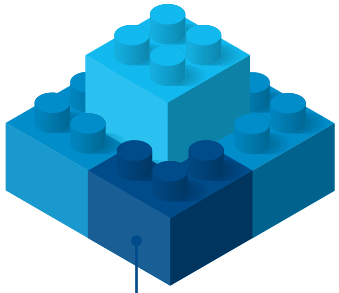
Can be combined modularly to create tailored solutions



Your Question



Our services are like building blocks that reinforce one another



This creates a solution from many strong services that provides confidence - all from a single source

Tightness Testing

Detect at an early stage whether individual joints or assemblies seal reliably - already during the concept phase.



Your Benefits

- Early optimization of the joint
- Standardized leak-rate determination
- Selection of suitable sealing solutions
- Clear optimization recommendations

Scope of Services

- Leak-rate determination for the highest leak-tightness requirements by means of helium mass spectrometry
- Verification of water tightness in accordance with ISO 20653
- Assessment of the joint after each conditioning step (repeat assembly, temperature cycles, ...)
- Selection of sealing solutions (metallic washers, chemical sealants)
- Prevention of corrosive undercutting

Learn more about Tightness Testing:

Website

Onepager

WhitePaper

Technical Cleanliness

Technical cleanliness is more than the “absence of dirt” - it means taking a holistic view of the overall process.



Your Benefits

- Clean, reproducible components for critical applications
- Minimization of component failure caused by particles
- Reliable and standards-compliant component handover

Scope of Services

- Consulting already during the project phase
- Cleanliness testing in accordance with VDA 19.1
- Gravimetry and particle-size analysis
- In-house cleaning-process
- Cleanliness-oriented transport packaging (optionally ESD-suitable)
- Demagnetization

Learn more about Technical Cleanliness:

Website

Product Brochure

Onepager

Joining Analyses

Analysis of joining points in sheet-metal assemblies under production-like conditions - for friction welding, resistance welding, press-fit and flow-drill forming elements.



Your Benefits

- Complete evaluation of the joint (shear and head tensile tests)
- Optimized joining parameters for stable processes
- Neutral, independent investigation

Scope of Services

- Tests on stationary equipment or in a robot cell
- DAkkS-calibrated sensor technology
- Microsections and microscopy
- Combination with tightness testing
- Process analysis using thermal imaging and high-speed cameras

Learn more about Joining Analyses:

Website

Our laboratories are committed to neutrality and impartiality by a declaration of independence issued by management.

Bolted Joint Analyses

Evaluation of metric and thread-forming screw joints with regard to friction coefficients, preload forces and locking behavior.



Your Benefits

- Reduction of assembly and operational risks
- Standards-compliant, reproducible results
- Clarity regarding preload force, locking behavior and friction coefficients

Scope of Services

- Testing to VDA 235-203, DIN EN ISO 16047, DIN 7500-1, DIN 267-27/28/30/31, DIN EN ISO 2320, among others and to customer specifications
- DAkkS-calibrated measuring equipment
- Dynamic locking characteristics of fasteners in accordance with DIN 65151 or DIN 25201-2
- Measurement of preload force by load cell or ultrasound

Learn more about Bolted Joint Analyses:

Website

WhitePaper

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Calculation

Analytical evaluation of assembly and operational behavior as early as the development phase thereby providing a sound basis for design decisions.



Your Benefits

- Prediction of assembly and operational behavior as early as the design stage
- Reduction of real-world test loops
- Assessment of tolerances and variations

Scope of Services

- For metric and thread-tapping screw connections in metals and plastics
- Application of recognized standards such as VDI 2230 and the FKM guideline
- Interaction with the simulation
- Recommendations for suitable core holes and tube geometries
- Models based on extensive experimental data

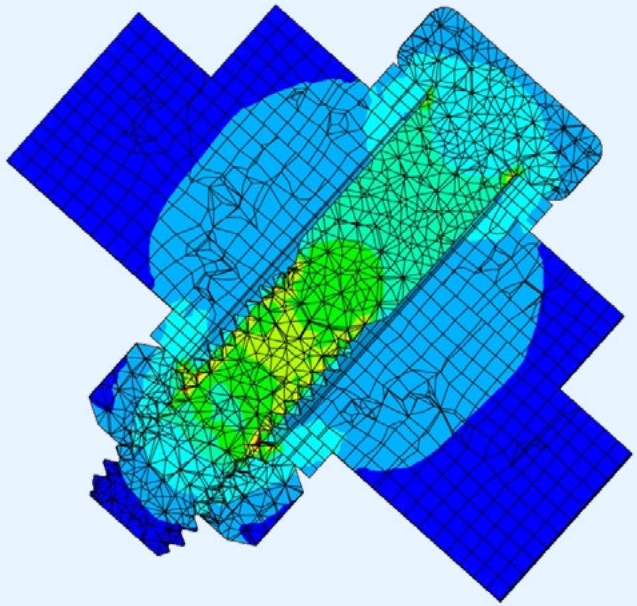
Learn more about Calculation:

Website

Product Brochure

Simulation

Process and geometric optimization of components, assemblies, or fasteners with regard to assembly and operating conditions.



Your Benefits

- Geometric and strength optimization early in the design phase
- Evaluation of complex screw-fastening and joining processes
- Variant comparison and process understanding

Scope of Services

- Structural mechanics for the optimization of fasteners and components
- Forming simulation for the evaluation and optimization of mechanical joining processes
- Interaction with analytical tools
- Integration with standard guidelines and analytical methods

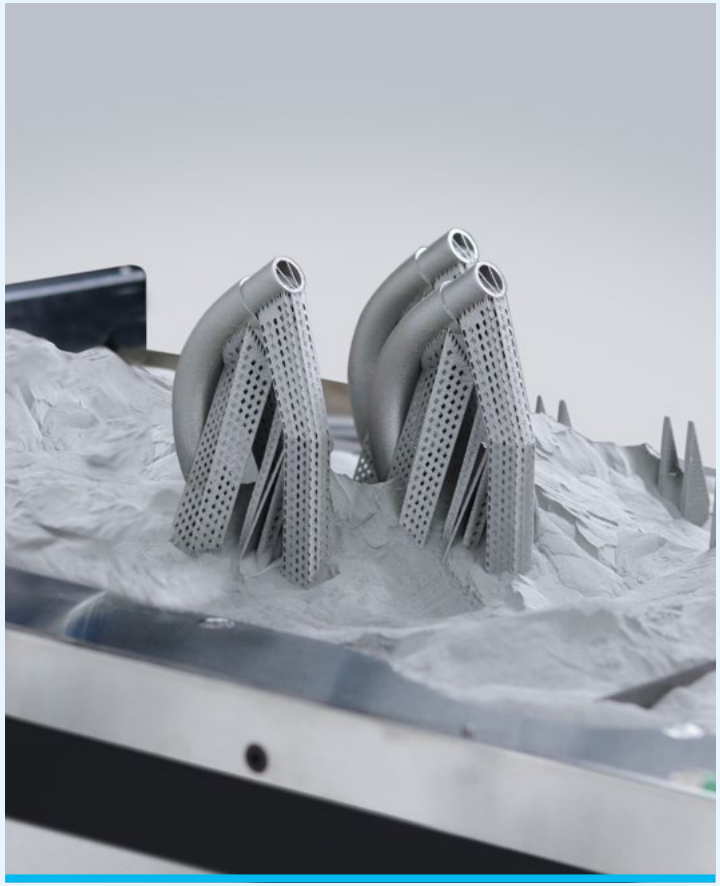
Learn more about Simulation:

Website

Product Brochure

3D-Printing

Faster Development and Maximum Design Freedom: Metal 3D Printing for Prototypes and Mass Production.



Your Benefits

- Produce complex geometries without tools
- Implement design variations quickly
- Produce individual and production parts with precision, repeatability, and without tooling costs

Scope of Services

- Complete production from a single source – from data preparation through printing to post-processing
- Customized consulting on design, material selection, and optimization for 3D-print-ready design
- Parts up to 275 x 275 x 420 mm
- Wide selection of materials: stainless steel (1.4404 316L), tool steel (AMPO M789), case-hardened steel (1.7131), and Inconel 718

Learn more about 3D-Printing:

Website

Onepager

WhitePaper

Functional Samples

Near-production functional samples in the shortest possible time to immediately validate feasibility, functionality, and design variations.



Your Benefits

- Production-ready functional sample parts in the shortest possible time
- Validation of feasibility, functionality, and design variations
- Ideal for prototyping and pre-production approvals

Scope of Services

- Available for the entire ARNOLD® product portfolio
- Fasteners and cold formed parts
- Faster delivery times compared to mass production

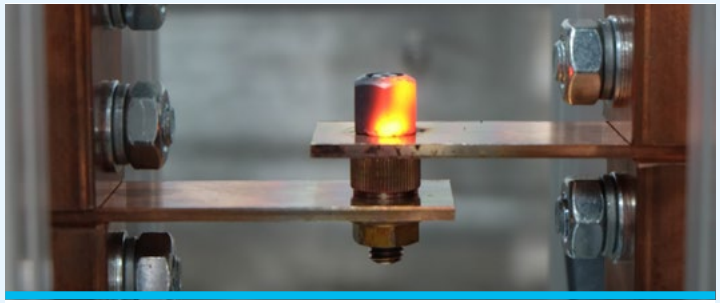
Learn more about Functional Samples:

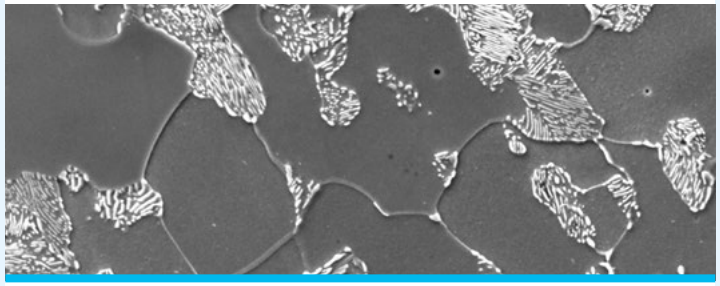
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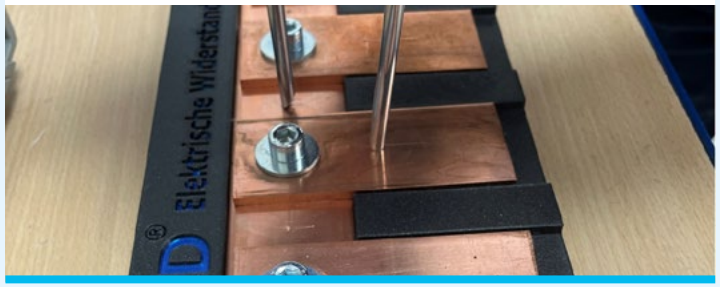
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Component Conditioning and Analysis

Empirical evaluation of mechanical, electrical, and corrosion properties, in order to transparently assess the actual behavior of components.







Your Benefits

- Empirically validated evaluation of mechanical, electrical, and corrosion-related properties
- Customized analyses
- Standardized tests

Scope of Services

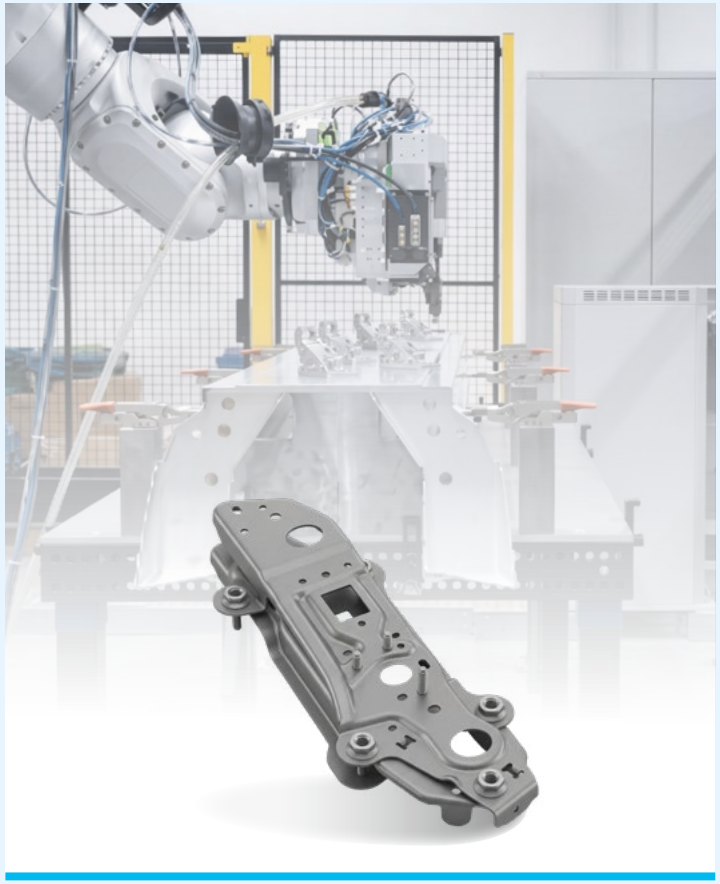
- Salt spray tests in accordance with DIN EN ISO 9227, industrial climate tests in accordance with DIN 50018, as well as numerous other customer-specific tests at our partner laboratories
- Electrical conductivity and contact resistance tests
- Microstructural analyses (including SEM)
- Mechanical tests
- Temperature and humidity aging tests

Learn more about Component Conditioning and Analysis:

Website

Small-volume and pre-production parts

Ready-to-install assemblies manufactured using processes similar to those used in series production, in order to test products under real-world operating conditions at an early stage.



Your Benefits

- Ready-to-install sheet metal assemblies, stamped and bent parts
- Validation under real-world operating conditions
- Fasteners, engineering, and manufacturing – all from a single source

Scope of Services

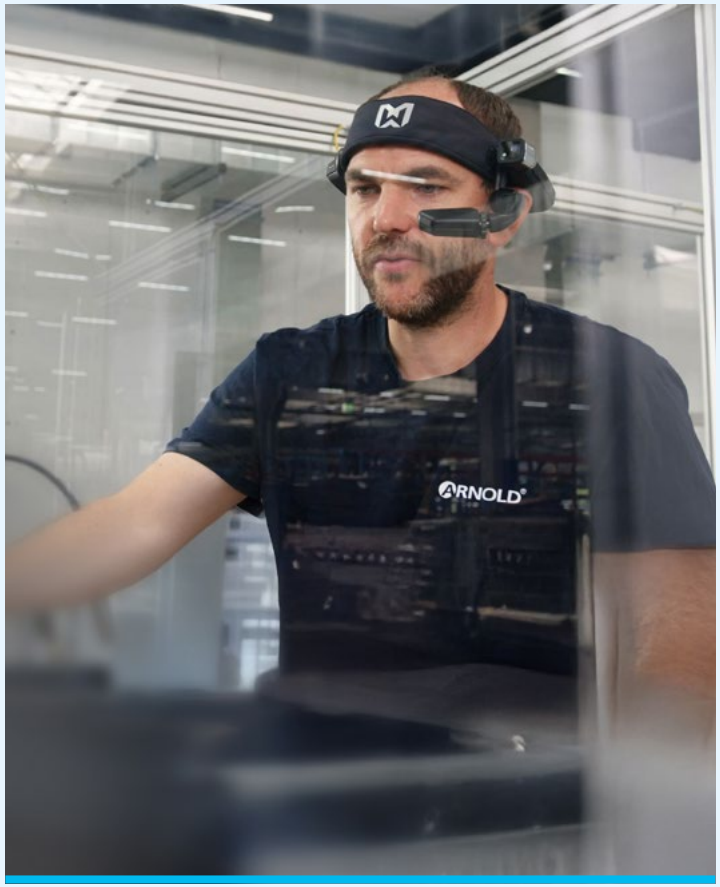
- Manufacturing of small-volume and pre-production parts as well as mass production
- All ARNOLD joining processes: pressing in, self-piercing, resistance element welding, friction element welding, flow-drill forming
- Production possible in robotic cells and in progressive die assemblies
- Universal tooling available for rapid implementation
- In-house fixture design with manufacturing

Learn more about
Small-volume and pre-production parts:

Contact

After Sales Service

Ensure the stable operation, modernization, and support of processing technology, so that processes remain reliable and efficient over the long term.



Your Benefits

- Maximum system availability and high process stability
- Updates and retrofits for older equipment
- Certified training courses

Scope of Services

- Professional installation, commissioning, and training
- Spare parts delivery and remote support
- For the entire portfolio of ARNOLD® processing technology
- Use of virtual reality

Learn more about After Sales Service:

Website

Mobile Services

Analyze and optimize applications directly on-site to ensure production, quality, and process stability without any detours.



Your Benefits

- Rapid problem solving under real-world process conditions
- Ensuring a smooth transition to serial production
- Direct knowledge transfer to your team

Scope of Services

- Application testing right at your facility
- Failure analysis and optimization
- Ramp-up service: Support during serial startup
- Optimization of assembly strategies
- Technical seminars (online or in person)

Learn more about Mobile Services:

Contact



ARNOLD®
BlueFastening Systems

The ARNOLD GROUP

www.arnold-fastening.com

Wherever customers need us.

ARNOLD – this name is internationally renowned for efficient and sustainable fastening systems at the highest level.

With a foundation of many years of expertise in the production of intelligent fastening systems and very complex extruded parts, the ARNOLD GROUP has developed over a number of years into a comprehensive supplier and development partner for complex fastening systems. With our positioning of "BlueFastening Systems", this development process will continue under a united and harmonised structure. Engineering, services, fasteners and functional parts, together with feeding and processing systems, all from a single source – efficient, sustainable and international.

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