



Partner of the automotive industry
Expertise unites

B'OLLHOFF

Böllhoff: **Your automotive expert** for fastening technology



"The automobile industry is reorganising its division of labour and outsourcing an increasing number of spheres of competence. Outsourcing, global sourcing and the intensity of global competition mean new requirements for suppliers. Integration of value added between tiers and OEMs is inexorably progressing.

As a recognised partner, Böllhoff is familiar with the industry's special requirements and supports its customers along the entire supply chain.

On this way, I accompany you through this brochure".



Editorial

The history of the automobile is a history of fascination and emotion, of design and engineering, of people and brands. The automobile always has been and still is the driving force of progress.

No other industry today shapes our economy as does the automobile industry. Its size, dynamism, innovative power and globalisation are unique.

The manufacturers' demands towards their suppliers are correspondingly high. Ever shorter product cycles, use of new, lightweight and environmentally compatible materials, as well as a constantly developing division of labour require innovative power and a high degree of flexibility.

As a leading system supplier of fastening and assembly technology and as an international service provider, Böllhoff is a recognised partner for automobile manufacturers and their suppliers. Whether for screws, rivets, clinching or C-part management – Böllhoff stands for innovative solutions.

Read the following pages and get inspired.

Fascination

Dynamism

Innovation

Your supply chain



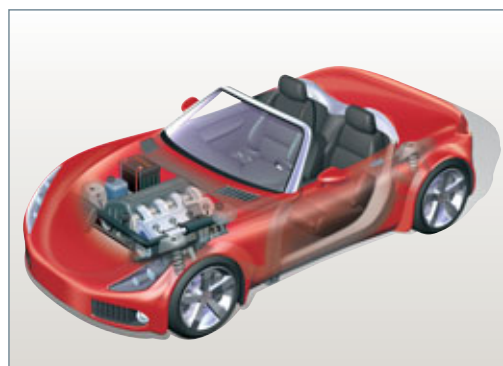
"Innovative ability and technical potential are the deciding factors for the chances of success of automobile manufacturers and their suppliers. Acceleration of technical progress results in ever shorter model cycles. Global competition leads to high costs and pressure to innovate. By extending the model range, manufacturers satisfy their customers' needs and address niche markets. In order to reduce manufacturing costs, different models are developed on a common platform or equipped with identical components.

Moreover, on the supplier side, there is an increasing focus on intercompany cooperation in forms of strategic partnerships aiming at an improved competence in the fields of development, production and logistics".



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Diversity as routine

As a provider of complete solutions and systems, Böllhoff offers products and services for every part of the automotive supply chain. Customer orientation starts already in research and development.

In the production process, with its C-part management, Böllhoff delivers products and fasteners right into the production department. There, customised equipment and machines designed according to the Böllhoff portfolio ensure high efficiency because optimised processes avoid downstream costs.

Our basis for partnership cooperation are uncompromisingly high quality standards and a company culture with the spirit of a family business.



Research and development



"Often, optimised fastening and assembly processes are the key to realising concepts regarding modern materials and multi-material construction for lightweight construction of vehicles. This reduces consumption and CO₂ emissions.

Innovation only works in combination with customer orientation. OEMs increasingly focus on brand management, image, sales and customer care. In return, suppliers accept increasingly larger shares of development and production. Traditional understanding of the division between manufacturer and supplier role has therefore had its day.

As a recognised service provider and system supplier with extensive service expertise, Böllhoff is accordingly positioning itself in the fastening and assembly technology sectors."



The automobile industry has prepared for global competition early and systematically. Innovative ability and a high engineering standard together with a sharp focus on customer orientation are the deciding factors for the chances of success in today's market.

Yesterday's innovations such as the airbag and ABS are today's stand-

ards. Constantly, further innovations are about to make their breakthrough.

Acceleration of technical progress merges with strict cost management while model cycles grow ever shorter. The foundation for great market success at low costs is laid in research and development in a higher degree than ever before.

This requires a high degree of flexibility and comprehensive know-how on the side of the suppliers. Designs are based on multi-material and lightweight construction.

Competitive pressure will continue to further increase the speed of vehicle development. In these model offensives, tiers are taking on an increasing number of tasks. Complete solutions for modu-

les and subassemblies are decisive for the network of OEMs and suppliers.

Böllhoff is able to provide these solutions thanks to decades of development experience in different industries, with a focus on the automobile industry.

Böllhoff offers market-oriented products and services in the shortest possible time.

Customer benefits at a glance

- Knowledge of future trends
- Innovation management through the company's own research and development department
- Development partnerships with companies and research institutes
- Own prototype construction and test fields
- Accredited in-house test laboratory according to DIN EN ISO/IEC 17025
- Fastening and system developments
- Modern CAE technology

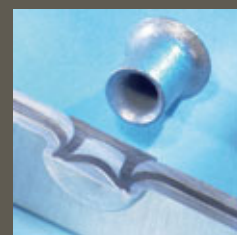


Close dialogue with the customer is the driving element in the shared supply chain: Optimising processes, reducing production times and costs and strengthening competitive positions.

The sooner Böllhoff can contribute its expertise the greater the potential.



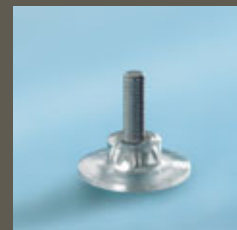




Joining for all purposes?

RIVSET® high-strength, reliable connection of steels, aluminium and plastics.

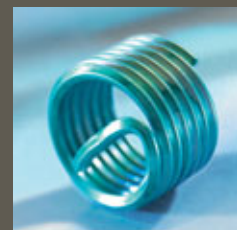
- Particularly suitable for hybrid joining
- High dynamic strength
- Form- and force-closed



Durable adhesion?

ONSERT® quick and process-safe adhesion of fasteners to diverse materials

- Short curing times ≤ 4 seconds (final strength)
- Strong tight fit (resistant to ageing)
- Flexible design
- Defined layer thickness



Strong threads?

HELICOIL® thread inserts for thread reinforcement in lightweight materials

- High-strength wear-free thread
- Corrosion and temperature resistant
- High dynamic load capacity



Thin-walled components?

RIVKLE® solution for fastening a load-bearing nut or bolt thread to a thin-walled workpiece

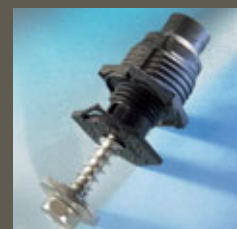
- Load-bearing thread
- "Blind" assembly (one-sided access)
- Tightness, e. g. due to seal below the head



Thread in plastics?

AMTEC® metallic inserts for thread reinforcement for plastic components

- Shorter injection cycles (component)
- Low-stress tight fit
- No relaxation



Easy adjustment of tolerances?

FLEXITOL® systems for automatic adjustment of production tolerances

- Easy integration into customer components
- Assembly from one side



Vibrations and noise?

SNAPLOC® and RIVKLE® Elastic fasteners and fixing systems for vibration and noise decoupling

- Fast and easy assembly
- Reduction of parts
- Construction flexibility due to adjustable parameters



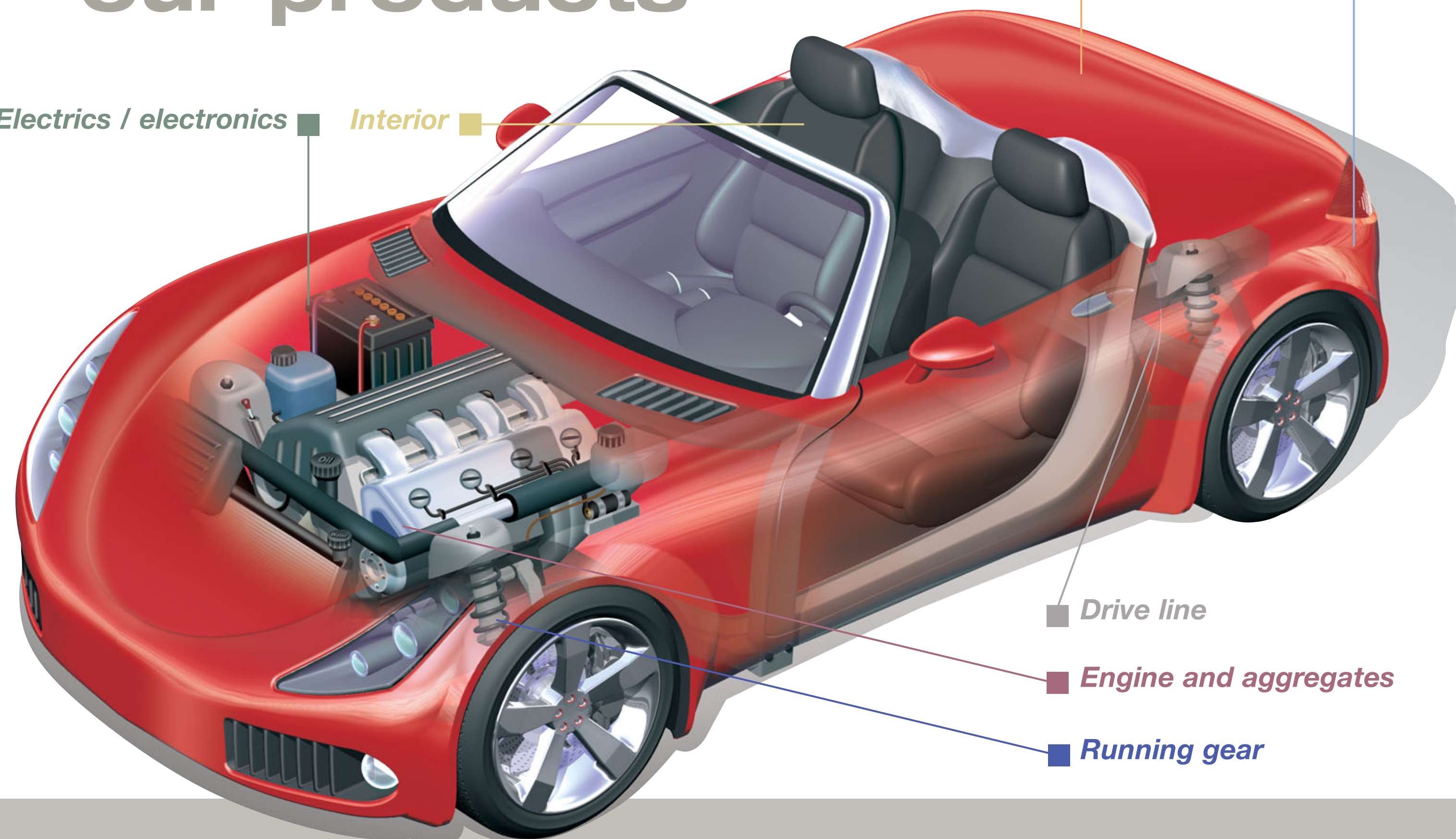
Your modules – our products

Electrics / electronics

Interior

Body structure

Body (exterior)



Drive line

Engine and aggregates

Running gear



For all purposes?

TEPRO® high-precision industrial mouldings and subassemblies

- Adjustable
- Splashproof
- Weight reducing



Direct screwing?

UNITEC® K' in K' screws, thread inserts and screw systems as fastening solutions made of plastic

- Screwed connection with high protection against reversing
- Tolerance adjusting due to adjustability
- No corrosion



Even more direct screwing?

Thread forming screws for plastics of optimum geometry

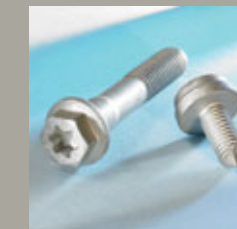
- Application-specific consulting for choosing the perfect connection method
- High tensile and torsion strength
- Cost-effective when using standardised company-specific parts



All-round screw engineering

DIN and standard screws for the automobile industry as well as special screws for special requirements

- Specially coated screws
- Self-locking screws
- Wheel bolts



All-round nut engineering

A wide variety of nuts, especially for automobile applications, for fastening and permanent locking even under the most difficult conditions

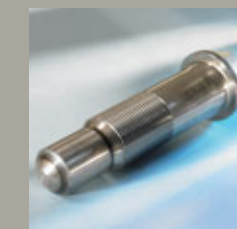
- Nuts with tight-fitting washers
- Locknuts
- Wheel nuts



Turned, punched or folded?

Products and special parts according to drawings, customer individually developed and manufactured for optimised production

- All materials
- All manufacturing methods
- All surface treatments



More than just fasteners?

All C-parts from a single source so as to reduce the number of suppliers and concentrate expertise

- Fixing materials, e. g. cable ties, clips
- Hydraulic and pneumatic components
- Balls, ball bearings, springs



Purchasing and logistics

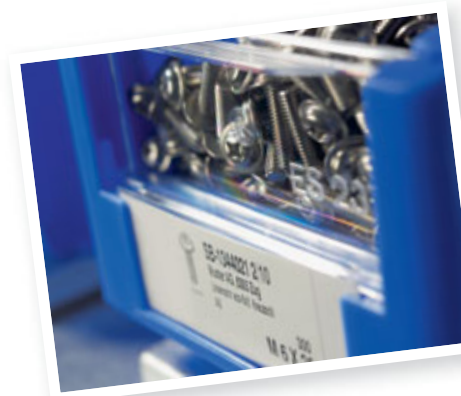


"Flexibility – one of the greatest challenges for the automobile industry. The market is subjected to drastic fluctuations. Increasing model diversity and a rising degree of equipment in new vehicles increases production individuality. This requires optimisation of material and information flows. C-part management systems simplify processes, minimise stocks, avoid supply shortages and reduce costs."



The automobile industry is a global industry. Globalisation of production requires a highly reliable supply chain. The permanently changing value-added architecture means suppliers face demanding tasks.

Assembly lines must be smoothly supplied. One missing or defective fastener can interrupt the production process.



With ECOSIT® (Economic Supply in time) Böllhoff has established a supply and stocking system – for more efficiency also with respect to economic aspects. Böllhoff thus provides the entire supply chain for its customers:

Planning and scheduling, procurement, quality assurance, stock-keeping and in-house distribution of goods right to the conveyor belt.

Customer benefits at a glance

- Reduction in supplier diversity
- Optimisation of in-house processes
- Takeover of planning, scheduling and procurement
- Reduction in administrative effort
- Reduction in stocks, storage areas and capital tie-up
- 100 % readiness for delivery
- Standardisation and optimisation of C-parts

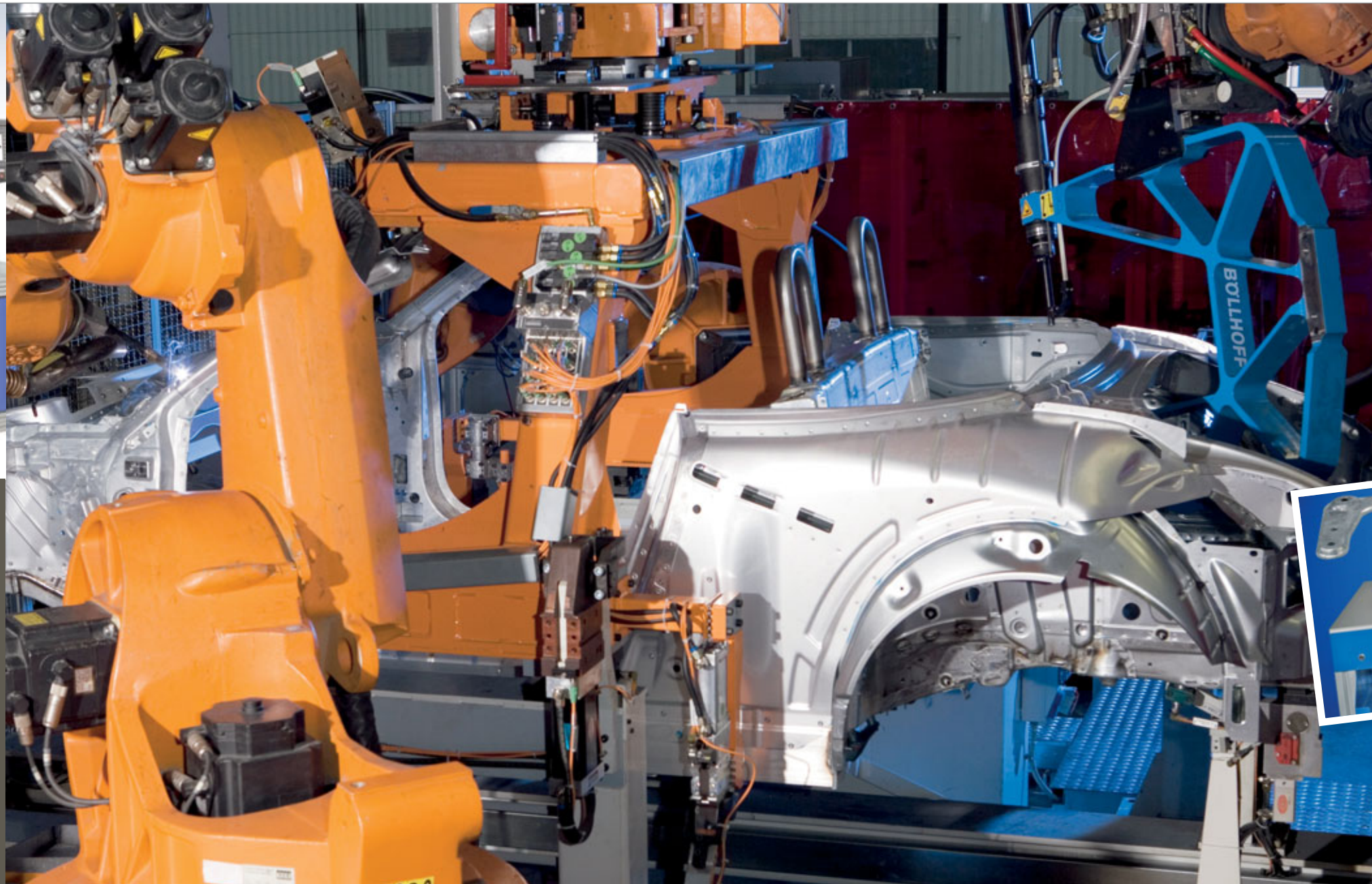


ECOSIT® makes a lasting contribution to process security and simplification in automobile production – by reducing the number of suppliers and guaranteeing a 100 % readiness for delivery. Simultaneous standardisation and optimisation of fasteners by experts in fastening technology simplifies assembly and reduces tool costs. Böllhoff fulfils this task through its ECOTECH service.

Production



"Around 70 percent of the value added of an automobile is provided by suppliers. Parts suppliers of the past are now positioning themselves as specialists in cooperations or are becoming system suppliers. The complexity of today's automobiles requires intercompany cooperation. New business models will substantially change cooperation within the industry. Modern electronic media are becoming increasingly important for the coordination of tasks based on the division of labour."



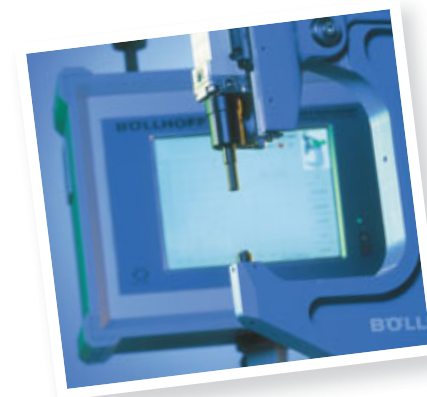
Automobiles have been built for more than a century. And for over 100 years automobile production is being optimised. The question of efficient and effective cooperation between manufacturers and system and component suppliers has been arising and still is arising again and again.

Therefore, at an early stage, Böllhoff very deliberately placed the automotive supply chain in the centre of all activities.

Flexibility and innovative power are reflected in a wide product range for the fastening and assembly technology: screws, nuts, thread inserts, quick-release fasteners, rivets, standard and drawing parts in all

required dimensions and materials. All fasteners and the respective processing systems are suitably designed.

They may be applied in flexible production lines as well as in manual workplaces. This ensures constant workflow even in highly automated productions.



Customer benefits at a glance

- Short development times
- International representation
- Sound knowledge of the industry
- Recognised production planning know-how
- High level of development expertise
- Wide product range
- Customer-specific solutions



Böllhoff and quality



"For more than 130 years, the flexibility and speed of an independent family business have been among the main characteristics of the Böllhoff Group. This independence will continue to be the pacemaker of the company's further development. Experience creates confidence. Values create connections – joining together!"



Customer benefits at a glance

- Certified quality management according to ISO/TS 16949:2002
- Certified environmental management according to DIN EN ISO 14001
- Accredited in-house test laboratory according to DIN EN ISO/IEC 17025
- Decades of experience in automotive engineering
- Motivated employees as the basis of our success
- Partnership cooperation
- 4th generation family business
- Everything from a single source: products, systems and logistics



As an international service provider, Böllhoff is one of the leading suppliers of fastening and assembly technology. The headquarters of this 4th generation family business are located in Bielefeld, Germany.

With more than 2,000 employees and a network of companies and representations on all continents, Böllhoff is a worldwide operating

company. Due to this proximity to the customers, the company participates in all markets and market segments on a local basis.

The quality management system is certified according to ISO/TS 16949:2002. This means strict orientation to the zero-defect philosophy: Continuous improvement is a permanent process.

Joining together! With this company creed, Böllhoff expresses its daily action. On the one hand the product range – the world of fasteners. On the other hand "Joining together!" as a particular focus on people. People who, with their personal connections inside and outside the company, are the basis of our success today and in the future.

Courage, fairness and loyalty are the corner-stones of our company culture.

Yours

Wilhelm A. Böllhoff
Michael W. Böllhoff

Wilhelm A. Böllhoff
and Michael W. Böllhoff



Böllhoff International with companies in:



Argentina
Austria
Brazil
Canada
China
Czech Republic
France
Germany
Hungary
India
Italy
Japan
Mexico
Poland
Romania
Russia
Slovakia
Spain
Turkey
United Kingdom
USA

Apart from these 21 countries, Böllhoff supports its international customers in other important industrial markets in close partnership with agents and dealers.

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Böllhoff Group
Archimedesstraße 1 – 4 · 33649 Bielefeld · Germany
Phone +49 (0) 5 21/44 82-01 · Fax +49 (0) 5 21/44 93 64
www.boellhoff.com · info@boellhoff.com

