

BÖLLHOFF

ECOSIT®

Economical procurement and distribution systems
for fasteners



A large iceberg floats in a blue ocean under a clear sky. The visible tip of the iceberg is on the surface, while the much larger, submerged part is below the water line. The image is used as a metaphor for cost accounting, where the visible part represents direct costs and the submerged part represents indirect costs.

Direct (visible) costs

- Material costs

Indirect (invisible) costs

- Assembly costs
- Materials planning
- Logistics
- Quality testing
- Stock control
- Design
- Capital lockup

Reduce total costs, not just purchase costs

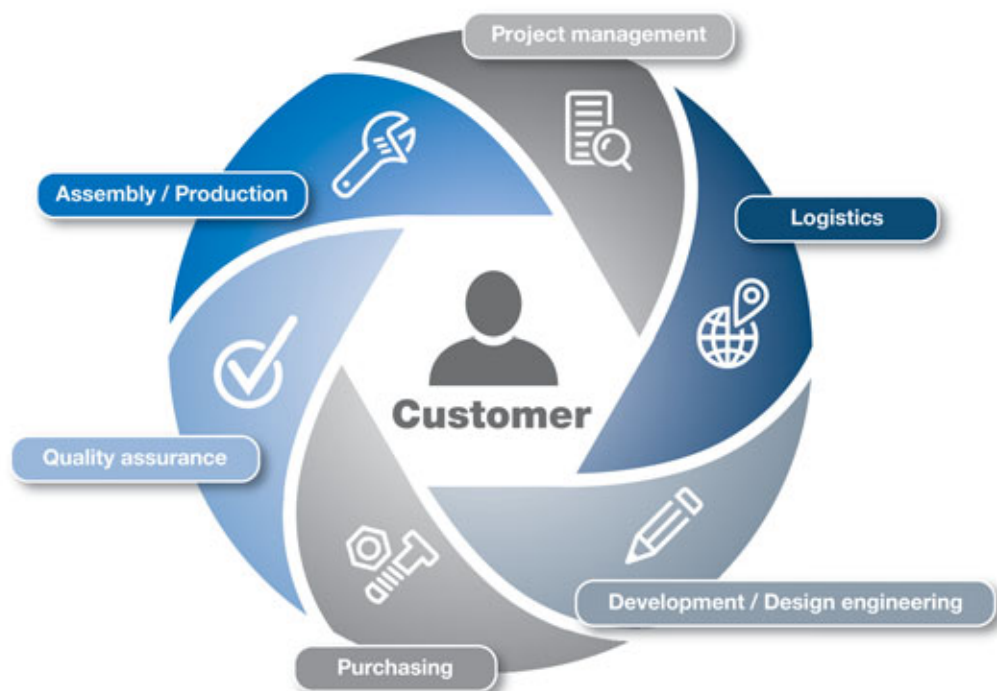
For many companies their priority remains ensuring a short-term reduction in purchase costs. If these costs are cut, there will be a direct and immediate impact on company profits. However, merely optimising purchase costs often leads to consequential charges with long-term effects. This can result in recall campaigns, refinishing costs, accidents as well as lasting harm to a company's image. Stoppages and complaints demonstrate that it is worth giving consideration to total costs.

Catering for the wishes of customers and helping them optimise their total costs is our core business. And we can do this firstly with the help of logistics concepts, and secondly, thanks to our expertise in fastening technology.

The purely administrative benefits of reducing suppliers and bundling purchasing volumes are obvious. What, however, is unfortunately forgotten here far too often is that doing away with suppliers also means largely missing out on the technical expertise of previous direct suppliers. We, therefore, advise our customers not to be too rash when reducing the number of their vendors, and recommend they aren't too broad in their definition of C-parts. The skills required for fastening technology and, for example, electrical engineering are very different and cannot be offered to a high standard by

the same supplier. From our experience in working on more than 200 customer projects a year, we know that it is possible to save significant sums throughout the value-added chain by way of technical optimisation and standardisation. Our expertise is wide-ranging and characterises our product range in every detail in regards to technology and the technological skills of Böllhoff's engineers.

Böllhoff has been working successfully with future-oriented industrial businesses and service providers from all over the world for many years. As a strategic partner to our customers we contribute to their value added. We think in systems: optimising processes, reducing costs, reinforcing competitive positions. This is the benchmark for our success – and that of our customers.



A focus on customer benefit



Innovative technologies for innovative companies

The struggle for a share of the market has never been as intense as today. This is why massive pressure to innovate exists worldwide so as to boost productivity in all areas. This increases the demands on suppliers. Ever-shorter product cycles, the use of new, lighter and more environmentally friendly materials and a constantly changing division of labour call for flexibility and great innovative strength.

The innovative strength of the Böllhoff Group is documented by its numerous patent applications, which have been translated into many new products and service concepts. This is also a result of our close cooperation with various research institutes and associations, including FOSTA, EFB-Elektronik or DVS – Deutscher Verband für Schweißen und Verwandte Verfahren (German association for welding and associated processes). The Böllhoff Group is also regularly involved in numerous projects sponsored by German ministries such as the Federal Ministry of Education and Research, as well as the EU.

Worldwide some 150 employees work in R&D at the Böllhoff Group, with 80 based in Germany.

We want to present you with a selection of our company's innovation projects.

Fastening elements for lightweight construction

That is why we have developed the RIVKLE® SFC (Smart For Composite) blind rivet nut, for example. You can use it to fasten load-bearing threads in plastics and composite materials which play an important role in current lightweight construction. And you can do that without causing any damage to the materials.

Self-pierce riveting for modern multi-material design

We also break new ground with the modern RIVSET® Automation EH assembly system. There, we focus on

functionality, flexibility and design. Combined with a long life, maximum availability and minimum maintenance, this is the perfect foundation for effective production.

Further new technical highlights are the die changer, the magazine feed as well as the RIVSET® feeder with simple feeding technology. As always, fasteners and joining tools for self-pierce riveting come from a single source.

Efficient protection against tampering

Some applications make it necessary to prevent unauthorised access. This is often the case with complex machinery and installations where changing the delivered condition can result in dangerous situations. For such cases the patented PARRYPLUG® offers a quick and clean solution by locking in a flush or slightly recessed position in relation to the head of the screw.

ECOSIT® RFID: innovative logistics concepts

The use of RFID technology in the supply chain is constantly increasing. We have developed a procurement and distribution system that simultaneously improves the security of supply while simplifying operation. RFID labels on bins ensure fast, automated order initiation. RFID gloves are used to prevent mistakes being made and to simplify handling. With every action, the RFID transponder information is read out and compared with the order.

Böllhoff – pioneering developments



Expert advice – even after commissioning

As an international service provider for fastening, assembly and systems technology, we offer the expertise and resources for economical procurement and logistics. The ECOSIT® service package allows us to take charge of the entire supply chain for our customers: materials planning, procurement, quality management, stock-keeping and internal goods distribution right through to the production line. Every ECOSIT® system is an individual customised solution that is based on cooperation and partnership with the customer. Besides increased efficiency and cost savings, our service focuses on top quality and transparency.

ECOSIT® – greater efficiency in three stages

ECOSIT® is rolled out in three stages to tailor the supply system to the specific demands and individual wishes of the customer.

First stage: As-is analysis

The current situation at the customer's company is evaluated on site. This involves looking at factors such as established structures, individual processes and the logistics and data processing framework.

Second stage: Project phase

With the customer Böllhoff's experts set up a project/consultancy team and focus their attention on all operational areas. The results of this teamwork lay the basis for the action plan to implement ECOSIT® according to the customer's requirements.

Third stage: Implementation and commissioning

The customer first of all draws up an outline materials plan for the parts to be covered by ECOSIT®. This can be based on past demands or a requirements forecast in conjunction with production planning. Böllhoff determines a minimum stock level for each part that is automatically reserved for the customer. This is, of course, a dynamic process with the data from the outline materials plan serving as the starting point. Actual consumption levels and forecasts provide the basis for further materials planning. Customer information is only required with fundamental changes in demand, for example due to new production profiles or modified utilisation of manufacturing capacity. ECOSIT® includes all operational processes with the aim of simplifying processes, making full use of potential and achieving 100% operating reliability.

1. As-is analysis	2. Project phase	3. Implementation
<ul style="list-style-type: none"> ■ Visit to reference customer ■ Analysis of process on site ■ Assessment of customer requirements ■ Assessment of additional customer wishes 	<ul style="list-style-type: none"> ■ Development of concept ■ Development of checklist ■ Calculation of potential savings ■ Layout planning ■ Contract negotiations 	<ul style="list-style-type: none"> ■ Article generation and determination of framework at Böllhoff ■ Ordering of bins, shelf systems, etc. ■ Design and printing of labels ■ Set-up and commissioning ■ Staff training

Bundling services and saving costs



BOLLHOFF

in figures

Over
31,000,000,000
fasteners
sold
per year

Over

2,150,000

load carriers handled
per year

Up to

435

Logistics area over

20,000 m² in size

tonnes of incoming/outgoing goods per day

On average **5,500**
deliveries a day





ECOSIT®
Economic supply in time

Wirtschaftliche Beschaffungs-
und Belieferungssysteme



ECOSIT® systems

for your security of supply

ECOSIT® (ECONomic Supply In Time) covers various logistics handling methods. The most suitable solution is implemented depending on the parts involved and the customer's requirements. Whatever the version, this guarantees need-oriented and just-in-time supply for 100% availability. The individual systems differ according to the technology used.



ShelfScan

Scanning the barcodes on the shelf triggers an order. We pick and deliver the ordered products as agreed.



RFID (radio-frequency identification) is used nowadays whenever automatic detection and monitoring is required. RFID technology established itself in the automotive industry years ago. In the private sector the best-known applications include vehicle immobilisers, ski lift passes and the anti-theft tags used in shops. Use RFID technology at your own company and in particular enjoy simple ordering and improved security of supply thanks to fast, automated initiation of orders.

RFID Ceiling

Once a container is empty, it is immediately placed in a collection box.

The ceiling antenna reads the RFID label on the container. The RFID system transmits the data to us within a matter of seconds.

This avoids the need for any manual operations. New goods are always supplied in a clean bin.





RFID Box

All the relevant data is saved on the RFID labels. As soon as stocks start getting low, the label is simply thrown into the RFID Box. The order is triggered and the procurement process begins. The 15" touchscreen also allows access to the central database, can be used to control electronic shelf displays and provides fast help via the video hotline.

RFID Base

In principle the RFID Base works in exactly the same way as the RFID Ceiling. The only difference is the positioning of the antenna. The antenna is built into a floor mat for RFID Base. The antenna reads all the empty bins which are standing on a pallet or in a collection box on the floor mat.



RFID Shelf

In this version the reader is located on the top shelf. The empty bins are collected there and the RFID labels are simultaneously read. This version is ideal if space is at a premium.

Cutting-edge technology with ECOSIT® RFID

Online ECOSIT®

All system information and transactions can be viewed online at any time and anywhere in the world.

Analyses and downloads are available at the touch of a button, ensuring maximum transparency and oversight.



ECOBin containers

The small load carriers (KLT) are suitable for both level and inclined shelves and for roller conveyors. The containers can be accessed from the ends and from the sides.

The fully rounded inner edges of the container also make it easier to remove items.

The container dimensions are chosen to ensure optimal use of Euro pallets, minimising the space required for road transport.

Innovative pallet and transport systems

The pallets are as stable as standard pallets and can be stacked in the same way. They have a high load capacity and can be converted into mobile pallets within seconds.

The easy-to-attach tie-down straps lead to efficiencies in all picking, delivery and transport operations.



Benefits at a glance

- Fast and easy shelving and technology installation
- Systematic, clear stock-keeping
- Reduced inventory levels and contingency stocks
- High security of supply
- Express deliveries during demand peaks
- Online order process control
- Video hotline



Application engineering support ECOTECH – to cut total costs

ECOTECH is short for ECOnomical TECHnical Engineering and stands for cost savings thanks to optimised fastening technology. The future manufacturing costs of a product are largely determined at the design stage of a new development. The economic efficiency of a fastening technique does not greatly depend on the price of the fasteners. The processing costs for preparation and assembly of the components to be joined are of far greater importance.

The main cost drivers in the process are:

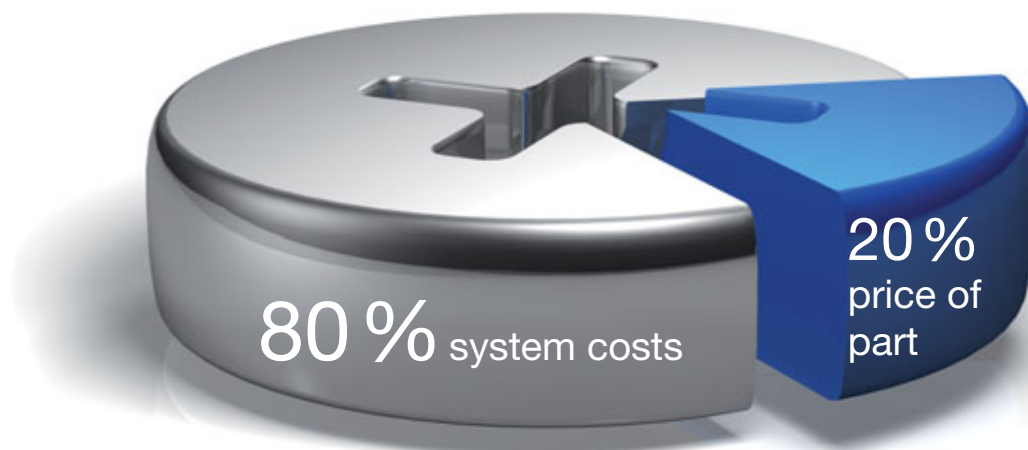
- Design
- Procurement
- Quality assurance
- Logistics
- Stock-keeping
- Preparation for assembly
- Final assembly
- Capital lockup

Compared to this, the unit price of the fastener, at approx. 20%, is relatively low. This means that the earlier experts in fastening technology are involved, the greater the impact on the overall value-added chain.

You can benefit from a comprehensive range of services:

- Design, engineering and supply of customer-specific fasteners
- Application engineering tests in a certified laboratory
- In-house prototyping
- Standardisation of fasteners
- Optimisation of product lines
- Specialist publications about fastening technology
- Customer seminars

Our priority is always to improve customer products while cutting the costs of production.



Expert fastening technology



Top quality is our corporate philosophy

Our products must be just as reliable when used in a household appliance as in a car or for air or space travel. For us, maximum product and service quality is thus a matter of course. We have always fulfilled the latest norms for quality and environmental management. For example, Böllhoff was one of the first companies to be successfully certified to ISO/TS 16949:2002 – the world's highest standard for the automotive industry.

Interdisciplinary teams working closely with customers ensure advance quality planning for all new processes and products. We set measurable goals for all activities. These target agreements, which are defined with the involvement of all employees concerned, are based on customer expectations and are reviewed once a year. Thanks to systematic process control and continual improvement in all areas, we can edge closer and closer to the ideal of the zero-defect philosophy.

Tried and tested quality

The accredited test laboratory at Böllhoff offers a complete range of services for destructive testing of fasteners of all types. All areas of the Böllhoff Group and its customers benefit from the lab's expertise in the field of materials and testing.

Services

The high-tech laboratory staffed by expert technicians performs mechanical-technical, physical, chemical and metallographic testing.

Tests are carried out for the following areas:

- Quality assurance
- Customer-specific tests
- Product development
- Prototype testing
- Investigation of damage
- Complaints



Quality as added value for our customers



The manufacturer's expertise in fastening technology

We are specialists in the development and production of innovative, high-quality fastening technology. Our range of services covers solutions for metallic and plastic materials including blind rivet and thread technology as well as plastics joining and quick-release technologies – all in combination with a wide selection of processing systems.

At 12 sites throughout the world we manufacture standard and customised fasteners: from plastic screws and the HELICOIL® thread insert to manual and fully automated assembly solutions.

In such an environment our solutions help make our customers more competitive. Here we can rely on the technical skills and long-term experience of the some 700 employees based at Böllhoff's production plants around the globe.



Our company headquarters and our main logistics centre are centrally located in Bielefeld, Germany.

Böllhoff – pioneering developments

BÖLLHOFF

Worldwide for you a strong partner – at 39 locations in 24 countries.

Böllhoff Group

Please find your local contact on www.boellhoff.com
or contact us under fastenerservicesupply@boellhoff.com

