

# BÖLLHOFF

## 360° Joining Technology

Joining solutions, processing systems and services



# Passion for successful joining.



# So what does this mean for you?

As a family-run business, we have been creating successful joints since 1877.

Whenever you want to join components or need special development parts, we are by your side as a competent partner. For that, we rely on our enthusiastic team who have management- and product-specific know-how, on our

## INNOVATION CAPACITY

as well as on our 360° Joining Technology which stands for a wide portfolio of joining solutions, processing systems and services – standardised or as individual as yourself.

With the proximity to our customers we know the specific requirements from all industries and want to support you to be

## SUCCESSFUL

Our philosophy: customer-oriented, industry-specific, worldwide.

According to the requirement, we accompany you all along your value chain, never losing the focus on cost optimisation.

And what would all this be worth without our company's vision, the

## PASSION

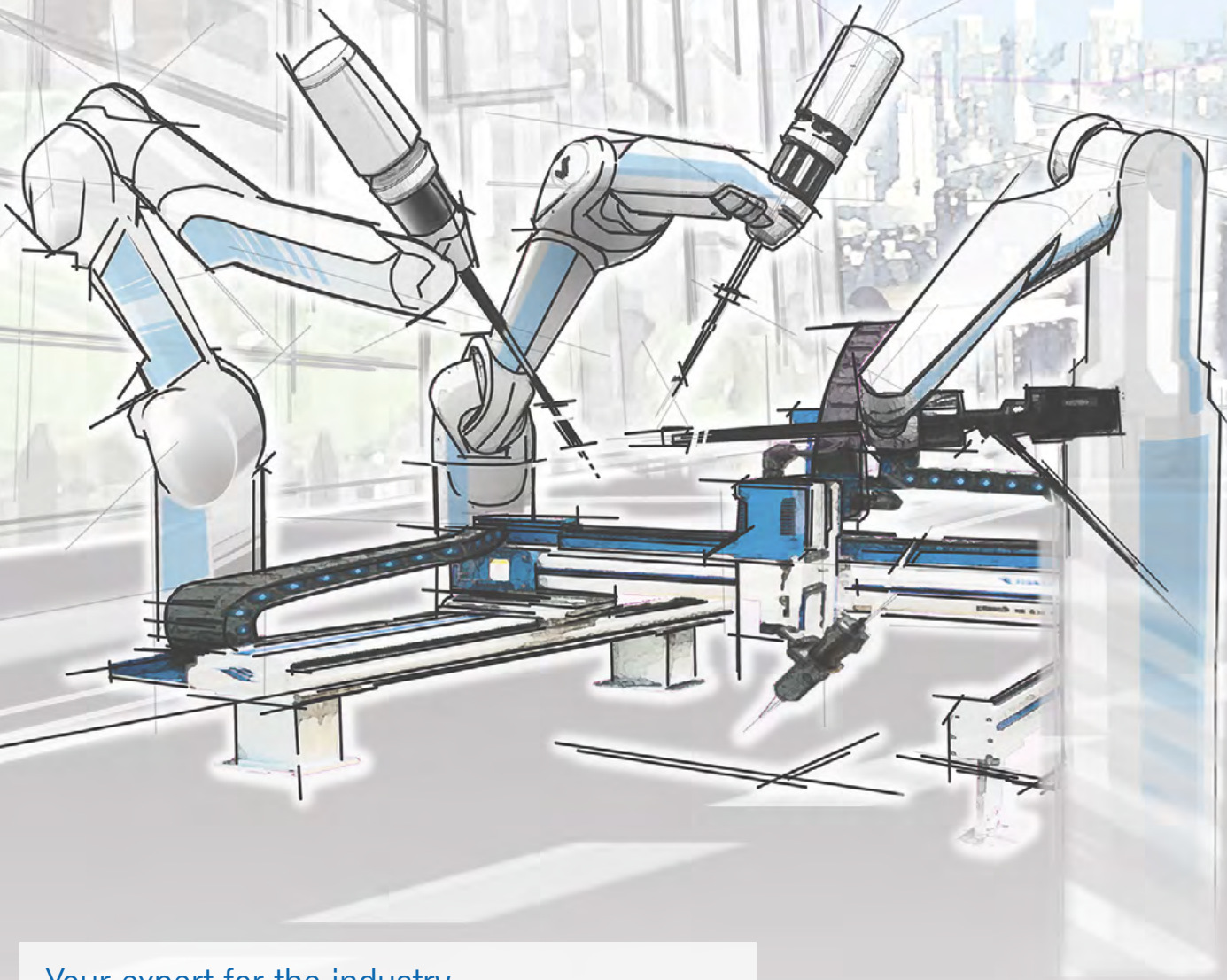
for successful joints?

Understood and put into practice not only with regard to the products, it is the foundation of our joint success.

# Be inspired.

# 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.



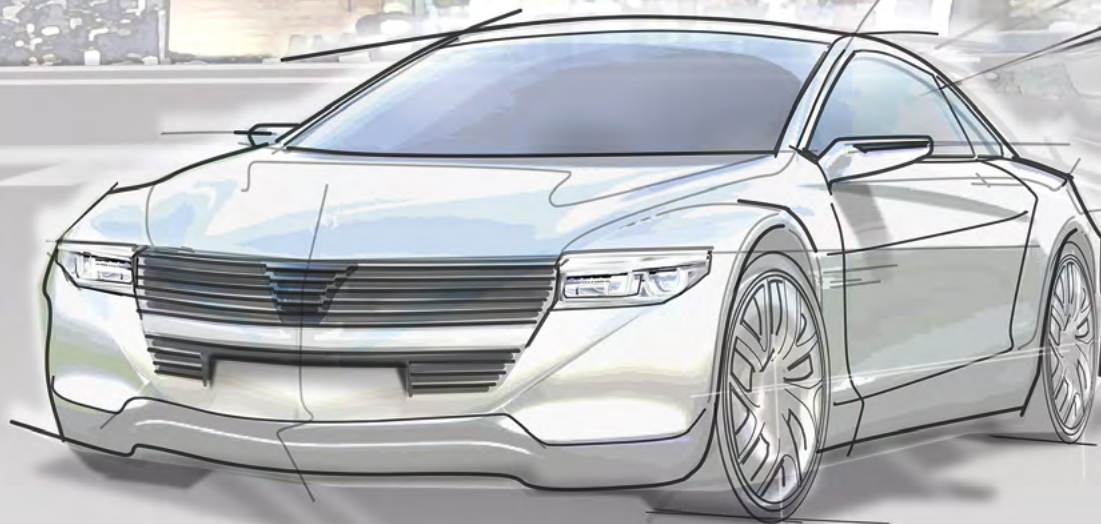


## Your expert for the aerospace industry

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.



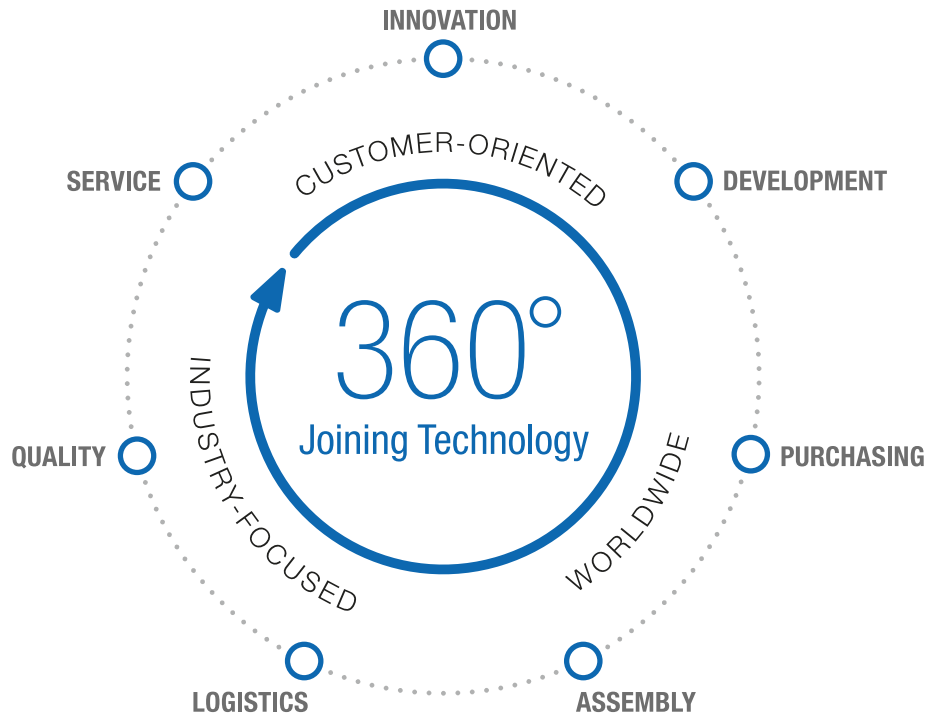
## Your expert for the automotive industry

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.



Overview of our competencies – one by one



## Innovation and development partner

As an innovation partner, we develop product ideas and implement them in cooperation with you. In that process, we score through our systematic innovation management. We are your development partner striving to understand your requirements to the last detail and translate them into engineering solutions.

- 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

With us as your procurement partner, you can reduce the procurement and inventory cost for fasteners. As an assembly partner, not only do we supply fasteners, but we also provide you with the matching assembly systems — all from a single source.

- Engineering competence thanks to in-house production
- Thirteen 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

Overview of our competencies – one by one



## Logistics and quality partner

As your quality partner, we are continuously refining our products and processes according to your demand. For that, we rely on our certified quality management. As a logistics partner, we take care of the whole delivery process for fasteners — from the material planning to the supply to the line.

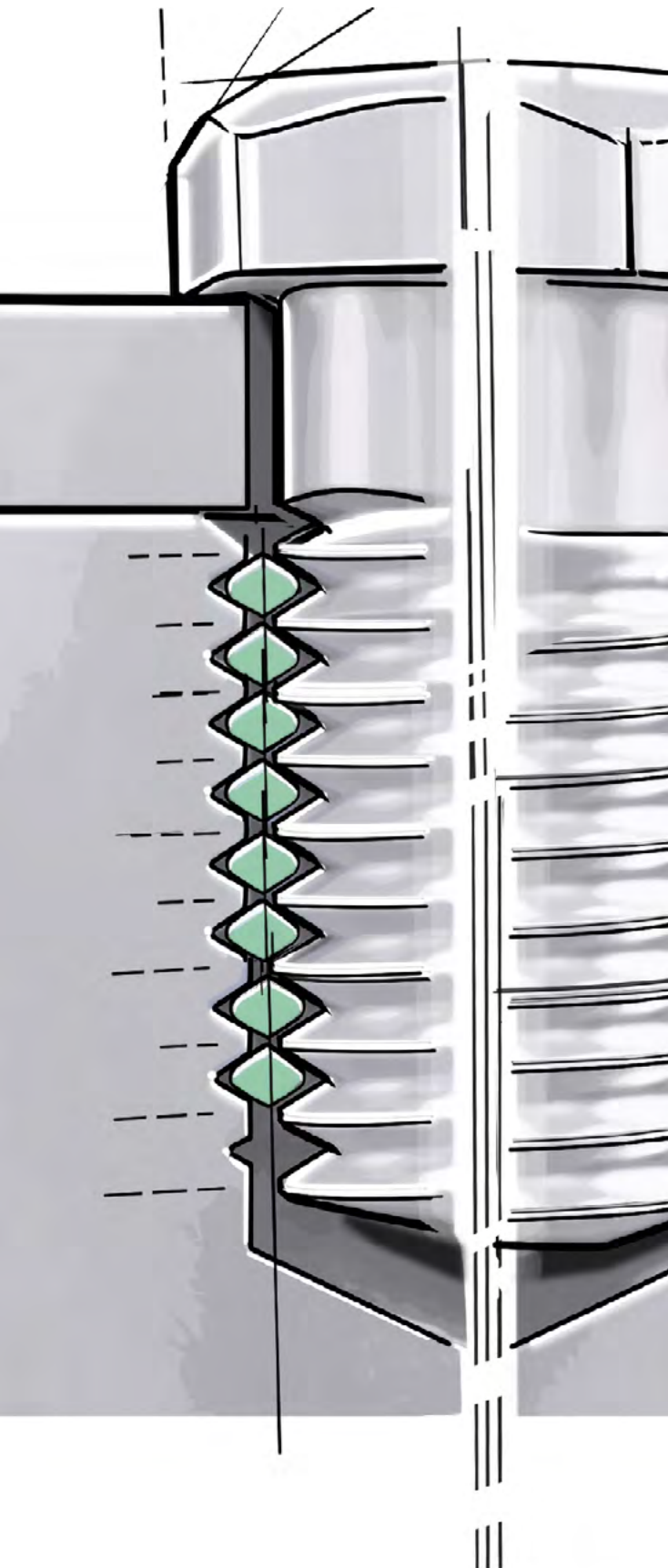
- Supply chain solutions
- Quality management according to IATF 16949
- Quality management according to EN 9100
- Regular audits through customers
- Distinctive quality and environmental awareness
  - Accreditation of the in-house laboratory according to DIN EN ISO/IEC 17025
  - Certification according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

## Service and distribution partner


Thanks to our worldwide distribution network, every customer has a special contact person who will be glad to discuss all wishes and requirements. As a service partner, we also offer worldwide technical training, maintenance and repair – with 24/7 support so that you are not left on your own in critical cases.

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

Explore our joining solutions.





<b>Fasteners</b> .....	<b>10</b>
Sealing .....	10
Direct screwing .....	10
Decoupling .....	10
Thread technology .....	11
Thread creation .....	11
Thread locking .....	12
Thread reinforcement .....	13
High-speed tack setting .....	13
Adhesive bonding .....	14
Customer-specific development parts .....	14
Riveting technology .....	15
Blind rivet technology .....	15
Self-pierce riveting .....	15
Repair kits .....	16
Quick release technology .....	16
Tolerance compensation .....	17
Resistance welding .....	17
 <b>Processing systems – assembly technology excerpt</b> .....	 <b>18</b>
 <b>InfoPoint</b> .....	<b>24</b>

Our InfoPoint provides additional information in the form of further brochures and/or videos at the end of this brochure.

## 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

## 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

## 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

## Decoupling

### **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

## 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

## Thread creation

### **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

### **KAPTI® Rivet** 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

## 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 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)

## 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

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)

Customer-specific development parts

**TEPRO®**  
Engineering plastic parts,  
hybrid components 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



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

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

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

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





## 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

## 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

## 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 ONSERT® 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®**

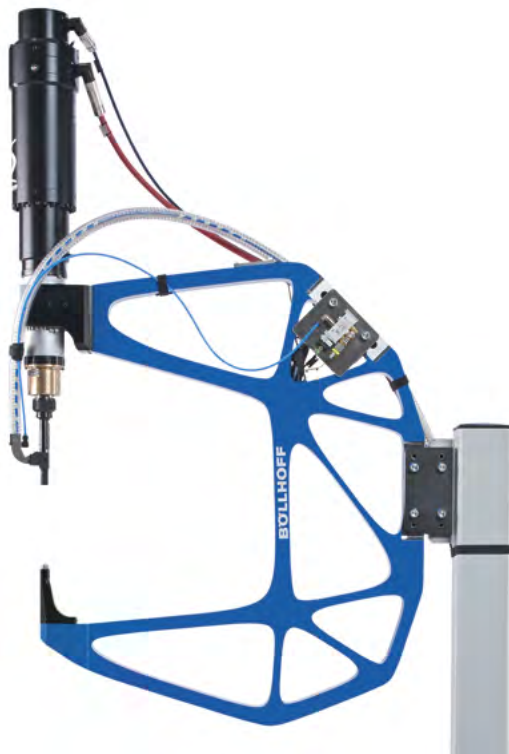


Modular electrical lightweight system RIVCLINCH® Automation E

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 merge Tradition  
and future  
because future needs  
origins.

Trust our many years of international experience and innovation capacity.

To us, every challenge is at the same time a chance to convince through performance. That is how ideas become real innovations and innovations result in the formation of new markets.

We invite you to discuss in person the individual perspectives we can offer you.

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



**Product catalogues****SEAL LOCK®**

Sealing nuts for high-strength screw joints  
Catalogue No 0500

<https://www.boellhoff.com/en/pdf/seal-lock>

**TEPRO® K' in K'**

Threaded plastic fasteners solutions for plastic assemblies  
Catalogue No 4330

<https://www.boellhoff.com/en/pdf/tepro-k-in-k>

**SNAPLOC®**

Vibration- and noise-decoupling plug-in connections  
Catalogue No 4350

<https://www.boellhoff.com/en/pdf/snaploc>

**SITEC®**

Fastening elements for vibration and noise decoupling  
Catalogue No 2500

<https://www.boellhoff.com/en/pdf/sitec>

**RIVKLE®**

Blind rivet nuts and studs  
Catalogue No 2307

<https://www.boellhoff.com/en/pdf/rivkle>

**AMTEC®**

Precision thread inserts for after-moulding joining in plastic components  
Catalogue No 0200

<https://www.boellhoff.com/en/pdf/amtec>

**IMTEC® CO**

Thread inserts for in-moulding processes  
Catalogue No 0225

<https://www.boellhoff.com/en/pdf/imtec>

**KAPTI® Rivet**

Rivet nuts for sheet metal components  
Catalogue No 2291

<https://www.boellhoff.com/en/pdf/kapti>

**HELICOIL® locknuts**

Special nuts with screw lock  
Catalogue No 0560

<https://www.boellhoff.com/en/pdf/helicoil-locknuts>

**HELICOIL® Plus thread technology**

Intelligent system solution comprising a fastener and efficient processing for high-strength screw joints  
Catalogue No 0100

<https://www.boellhoff.com/en/helicoil-plus>

**KOBSERT®**

Thread inserts for metals  
Catalogue No 1000

<https://www.boellhoff.com/en/pdf/kobsert>

**RIVTAC® Automation P**

High-speed joining – innovative and flexible  
Catalogue No 6810

<https://www.boellhoff.com/en/pdf/rivtac-automation-p>



## Product catalogues

**ONsert®**

Quick and process-reliable bonding of fastening elements with light-curing adhesives  
Catalogue No 0250

<https://www.boellhoff.com/en/pdf/onsert>

**TEPRO®**

Engineering plastic products and subassemblies – tailor-made, precise and functional  
Catalogue No 4720

<https://www.boellhoff.com/en/pdf/tepro>

**RIVQUICK®**

Blind rivets  
Catalogue No 0720

<https://www.boellhoff.com/en/pdf/rivquick>

**RIVSET®**

Self-pierce riveting for modern multi-material design  
Catalogue No 6701

<https://www.boellhoff.com/en/pdf/rivset>

**HELICOIL® Kits**

The efficient repair solutions for damaged threads  
Catalogue No 0180

<https://www.boellhoff.com/en/thread-repair>

**QUICKLOC®**

Quick-release systems  
Catalogue No 0600

<https://www.boellhoff.com/en/pdf/quickloc>

**FLEXITOL®**

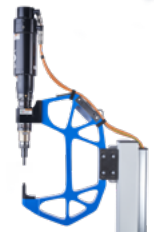
Systems for stepless tolerance compensation  
Catalogue No 0590

<https://www.boellhoff.com/en/pdf/flexitol>

**WELTAC®**

Resistance element welding for modern multi-material designs  
Catalogue No 6600

<https://www.boellhoff.com/en/pdf/weltac>

**RIVCLINCH® Automation E**

When clinching electrifies — energy-efficient, flexible and modular  
Catalogue No 6763

<https://www.boellhoff.com/en/pdf/rivclinch-automation-e>

**RIVSET® Automation E**

When modern multi-material designs electrify  
Catalogue No 6712

<https://www.boellhoff.com/en/pdf/rivset-automation-e>

### Industry-specific catalogues



**Automotive engineering meets 360° joining technology**

Exterior – headlights and rear lights  
Catalogue No 0943

<https://www.boellhoff.com/en/pdf/lighting-solutions>



**HELICOIL® Car repair solutions**

Catalogue No 0195

<https://www.boellhoff.com/en/pdf/car-repair-solutions>



**E-mobility meets 360° joining technology**

Catalogue No 8024

<https://www.boellhoff.com/en/pdf/e-mobility>



**Aerospace**

The aerospace industry meets  
360° joining technology  
Catalogue No 0951

<https://www.boellhoff.com/en/pdf/aerospace>

Industry-specific videos



**Automotive engineering meets  
360° joining technology**

Exterior – headlights and rear lights

<https://www.boellhoff.com/videos/lighting-solutions>



**Automotive industry meets  
360° joining technology**

<https://www.boellhoff.com/video/automotive>



**E-mobility meets  
360° joining technology**

<https://www.boellhoff.com/video/e-mobility>



**The aerospace industry meets  
360° joining technology**

<https://www.boellhoff.com/video/aerospace>



**360° Joining Technology  
in the general industry**

<https://www.boellhoff.com/video/generalindustry>

# 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](http://www.boellhoff.com) or contact us at [fat@boellhoff.com](mailto:fat@boellhoff.com).