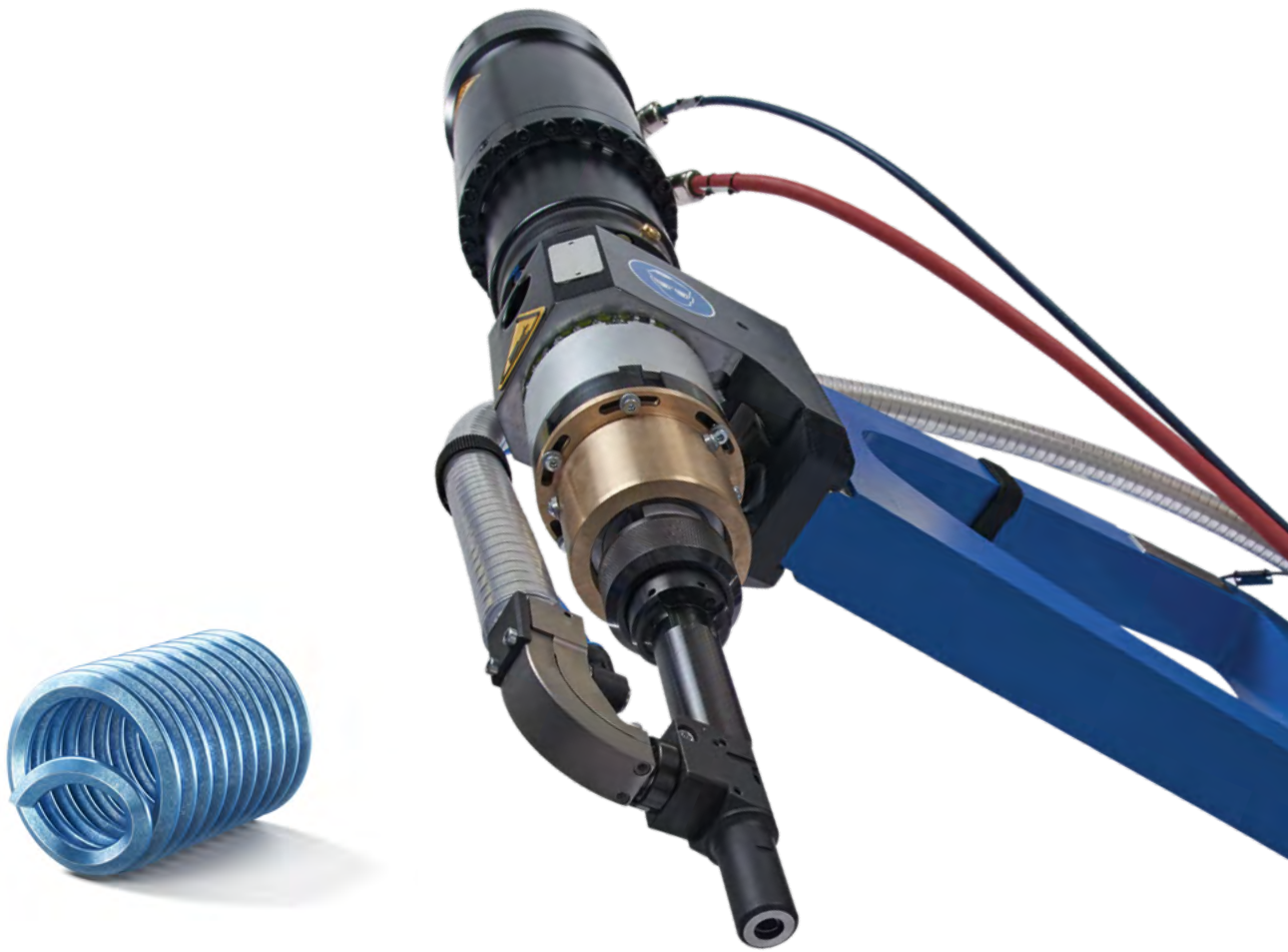


BÖLLHOFF

Product Guide

360° Joining Technology



Welcome.

We are your expert
for fastening
and assembly.



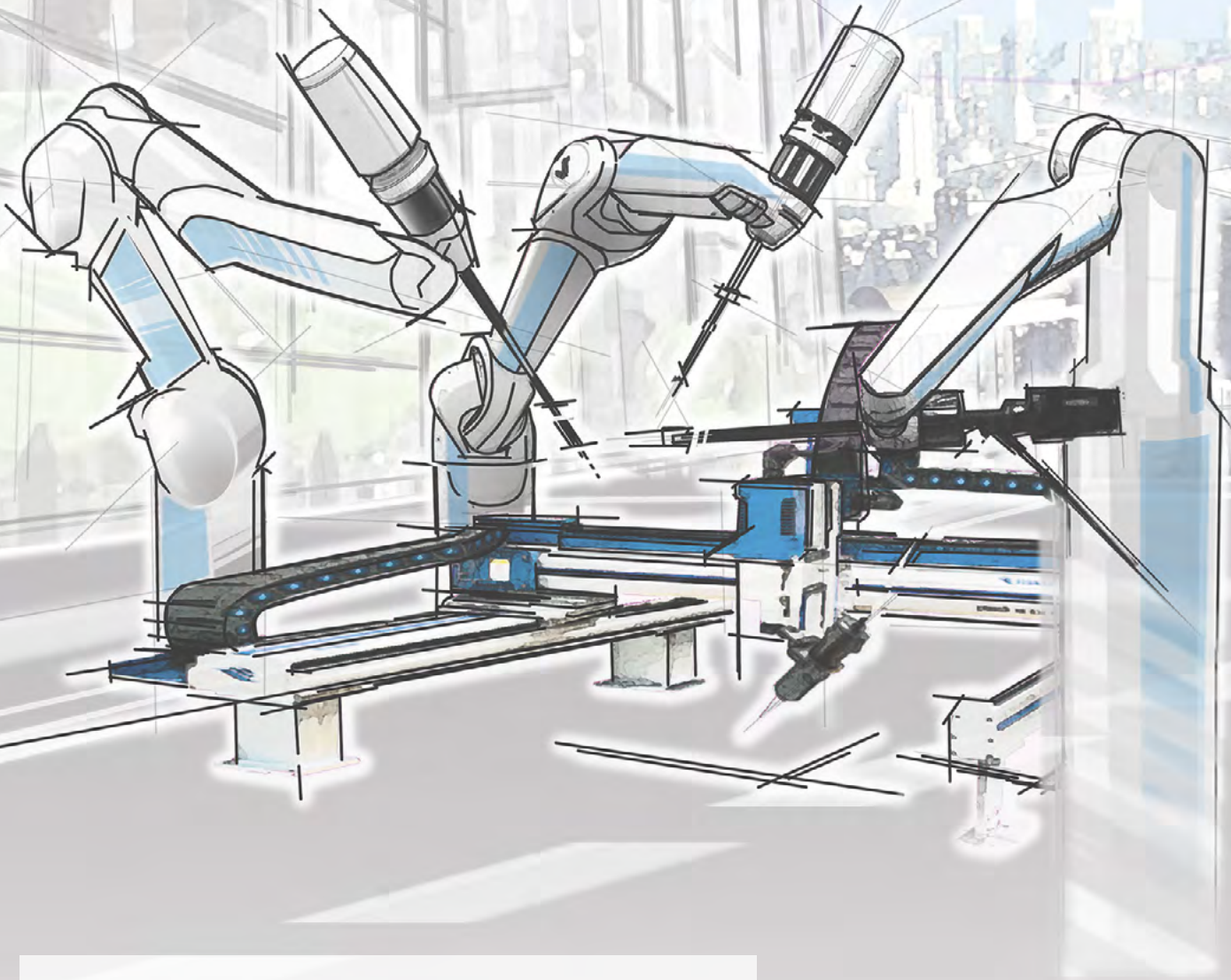
We are right where you need us – by your side.

Each economic sector is unique and has its very own requirements. The requirements are changing fast, new developments emerge while older ones are disappearing. For more than 140 years, we have been dealing with such peculiarities. More than 3,300 employees at 43 locations in 25 countries ensure customer orientation and know-how transfer.

Do not hesitate to contact us –
your partner to succeed in joining.

Tailor-made solutions thanks to customer-specific industry know-how

Whether in the automotive or aeronautical industry or other industries: technology from Böllhoff ensures durable joints everywhere. And we cover a wide range: We offer separate fasteners such as standard bolts, own brands and individual special parts, but also complete assembly systems and individually developed automation solutions.



Your expert for the industry

No matter what industry you are working in, whether it is shipbuilding, rail vehicle manufacturing, the electronic industry, plant engineering or mechanical engineering: We support you with all questions about fastening technology. The industries we supply are just as diverse as our joining solutions.

Our fasteners travel the oceans and are built into special machinery and wind turbines.

We listen to your wishes. Contact us – our high-strength joints withstand even turbulent times.

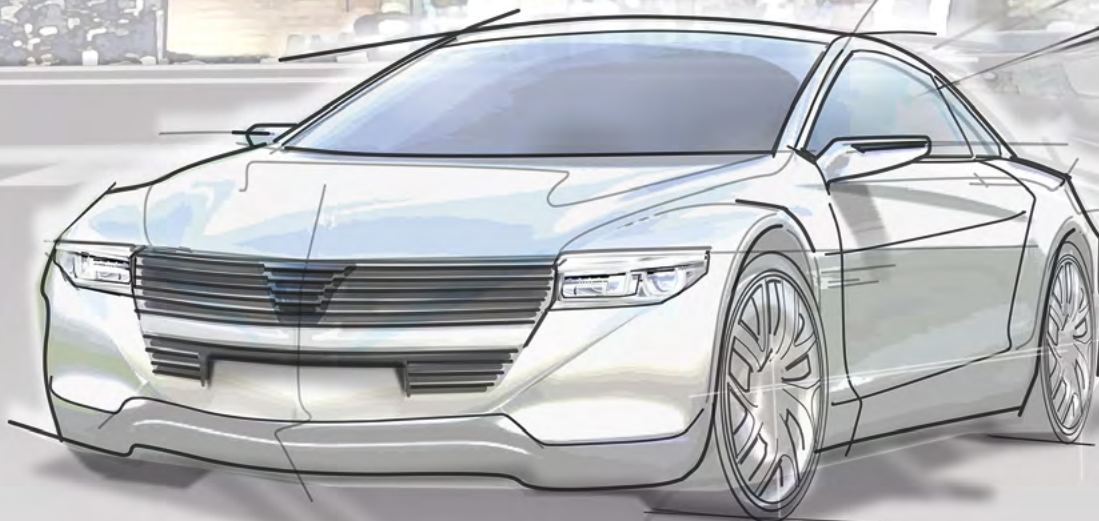


Your expert for the aerospace industry

Who doesn't want to fly safely? We also take a second look and support you when it comes to fulfilling the requirements of the current development trends of the aerospace industry.

To increase the energy efficiency and save resources, aeronautical engineers and engine manufacturers also systematically analyse and optimise the production processes. For decades, we have been a partner for the industry and offer special joining solutions.

Get on the early plane with us and give your developments the necessary drive.



Your expert for the automotive industry

The automotive industry continues to be among the most important economic sectors and is around the world regarded as the source of many product and process innovations — also for many other industries. Lightweight construction, alternative propulsion technologies, gradual development of safe automated and connected driving: We are familiar with today's challenges in the automotive industry.

Get in and shape current and future mobility concepts with us.

Thread reinforcement

HELICOIL® Thread inserts



Wire thread inserts for high-strength joints in low-strength metallic materials.

Your benefits at a glance

- High thread strength
- Increase in quality and value
- Wear-resistant, low and constant thread friction
- High-strength
- Corrosion- and temperature-resistant

KOBSERT® Threaded bushes



Thread inserts for vibration- and torsion-resistant nut threads in low-strength metals.

Your benefits at a glance

- High-strength and wear-resistant
- Vibration- and torsion-resistant
- Suited for thread repair
- Sealing function (variant with sealing ring)

Thread locking

HELICOIL® Locknuts



Special nuts with screw loss protection for high-strength, process-reliable joints.

Your benefits at a glance

- Even clamping torque in repeated screwings
- Uniform load and stress distribution
- High temperature resistance
- Constant thread friction

Thread creation

RIVKLE®
Blind rivet nuts
and studs



Blind rivet nuts and studs to fasten high-strength nut and stud threads on thin-walled components.

Your benefits at a glance

- Stable thread on thin-walled components
- Installation in case of one-sided accessibility (blind installation)
- Flexible use in every production step
- No thermal stress on the workpiece – and therefore no warpage

AMTEC®
Thread inserts



High-strength brass thread inserts for plastic components – after moulding.

Your benefits at a glance

- Shorter moulding cycles
- Reduced manufacturing costs for plastic components
- Secure, stress-free anchorage
- High pull-out and torsion values
- Unrestricted number of reuses as opposed to self-tapping screws

IMTEC®
Metal inserts



Metal inserts especially for in-moulding with thermoplastics and thermoset plastics as well as for use in CFRP composite materials.

Your benefits at a glance

- Maximised useful thread
- Corrosion- and acid-resistant
- Increased technical cleanliness (minimised residual dirt)
- High pull-out strength
- Reduced component weight

Thread creation

KAPTI NUT®
Insert nuts

High-strength, captive joints of thin steel, aluminium or stainless steel sheets.



Your benefits at a glance

- Captive threaded fastener
- High mechanical strength
- Use from both sides
- Single-process insertion

IMTEC® HR
Metal inserts

Fasteners with high mechanical strength for composite materials.



Your benefits at a glance

- High mechanical strength
- Functional joint achieved with only one fastener
- Optimisation of in-moulding processes
- No point reinforcement of the customer component required

High-speed joining

RIVTAC®
Tacks

High-speed tacks for mixed joints, multiple-layer joints and hybrid joints.



Your benefits at a glance

- Joining without pre-punching in case of one-sided accessibility
- Minimised joining and cycle times
- Easy joining of high-strength materials
- Perfect in combination with adhesive bonding

Riveting technology

RIVKLE®
Blind rivet nuts
and studs



Blind rivet nuts and studs to fasten high-strength nut and stud threads on thin-walled components.

Your benefits at a glance

- Stable thread on thin-walled components
- Installation in case of one-sided accessibility (blind installation)
- Flexible use in every production step
- No thermal stress on the workpiece – and therefore no warpage

RIVQUICK®
Blind rivets



Strong and high-strength permanent joints of metal or plastic components.

Your benefits at a glance

- Joining of thin-walled components
- No thermal stress on the workpiece – and therefore no warpage
- Also for coated components
- Wide range of fastener materials (aluminium, steel, stainless steel, etc.)

RIVSET®
Self-pierce rivets



Mechanical, strong joints of similar or different types of materials.

Your benefits at a glance

- High-strength joints
- For different material thicknesses and tightnesses
- Reproducible joining result
- No pre-punching
- Liquid- and gas-tight

Adhesive technology

ONSERT®
Bonded fasteners

Fast adhesive bonding of most diverse functional elements with a socket of transparent plastics without loss of performance using light-curing adhesive.



Your benefits at a glance

- Strong joint immediately after exposure
- Short curing times (< 4 seconds)
- Fasteners do not become apparent on plastics or thin-walled components (design)
- Bonding to most diverse materials
- Flexible use, also after surface treatments (paint/CDC)

Quick release technology

QUICKLOC® Light
Quick releases

Clamp, quarter-turn and press fasteners for repeatedly detachable joints.



Your benefits at a glance

- Quick assembly installation without tools
- Opens counterclockwise and clockwise
- Closes easily through turning or axial pressure
- Resistant to soiling

QUICKLOC® Solid
Quick releases

Fasteners for repeatedly detachable joints.



Your benefits at a glance

- Quick opening and closing
- Simple installation
- Easy handling
- Perfect solution for large-scale production

Decoupling

SITEC® Vibration decoupling

Fastening elements for vibration and noise decoupling.



Your benefits at a glance

- Vibration and noise decoupling
- Adjustable parameters for a flexibility in design (material, joining solution)
- Fast and easy

SNAPLOC® Decoupling plug-in connections

Fasteners and fastening systems for vibration and noise decoupling.



Your benefits at a glance

- Fast and easy installation/removal
- Vibration and noise decoupling
- Tolerance compensation in the centre distances
- Variable fastening options
- Easy integration

Tolerance compensation

FLEXITOL® Tolerance compensation systems

An economic engineering solution for continuous tolerance compensation.



Your benefits at a glance

- High performance reliability
- Only one-sided accessibility required
- Easy integration into different applications
- High-end product quality
- Fast and easy installation
- Warpage prevented during installation

Direct screwing

TEPRO® K' in K'
Screwing solutions

Screws, inserts and screw systems as a plastic fastening solution for plastics.



Your benefits at a glance

- No corrosion
- Chemical resistance
- Electromagnetic compatibility
- Full-plastic solution for reduced weight
- Reliable screw joint

Sealing technology

SEAL LOCK®
Sealing nuts

Sealing against gaseous and liquid media under high pressure.



Your benefits at a glance

- One-piece fastener
- Double-sealing function
- High preload force
- Reusable
- Temperature-resistant between -40 °C and 110 °C

Repair Kits

HELICOIL® Kits
Thread repair

HELICOIL® Plus thread inserts can be used to quickly repair destroyed threads.



Typical fields of application

- Oil drain threads
- Spark plug threads
- Lambda probe threads
- Wheel bearing threads
- Injector screw threads

Resistance welding technology

WELTAC® Welding element

High-strength joints for modern multi-material car body design.



Your benefits at a glance

- High-strength joints
- Use of existing, conventional spot-welding equipment
- On a single body construction line, different multi-material designs can be flexibly combined
- Wide application range regarding material qualities and thicknesses
- Processing with a proven, electric-hydraulic RIVSET® system

Customer-specific development parts

TEPRO® and ELASTEC® Customer-specific thermoplastic and elastomeric development parts and assemblies

Solutions for almost every application.

We are just the right point of contact for customised solutions that also fulfil high requirements. We develop and produce these products for the automotive industry, the aviation industry and many more.

Your benefits at a glance

- Focus on individual customer benefit
- Customised products
- In-house development, design and prototyping
- Modern tool manufacture
- Modern injection moulding machines



Please see our corresponding product catalogues for detailed information.
Please do not hesitate to contact us for a personal consultation.

Assembly technology

We also supply the assembly solutions for our fasteners. In the following you find a selection of our systems.

HELICOIL®

Type E-PSG electrical straight screwdriver with leader cartridge

Fast and precise processing of all HELICOIL® types.



Your benefits at a glance

- Automatic switchover upon reaching the insertion depth
- Continuous adjustment: speed/torque
- Existing tool systems can be used (exchange unit)
- Easy handling
- Ergonomic and compact design
- Low-noise operation

QUICKSERT®*

Pneumatic installation tool type P-S 1216

Fast processing of self-tapping thread inserts in thermoplastics and thermosets.



Your benefits at a glance

- Improved run-out accuracy
- Continuously adjustable shut-off clutch
- Easy handling
- Low-maintenance

* QUICKSERT® is part of the AMTEC® product group.

ONSERT® Portable Mini

Battery-powered LED curing lamp

Manual processing of ONCERT® fasteners.



Your benefits at a glance

- Ergonomic two-component housing: safe-grip and anti-slip
- Optimised curing due to adapted lamp geometry
- Process monitoring via USB port



RIVKLE®
 Pneumatic-hydraulic
 setting tool
 RIVKLE® NEO P107



Fast and force-monitored processing
 of blind rivet nuts and studs.

Your benefits at a glance

- 36 RIVKLE® blind rivet nuts/minute (max.)
- Only one force setting for variable component thicknesses
- Long life due to optimal force setting
- Multiple riveting possible
- Particularly lightweight (2 kg)
- Setting force-controlled
- Flexible and versatile

RIVQUICK®
 Pneumatic-hydraulic setting tool
 RIVQUICK® P2000



Fast processing of blind rivets.

Your benefits at a glance

- Reliable
- Lightweight and ergonomic
- Long life
- Compact design





RIVTAC®



Fully automatic system with process monitoring RIVTAC® Automation P

Innovative high-speed joining.

Your benefits at a glance

- Maximum flexibility in production planning
- Modular design for flexible positioning
- Quick and easy maintenance
- Compact setting tool for ideal joining point accessibility
- Short reaction times



RIVCLINCH®

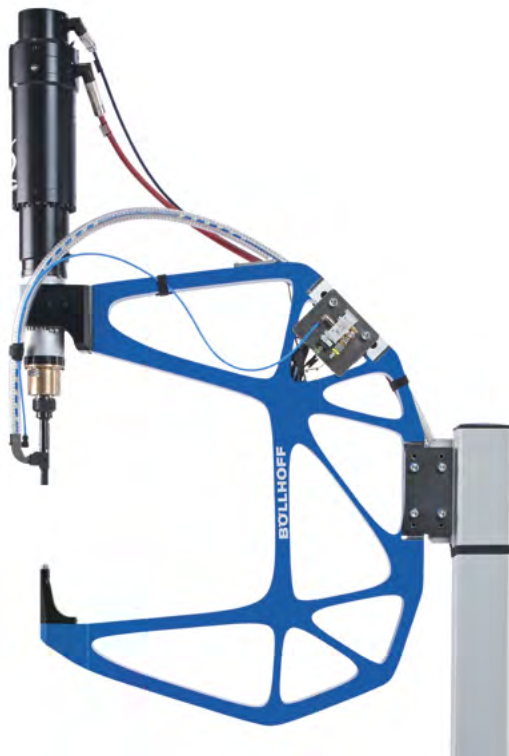


Modular electrical lightweight system RIVCLINCH® Automation E

Joining without fastener with no damage to the surface.

Your benefits at a glance

- High joint quality and a wide application range
- Low-maintenance electrical drive with 67 kN force capacity
- Compact, robust and reduced-weight with C-Frame Select
- Modular design with mechanical strippers and punches in various sizes for different joining forces
- One supply unit for different joining technologies – self-pierce riveting and clinching
- Flexible due to quick and easy retooling to vary between the RIVSET® and RIVCLINCH® technology
- Wide application range (aluminium – steel – stainless steel)



RIVSET®



Electrical self-pierce riveting
RIVSET® Automation E

Efficient processing of semi-tubular rivets.

Your benefits at a glance

- Long life at maximum availability
- Minimum maintenance
- Modular and comprehensive machine designs
- Machine configuration via plug & play
- Remote access to the control software
- Fast high-performance CPU
- Path-controlled process with 7th axis function included in control



RIVKLE®



Pressure-controlled, deflection-
monitored tool with integrated quality
control RIVKLE® EPK C

Process-monitored setting of RIVKLE® blind rivet nuts and studs.

Your benefits at a glance

- 100 % process control
- Pressure-controlled tool
- Suited for large-scale production
- Multilingual touchscreen
- Adjustable alarm and safety devices

We are looking forward to our next **joint success story.**



Your partner to succeed in joining – and what that means for you:

Innovation and development partner

- Modern methods, organisational forms and processes
- Trend analyses
- Research cooperations
- Open innovation
- In-house research and development
- Application engineering and consulting
- Customer-specific development parts
- Manufacture of samples and prototypes
- Value analyses

Procurement and assembly partner

- Engineering competence thanks to in-house production
- Fourteen modern production facilities worldwide
- Production methods
 - injection moulding
 - turning
 - cold working
 - wire winding
 - mechanical and plant engineering
- Acceleration of your assembly processes
- Wide range of manual and automated assembly solutions

Logistics and quality partner

- Supply chain solutions
- Quality management according to IATF 16949
- Quality management according to EN 9100
- Distinctive quality and environmental awareness
 - accreditation of the in-house laboratory according to DIN EN ISO/IEC 17025
 - certification according to DIN EN ISO 14001
- Regular audits through customers

Distributor and service partner

- Efficient consulting, assistance and service
- Expert specialists on site
- Proximity to customers thanks to global presence
- After sales service
- Expert seminars, training sessions and workshops
- Online seminars
- Customer in-house fairs

BÖLLHOFF

Passion for successful joining.

Böllhoff Group

Innovative partner for joining technology with assembly and logistics solutions.

Find your local partner at www.boellhoff.com or contact us at fat@boellhoff.com.