



## **FORMTEC**

Engineering and manufacturing of cold formed products – Precise, functional and efficient

# **BÖLLHOFF**

## Contents

---

	Page
Böllhoff – Competence in cold forming	2
What is FORMTEC?	3
Your benefits	3
FORMTEC - Applications	4
Competencies	7
Automotive industry know-how	11

---

## Competence in cold-forming



As the market leader in fastening and assembly technology, Böllhoff has extended the current product range by an additional technology – the cold forming and subassemblies process for customer specific solutions - FORMTEC.

From A to Z we are the partner for your projects – from the first concept to final production. Our dialogue with you is the thread of our working process. Thanks to smart innovation management and close working relationships we develop tailor-made solutions along your supply chain.

**Get to know us personally and find out all about the difference cooperation with us can make!**

## What is FORMTEC?

The FORMTEC name refers to the cold forming technology and stands for engineering special metal parts and sub-assemblies.

Böllhoff, with its high level of expertise and facilities, has developed strong competencies in the development of specific cold forged parts especially for automotive industry.

With its modern and well equipped technical facilities Böllhoff is able to create many simulation or mechanical tests that guarantee the good design of parts.

## Your benefits

- Project management
- Customer service
- Development / construction / prototypes
- Production
- Assembly

The FORMTEC range of products is dedicated to the automotive industry and can be subdivided into the following categories:

### Design parts and sub-assemblies



### Special inserts



### Special nuts



As the leading system supplier for fastening and assembly technology, we also supply the matching assembly solutions for the fasteners.

The following pages give you an impression of the great versatility of our FORMTEC range – just turn the page.

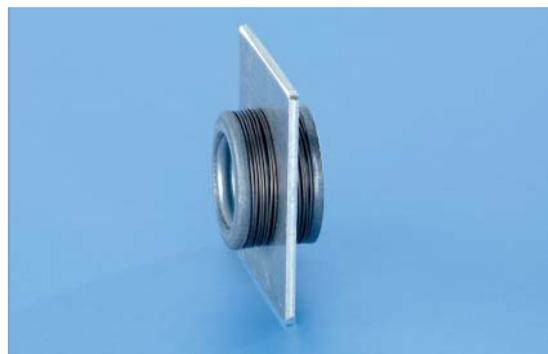
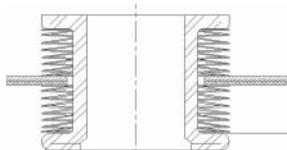
**FORMTEC - Applications**



Design parts and subassemblies

**Securing the heat shield**

The heat shield of a car engine is exposed to very high temperature variations (-40°C up to +300°C) and has to remain in place without breaking under the expansion effects.



**Customer advantages:**

- Robust and fast assembly (setting by press)
- Heat and vibration isolation
- Optimization of the number of components
- Cost saving

**Glass roof drain**

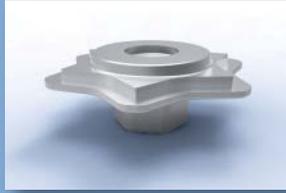
Rain falling between the glass roof and the car body has to be drained to prevent corrosion.



**Customer advantages:**

- Easy to assemble (manual assembly)
- Robust watertight solution
- Cost saving solution (no impact on the car design)

**FORMTEC - Applications**



Special inserts

**Mounting the air intake**

On a car engine the air intake system must be fastened securely onto the engine block. This smart cold forged solution enables robust and fast assembly.



**Customer advantages:**

- Robust and fast assembly (setting by press)
- High torque resistance
- Cost saving

**Securing the manifold**

In order to reduce the cost of a previous turned solution a cold forged insert has been developed. The specific shape of the part has also improved the mechanical performances.



**Customer advantages:**

- High mechanical performances
- Low cost solution

**FORMTEC - Applications****Special nuts****Fixing of the towing eye**

When a car must be towed, the towing eye has to be securely fastened on the sub frame. The specific system that has been developed enables the towing eye to be mounted directly inside the car plastic frame.

**Customer advantages:**

- High mechanical performances
- Low cost solution
- Robust and fast assembly (setting by press)

**Securing the car battery**

To ensure a fast battery exchange, we have developed a specific quarter turn system to enable a reliable and fast locking system. This assembly is composed of a special cold forged nut that secures the battery in place.

**Customer advantages:**

- High mechanical performance
- Optimization of the system (nut and positioning system with the same part)

## Competencies - Project management

### Project management as partners

We are satisfied whenever we can exceed your expectations.

The foundation of our competence is an efficient concept of discussion, development and support. The joint aim is to realise the technically optimal and economically most attractive solution. That is also the standard of our project management.

Our project management supports you with management- and product- specific expertise.

Our personnel can draw on many years of experience in planning technical products and realise tailor-made solutions according to your requirements. We think systems : process optimisation, cost reduction, strengthening of market positions and installation tools.

Our project management stands for interdisciplinary coordination of complex activities. That means planning, controlling and monitoring in all project phases. All our teams cooperate, so that we all work together successfully. From our point of view, that is the most efficient way to find quicker and better solutions.

Before we start, we take a close look to evaluate what needs to be done. After that, we conduct the project and carefully coordinate the process steps. Knowledge transfer starts from development and does not end until the final production.

We offer reliable solutions for every part of the supply chain – all over the world.



## Competencies - Customer service

---

### Wherever you need us

Innovative ability and technical potential are becoming increasingly important as the basis for chances of success.

You have a personal contact person who will be glad to discuss your requirements. So you save precious time.

Our expertise and experience reflect in a worldwide distribution network. The headquarters of this family business, with four generations of history, is located in Bielefeld, Germany. Apart from that, Böllhoff has sales and production facilities in 21 countries. Outside these 21 countries, Böllhoff cooperates in close partnerships with representatives and merchants to serve international customers in other important industry markets.

Joining together ! This company motto is the motivation for our everyday work at Böllhoff. On the one hand, there is our product range – the whole world of fastening technology. On the other hand, « Joining together ! » puts the focus on us as people. Persons who, with their personal internal and external connections, create the basis for today's and tomorrow's success. Courage, fairness and loyalty are the cornerstones of our corporate culture.

Yours

Wilhelm A. Böllhoff

And Michael W. Böllhoff



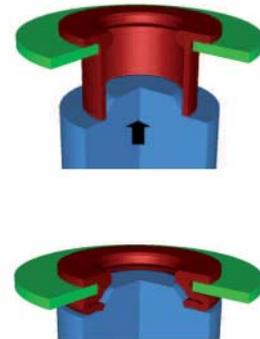
## Competencies - Development / Construction/ Prototyping

Your very first conceptual ideas are our starting signal to develop tailor-made solutions. Special design requirements, component assembly, precision parts, hybrid articles or subassemblies – we invite you to benefit from our development, production and assembly know-how. The earlier we can contribute our competence, the greater the potential.

Products and markets are undergoing changes at incredible speed – which means your requirements are changing just as fast. Therefore, product development must always be one step ahead. Whether a new product needs to be developed or whether we have to tackle a specific problem in close cooperation with you. Only the creative dialogue and knowing about the interaction of processes and development allows thinking ahead. That's how ideas become real innovations.

**With our design and simulation software we are able to validate a concept in a very short time.**

To make those ideas become reality, we work according to the current requirements in the automotive sector using modern CAD systems. Data transfer is agreed with the customer. All projects are subject to permanent progress tracking and systematic quality checks.

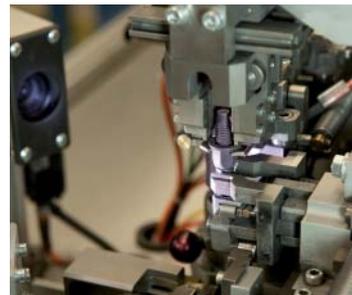
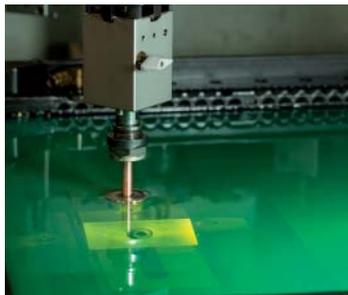


*Competencies - Production*

*Production*

Our manufacturing department is composed of various machines based on different technologies:

- **Cold forging** (aluminium, steel and stainless steel parts from 0.5 to 100 grams)
- **Turning and milling**
- **Overmolding** (metal-plastic components for sealing applications)
- **Camera inspection** for quality control



*Assembly*

**Not only do we produce, but we also assemble.**

Our expertise in assembly technology reaches from the assembly of component parts to the final product or sub-assemblies. Our in-house capacities of mechanical engineering allow us to realise complex assembly sequences.

Thanks to intelligent automation and assembly methods for components and sub-assemblies as well as to up-to-date technology, production methods and results are constantly being optimized.

You provide the specifications. We provide the finished and tested sub-assemblies.

Sophisticated logistic processes, customer-specific procurement and supply systems as well as great competency when it comes to special packaging solutions – that is what we also have to offer.



**Competencies - Certified**

**Quality**

Our focus is always on sophisticated production processes and modern measurement and monitoring technology. Good quality is no coincidence, but is the result of systematic planning and implementation.

You define all the technical requirements – with our qualified team – which are then tested for feasibility. Your benefit is increased through process reliability and the avoidance of unnecessary costs.

In that process, you can count on the support through our certified laboratory. We employ modern equipment and competent testing experts to realise mechanical, technological, physical, chemical and metallographic tests. To ensure the highest quality, we regularly take part in audits by our customers as well as accredited certifiers.

When it comes to particularly complex, unusual challenges, you can benefit from our close cooperation with universities and institutes.

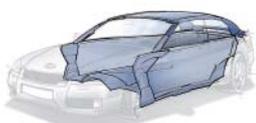
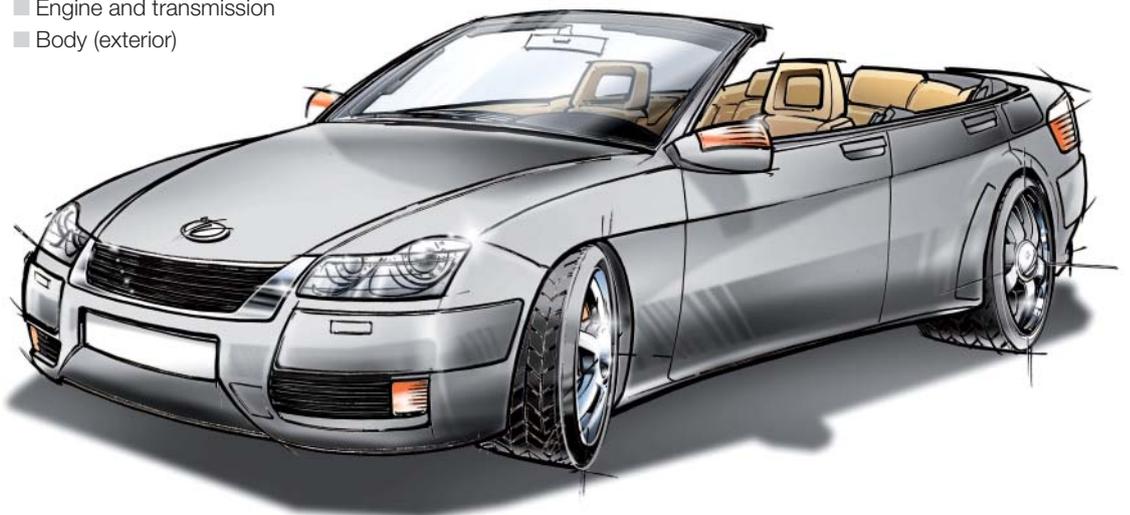


**Among others, we are certified according to:**

- ISO 9001
- ISO 14001
- EN 9100
- ISO/TS 16949, the highest international standard for the automotive industry

**Industry know-how**

- Interior
- Drivetrain
- Electrical/electronic equipment
- Engine and transmission
- Body (exterior)



**Interior**



**Drivetrain**



**Electrical/electronic equipment**



**Engine and transmission**



**Body (exterior)**

## 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.

Subject to technical change.  
Reprinting, even in extract form, only permitted with express consent.  
Observe protective note according to DIN 34.

Böllhoff Group  
Please find your local contact on [www.boellhoff.com](http://www.boellhoff.com)  
or contact us under [fasteningtechnology@boellhoff.com](mailto:fasteningtechnology@boellhoff.com)

