

# BÖLLHOFF



ANNUAL REPORT

# 2020

# BÖLLHOFF

We are shaping the future through successful connections.

For almost 145 years, we have been creating connections – and generating added value for our customers.

**Innovation, progress** and **customer focus** are the cornerstones of our commercial success. Even in a challenging year like 2020.

from page  
**14**

## INNOVATION

**Fostering fresh thinking.  
Pushing the boundaries of the possible.  
Finding answers to the questions  
of tomorrow today.**

from page  
**24**

## PROGRESS

**Never standing still.  
Improving established solutions.  
Looking to the long term.**

from page  
**30**

## CUSTOMER FOCUS

**Always at our customers' side.  
Developing precise solutions.  
Creating sustainable connections that inspire.**

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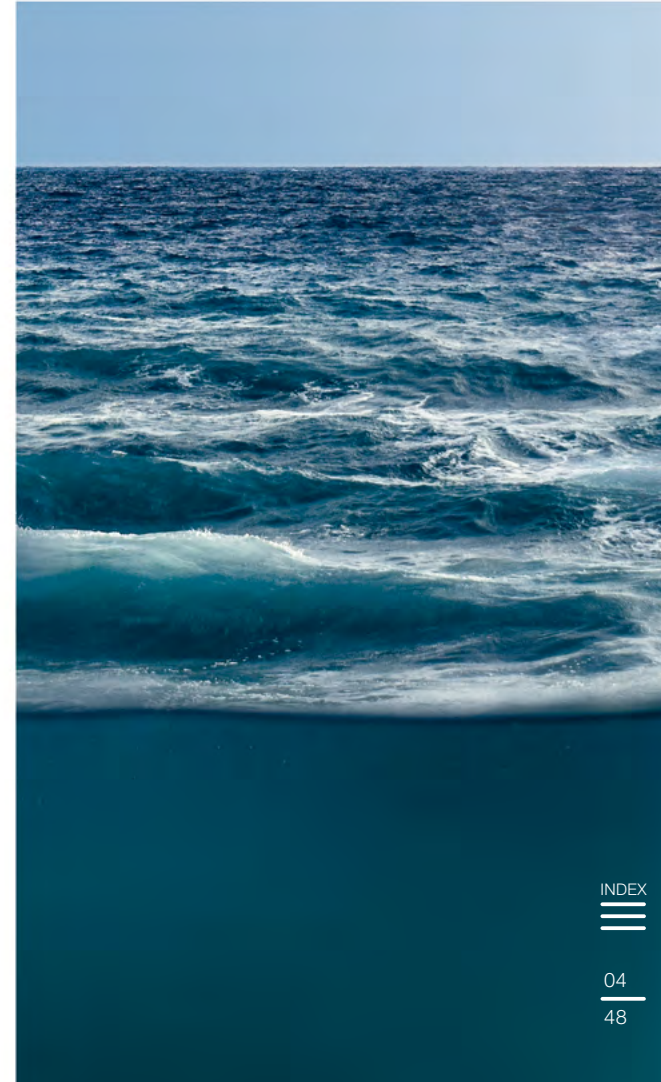
# The Böllhoff Group remains on course despite choppy waters

144<sup>th</sup> year of trading: an exceptional year dominated  
by the COVID-19 pandemic

## **Dear Colleagues and Business Partners,**

In 2019, we faced a slowdown in the increasingly stagnant global economy and prepared for rough seas ahead. However, none of us could have imagined just how stormy conditions would become in 2020 as a result of the COVID-19 pandemic. Temporary shutdowns of industry, commerce, tourism and public life became an everyday reality for people all around the globe. In these challenging conditions, we generated sales of 545 million euros in our 144<sup>th</sup> year of trading – down almost 15 per cent on the previous year.

The slowdown in the global economy we observed in 2019 was followed by a global economic crisis brought about by the pandemic in the second quarter of 2020. In many respects, the past year was unprecedented in the post-war era. A nosedive in China's economic output in February 2020 was followed by similar slumps in all industrial nations between March and May. As a result, the Böllhoff Group's sales in the second quarter of 2020 fell by 38 percent compared to the previous quarter. The third and fourth quarters were finally characterised by significant order fluctuations, but in part indicated a welcome return to strong growth.







We are indebted to our more than 3,000 employees around the world for their efforts in navigating these undulations and sharp fluctuations in the global economy. Despite the numerous challenges we faced, we were able to achieve a satisfactory year-end result – and so our thanks go out to them. Together, we have steered the Böllhoff Group safely and successfully through the crisis!

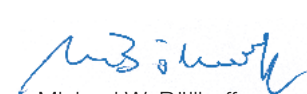
Leaving 2020 behind us and shifting our attention to the future, we have good reason to look to the years ahead with confidence. We took the pandemic year as an opportunity to pursue numerous projects concerning operational and innovative excellence, digital business models and diversification. For example, we have developed new business models with our digital innovation company, Archimedes New Ventures, and injected new impetus into existing approaches. We have also made progress on various projects to develop our products and processes.

In this annual report, you can read about how, even in a year in which planning was difficult, we were still able to proceed with numerous long-term development plans. In everything we do, we strive to drive forward innovation (from page 14), make constant progress (from page 24) and serve as a dependable partner to our customers (from page 30).


Now we are looking back on 2020 – a year like no other – with gratitude and relief in equal measure. We are grateful that, together with our colleagues, we were able to come through the year in relatively healthy condition. And we are relieved to have survived our 144<sup>th</sup> year of trading without suffering significant economic damage, thanks to our swift reactions and high resilience. We will use the experience of the crisis to become stronger as a corporate group in the years ahead. In addition, we remain ideally equipped to achieve our common goal: shaping the future of joining technology.

We would like to thank everyone – our customers, our employees and our business partners – for their loyalty, their personal contributions and their passion for successful joining.

The Board of Management, April 2021

  
Michael W. Böllhoff

  
Wilhelm A. Böllhoff

  
Dr. Jens Bunte

  
Dr. Carsten Löffler

# 2020

## A YEAR LIKE NO OTHER



A lot has already been written about 2020, an historic year in which a pandemic struck our economy and society with unforeseen severity, fundamentally changing all our lives. It will come as little surprise that the Böllhoff Group's summary of this extraordinary year is broadly similar to many other analyses you will already have read and heard.

**In 2020, the Group and its employees around the world faced more varied challenges than in just about any other year in almost 145 years of our company's existence.**

The coronavirus crisis had different impacts than the financial crisis of 2008-09, for example, which had a negative impact on large parts of the economy but left daily life in society broadly untouched. By contrast, the SARS-CoV-2 coronavirus has at times incapacitated entire countries. Governments around the world felt compelled to implement wide-ranging containment measures to counter the rapid spread of the virus, culminating in complete lockdowns. This caused demand to decline rapidly, particularly for more expensive consumer goods. In combination with collapsing supply chains around the world, the fall in demand led many companies to temporarily shut down their production lines. The eurozone suffered the most severe economic slump in its history in 2020. According to estimates from the

EU's Statistical Office, Eurostat, gross domestic product fell by 6.8 percent over the course of the year – the sharpest decline since its records began in 1996.

We acutely felt the fall in demand. Sectors in which many of our customers operate, such as the automotive and aerospace industries, were forced to temporarily pause production altogether. Demand in these sectors collapsed in the blink of an eye. This can be seen in the Böllhoff Group's sales figures, which were down over 50 percent in April 2020 on the previous year. Some of our subsidiaries' monthly sales dropped to zero, including in India. A further challenge was protecting all of the Group's employees against the virus as effectively as possible while retaining our ability to operate.

As a medium-sized family-owned business, we regard reacting swiftly and flexibly to such situations as one of our strengths. Even when navigating rough seas, we never allowed ourselves to be pushed off course. In the following pages, we hope to give you an insight into the specific measures we have taken in our efforts to weather the crisis.



Protecting our employees' health:

# Prevention and remote working

Central prevention team guides Böllhoff through the pandemic

On 26 February 2020, we established a central Böllhoff prevention team in response to the worsening situation in Italy. The team's primary aim was to put measures in place at an early stage to counteract the potential spread of SARS-CoV-2 within the company.

"What made this situation unusual was that nobody had any experience in how to

handle a pandemic of this scale, neither at the Robert Koch Institute nor at any of the other companies we contacted," said Christian Hagemeier, Head of the Prevention Team. "We therefore took it upon ourselves to draw up a pandemic plan and a comprehensive catalogue of measures for Böllhoff, and immediately began to implement the first steps." The pandemic plan and the measures derived from it were divided into three phases – detailing action before, during and after the pandemic.

In late February 2020, the four-person team started by introducing extensive prevention and hygiene rules in all parts of the company, based on three key pillars: hand washing, disinfection and social distancing. In parallel with initial instructions on the German government's 'AHA rules', which encouraged social distancing, good hygiene and face masks, the prevention team ordered protective equipment for

employees, such as masks, visors and screens. Constant internal communication was also very important at that time in order to foster a high level of trust in the measures, which had been put in place following close coordination with the Board of Management.

In collaboration with the IT department, the prevention team also held a work-from-home test day with several hundred participants in order to examine the technical requirements of remote working under real conditions. It became clear at an early stage in the pandemic that enabling everyone in administrative positions to work from home would be an important means of protecting many of our employees against contracting the SARS-CoV-2 coronavirus. In addition, systematically tracing and isolating personal contacts and conducting rapid COVID tests were key to reducing the potential for transmission to a minimum.



IT paves the way for working from home

**"That period in February and March 2020 was characterised by real dynamism – I've never experienced anything quite like it,"**

emphasises Stephan Berning, Head of the IT Service Desk team. Within the IT department, which provides support throughout the entire Böllhoff Group, his team primarily looks after the technology with which employees have direct contact, such as PCs, laptops, telephones and company mobile phones. "Even at the end of February," he says, "none of us would have thought that just two weeks later, from 16 March 2020, around 1,200 employees all around the world would be working from





home.” Implementing remote working on such a large scale was made possible by an immense effort from the entire IT department. Within just a few weeks, it had put a number of measures in place. These ranged from expanding data lines to providing emergency workstations and organising laptops for employees who would normally have worked at PC workstations. Stephan Berning looks back positively on this challenging period.

“Overall,” he says, “in the first weeks of lockdown in 2020, we showed that our company-wide IT infrastructure leaves us very well positioned for remote working.”



## Preventive measures in production and logistics

While a path had been established for employees in administrative positions to work from home to protect them during the peak of the pandemic, those working in production and logistics are not able to work remotely. Our focus in these areas was therefore on preventive action to interrupt routes of transmission within the company. Ultimately, our aim was to maintain operations as far as possible at all of the Böllhoff Group's 13 production sites and 4 logistics centres where the course of the pandemic permitted in each region.

Staggering shifts in terms of both physical location and scheduling was an important measure. We allocated all employees to fixed teams that worked staggered shifts and therefore had no physical contact with colleagues on the other teams. The teams also used different social rooms to minimise the risk of SARS-CoV-2 infections spreading between teams. In addition, we installed contactless forehead thermometers at our largest logistics centre worldwide in Oelsnitz, Saxony. We encouraged staff to act responsibly and take their temperature regularly to identify possible warning signs

before spending time around their colleagues.

On top of reducing physical contact between employees, minimising our employees' physical contact with external persons – such as during deliveries – was a decisive element of our approach. At our logistics centre in Oelsnitz, we achieved this by introducing pagers, a common tool in the hospitality industry. When a courier arrives at the centre and signs in at the shipping office, they are now given a pager. The courier then waits in their vehicle until the pager tells them when they can unload their goods and at which gate. This ensures that each driver heads to their allocated gate and minimises personal contact during deliveries.

## Catalogue of measures makes an impact

Thanks to the comprehensive preventive measures put in place, Böllhoff withstood the pandemic year well. Only a handful of our employees around the world tested positive for COVID-19 and, thankfully, these were all mild cases. Christian Hagemeyer, Head of the Prevention Team, regards our rapid reaction as a crucial factor in this pleasing outcome.



“Implementing preventive measures at an early stage, making decisions quickly and moving swiftly to react to the dynamic changes in the pandemic – we believe these elements were the key to our success.”





## Creating connections despite SARS-CoV-2: a stress test for procurement

In addition to protecting our employees as effectively as possible, another major challenge of the pandemic lay in maintaining our ability to fulfil orders despite the difficult conditions. Although the mothballing of production lines in various sectors we would usually supply led to sharp drops in demand at times, many customers still required our 360° joining technology. In these uncertain times, it was therefore more important than ever to ensure the stability of our supply chains for both raw materials and fasteners. We also established an

interdepartmental procurement taskforce that made it possible to quickly agree various measures to minimise the risks.

## Global pandemic presents global supply chain issues

As a corporate group with operations around the world, we have a global network of suppliers. Although this is one of the basic conditions of our ability to provide our wide-ranging product portfolio in 'normal' times, it created further obstacles during a global health crisis. Ultimately, the COVID-19 pandemic led to lockdowns in various countries, followed by production shutdowns and border closures. Consequently,

some of our suppliers were temporarily unable to continue production activities or deliver internationally. It was at this point that our decision to establish a multi-sourcing strategy prior to the pandemic paid dividends. We maintain long-term supply relationships with numerous suppliers for all product groups. This meant that, if one supplier was unable to fulfil our orders at the height of the pandemic, such as due to a local lockdown, we could quickly turn to alternative sources.

## Close coordination and flexible reactions prove decisive

"Generally speaking, we can say that good communication with all suppliers was more important than ever during the pandemic," says Akin Incesu, Head of Purchasing. "In the spring of 2020, we communicated with

our main suppliers in high-risk coronavirus areas on a daily basis to discuss production status and the current transport situation." This made it possible to react flexibly and implement swift countermeasures, such as bringing orders forward. We also increased our stock levels of many critical components and developed additional safety stocks. This was an effective means of preventing shortages.

Viewed as a whole, we overcame the pandemic without any significant supply disruption. We are now using the experience gained over recent months to work with all our suppliers to ensure we are even better prepared for exceptional circumstances in future.



» **Our aim was to remain a dependable partner to our customers despite the wide-ranging challenges in recent months – in terms of our supply capabilities, product quality, service and support. We've done just that.** «

Akin Incesu,  
Head of Purchasing

# We are shaping the future through successful connections



How can a company safely navigate a global crisis like the COVID-19 pandemic? At Böllhoff, we believe that resolutely staying the course is decisive. We must reflect on our strengths and build on them in order to stay afloat in rough seas.

Creating successful connections and thus shaping the future: this has been our core skill for almost 145 years. Innovation, progress and customer focus are the cornerstones of our commercial success. In spite of the challenging conditions, we continued to reinforce these cornerstones in 2020. The following chapters offer detailed insights into various projects and achievements over the past year.

Our company-wide service concept of 360° joining technology guides everything we do. No matter what parts our customers want to connect, we provide the perfect complete solution.

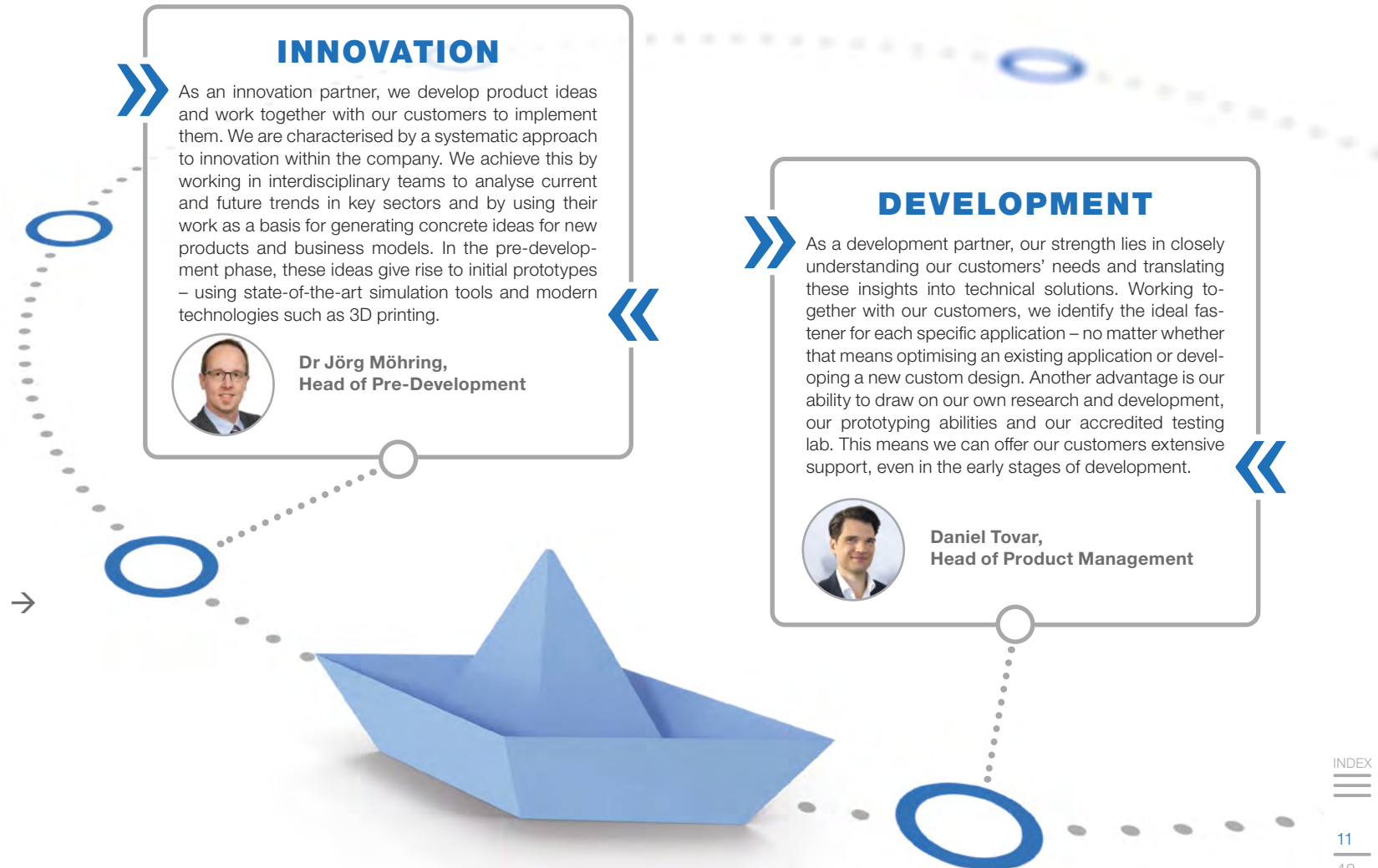


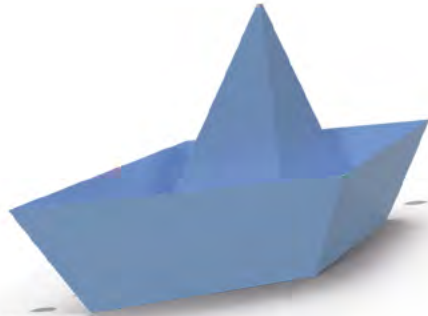


## Connections create value

As a partner for joining technology, we always stand ready to assist our customers when it comes to connecting parts to form a whole. We have a wide-ranging portfolio of innovative products, assembly solutions, logistics solutions and supplementary services.

In addition, we support our customers throughout their entire value chains in line with their requirements. We call this holistic approach 360° joining technology. In this section, eight experts explain what distinguishes our 360° joining technology.





## LOGISTICS

As a logistics partner, we oversee all aspects of supplying fasteners to our customers – from supply scheduling to delivery at the assembly line. Our ECOSIT® distribution system features state-of-the-art RFID technology and a modular structure. Customers can select additional options according to their specific requirements – such as the ECOLABEL electronic shelf label or ECOFREIGHT, our sustainable freight concept in which we use absolutely zero wood, paper or cardboard packaging.



**Mario Graß,**  
Innovation Manager

## PURCHASING

Choosing Böllhoff as their purchasing partner enables our customers to significantly reduce purchasing and provisioning costs for fasteners. Not only do they benefit from our wide-ranging product portfolio and the high standards we demand from our global supplier network, they can also take advantage of other services, such as our ECOSIT® distribution system. No other company on the market combines the characteristics of an international provider of process-optimising solutions with the characteristics of an innovative manufacturer of high-quality products – and a passion for successful joining.



**Akin Incesu,**  
Head of Purchasing

## ASSEMBLY

To us, being an assembly partner to our customers means offering them not only fasteners but also well-suited assembly systems – all from a single source. We place a strong emphasis on offering a carefree, full-service package. If one of our customers decides to incorporate automated assembly systems in their production lines, our experts will provide support throughout the entire process. This involves spending time on the customer's site, providing personal contact. Many of our customers value this close cooperation and so remain loyal to us for many years.



**Marion Keiser,**  
Head of Project Management,  
Automation

## QUALITY

Systematic quality management is a cornerstone in our corporate philosophy; it is a fundamental building block that allows us to serve as a quality partner to our customers. We are always working to improve products and processes according to our customers' needs. To achieve this, we examine all processes from end to end. Our guiding mission of 'know your customer' means that our customers are always at the heart of our management systems. We have also been certified in accordance with the recognised quality, environmental, energy and occupational standards in our customers' sectors.



**Christian Hagemeier,**  
Head of the Corporate  
Management System

## QUALITY

Our laboratory is always available to support our customers whenever they require independent testing of connections and fasteners. We test fasteners made from all manner of materials using numerous recognised test procedures, from mechanical tests to corrosion tests and damage analysis. Whether the parts to be tested are made by Böllhoff or another manufacturer, our customers can always rely on our years of experience and our scientific expertise. This is further evidenced by our DIN EN ISO 17025:2018 accreditation.



**Dr Cornelia Heermant,**  
Head of the physical-technical  
test laboratory

## SERVICE

As a service partner, we support our customers around the world with technical solutions, maintenance and repairs. When handing over our system solutions comprising fasteners and assembly systems, we provide extensive training for operators and maintenance specialists to ensure our customers can make optimal use of our systems. And, if an issue should arise during operation, our customers can contact us via telephone around the clock. If the situation is urgent, we can reach our customers anywhere in Europe within 24 hours.



**Alexander Ferber,**  
Head of After Sales



# Taking big steps towards new horizons

We strive to develop innovative solutions to give customers the best possible support. Nowadays, companies seeking to meet this aspiration must be willing to explore new digital avenues. This is why we founded an independent innovation and investment company in 2020: Archimedes New Ventures.



Led by Managing Director Marcel Rösner, Archimedes New Ventures considers itself a forge for digital ideas. The daily work of its six-person team is primarily centred around three pillars:

- 1. Developing new digital business models.**
- 2. Improving digital skills within the company.**
- 3. Fostering promising digital start-ups.**



» In the next five years, we hope to establish a constantly growing network of teams and companies capable of successfully bringing digital products and solutions to market. This will create synergies with the existing Böllhoff service portfolio and make an important contribution to future-oriented and sustainable corporate development. «

Marcel Rösner,  
Managing Director, Archimedes New Ventures



# JOINECT

## First digital business idea, **Joinect**, gathers pace

Developing digital business models is at the core of daily work at Archimedes New Ventures. The innovation-oriented company aims to use new digital solutions to open up new fields of activity for our corporate group. Nor is its focus limited to the field of joining technology.

“Our guiding principle in developing new business models is to remain as close to our core business as possible while being as disruptive as necessary.”

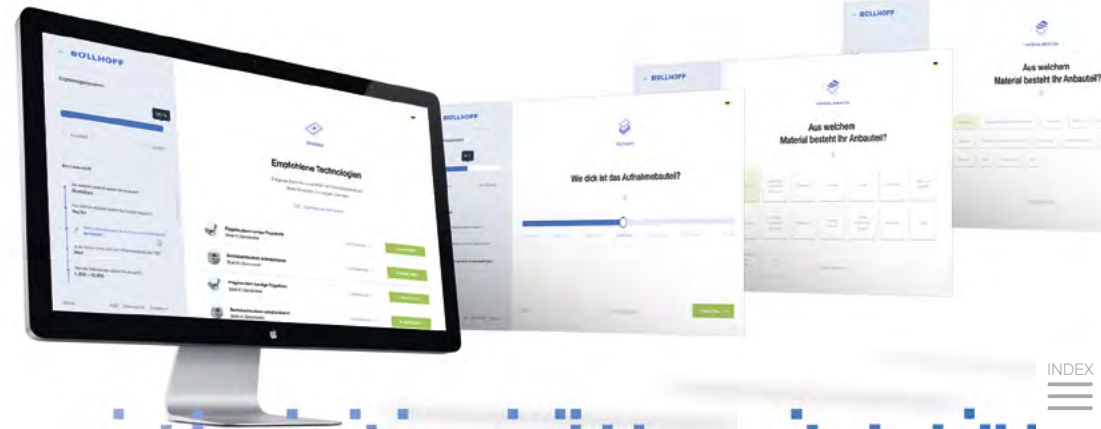
Michael W. Böllhoff, Managing Partner of the Böllhoff Group

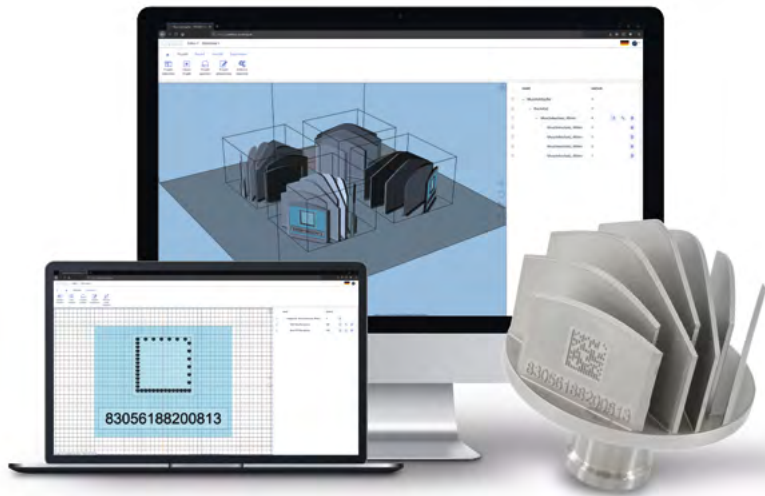
It is therefore entirely possible that future solutions will extend beyond our core competency of creating successful connections.

However, the first digital business model supported by Archimedes New Ventures, a joining technology advisor called Joinect, is still closely related to our core business. Joinect aims to launch a software tool online in the spring of 2021 to transfer Böllhoff's application-specific advice into the digital world. As its name suggests – Joinect is portmanteau of 'join' and 'connect' – the tool will use online questionnaires to help design engineers find the best joining solution for their specific application. The game-changer, however, is that all its recommendations are based on decisions taken by an artificial intelligence. The AI behind Joinect refers to comprehensive technical product data and uses this to select suitable fasteners from the Böllhoff product portfolio.

In the consultancy process, users click through a series of online questions. These relate to specific requirements for the connection that the fastener must establish. For each question, the user can choose from a number of predefined answers. Depending on the user's responses, the AI then selects further questions from its question pool. At the end of the process, Joinect recommends one or more fasteners suitable for the user's application. The user then has the opportunity to contact our sales team directly and download CAD data about the products.

Yet, despite the possibilities that Joinect offers, this digital advisor cannot replace conventional advice in one-to-one conversations, nor is that the intention. Instead, Joinect will be able to provide solutions for common applications. At the same time, the tool will provide an additional point of contact for customers looking to obtain useful information ahead of an in-person consultation. Of course, the COVID-19 pandemic has at least demonstrated how important digital communication channels have now become.





## Interest acquired in innovative start-up **Additive Marking**

In addition to supporting internal ideas, Archimedes New Ventures also promotes promising start-ups outside the company. As Marcel Rösner says:

“We are also interested in people who have the passion to build companies that can transform entire market segments.”

People like Ulrich Jahnke, Matthias Habdank and Philipp A. Bornefeld – the three founders of Additive Marking, a young company from Paderborn, in which Archimedes New Ventures acquired an interest in May 2020. Additive Marking offers product labelling solutions for 3D printing.

In an age when the number of 3D-printed components is constantly rising, it is increasingly important that companies can clearly label these products and trace them throughout the entire product life cycle. However, conventional techniques using lasers, engraving, etching or stickers

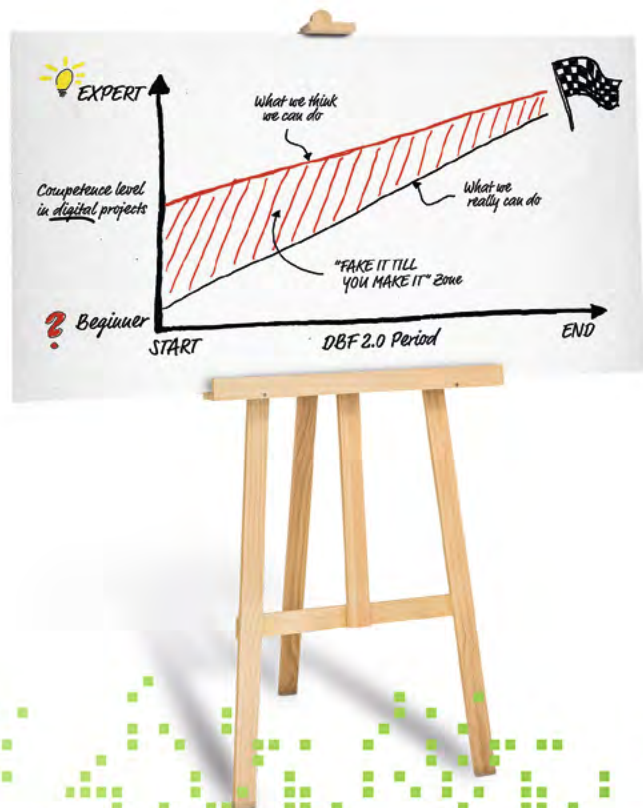
involve additional worksteps after the manufacturing process. This means extended production times, increased costs and a higher error rate.

This is where Additive Marking's software solution comes in. It makes it possible to label 3D-printed components directly during the printing process – in a cost-neutral manner and in line with customer wishes, such as with QR codes, names, logos or combinations of numbers. The label is simply marked as part of the printing process and is therefore inseparable from the component in question. Marcel Rösner is excited about the solution:

“We hope to use Archimedes New Ventures to identify promising business models like this one and promote them with our support.”







## How it all began – fuelled by the **Digital Bluefield** project

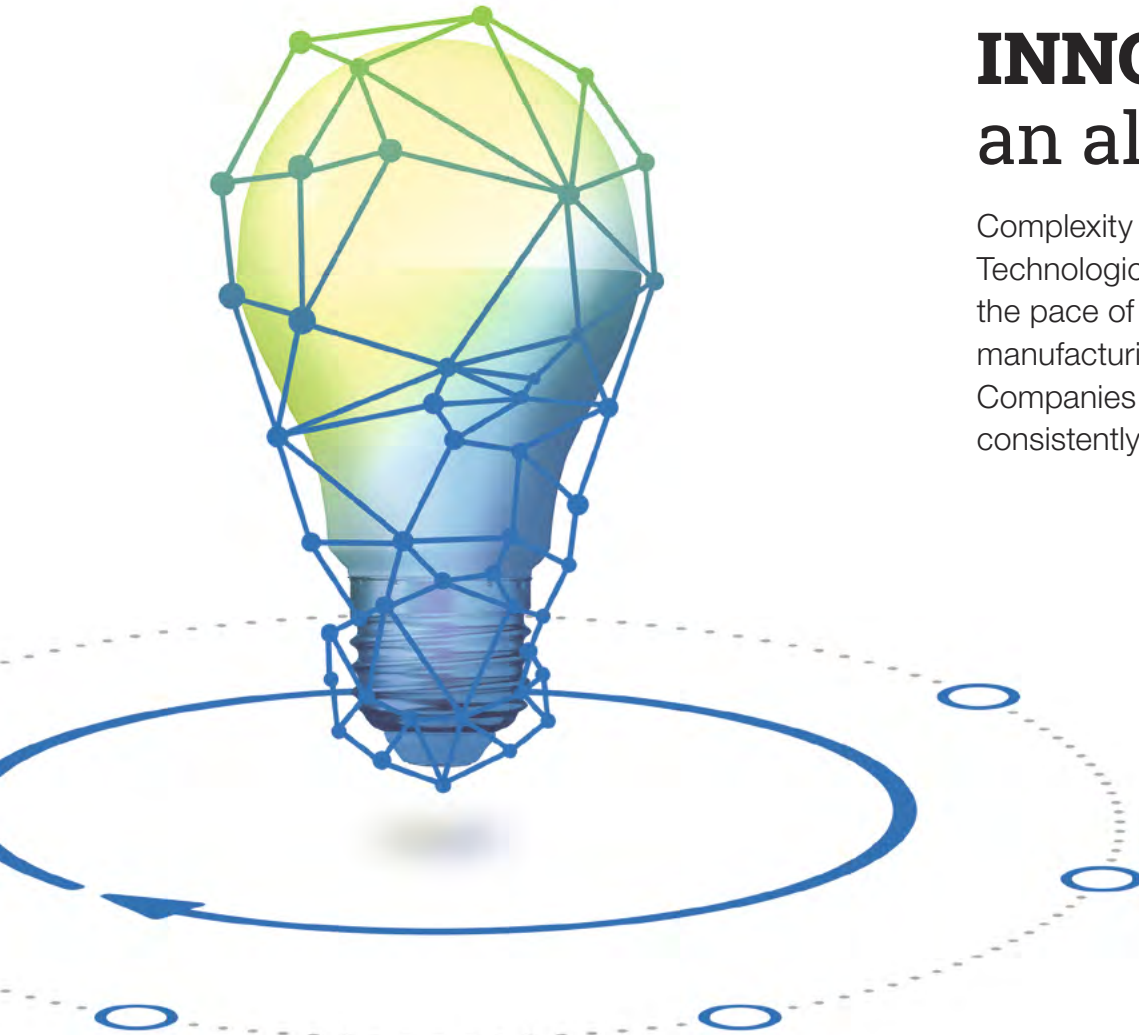
Archimedes New Ventures grew out of the Digital Bluefield pilot project launched in 2019. This project methodically trained a select group of employees who worked to develop digital ideas and business models for one year – in close collaboration with external experts from the consultancy 'minds and maker'. It also gave rise to the initial idea for the joining technology advisor tool, Joinect. This concept was then refined, leading to the foundation of Archimedes New Ventures to create an environment in which digital business models like Joinect could grow alongside one another.

Following successful completion of the first round of the Digital Bluefield project, the second round began in autumn 2020. This round is now being overseen by Archimedes New Ventures and aims

to yield further digital business models for Böllhoff in future. As in the first Digital Bluefield project, we are betting on our employees' creative potential and expertise.

» **Our employees are our most important drivers of innovation. We therefore hope to continue integrating them closely in the development of new business models.** «

Wilhelm A. Böllhoff,  
Managing Partner of the Böllhoff Group



# INNOVATIONS: an alliance with the future

Complexity and speed are two key characteristics of our globalised world. Technological progress is unfolding at an exponential rate. At the same time, the pace of production-development processes is accelerating, while manufacturing cycles and product life cycles are becoming markedly shorter. Companies are therefore faced more than ever with the challenge of being consistently innovative in order to keep up.



In this interview, Dr Jens Bunte, member of the Board of Management and responsible for research and development, provides an insight into innovation management at Böllhoff, the innovations created in 2020 and the importance of our products for electromobility.



## There are countless definitions of 'innovation'. How do we understand innovation at Böllhoff?

**Jens Bunte:** To us, innovation is when an invention – perhaps a new product or a new process – can be turned into a source of revenue. This means that we only consider ideas to be innovations if there will ultimately be a market for them. They solve a specific problem for our customers and thus generate demand.

## In your view, what role do innovations play in business success?

**Jens Bunte:** The importance of innovations to our success is inestimable, which is why innovation is firmly anchored in our strategy. As a problem-solver for joining technology, we strive to supply each customer with the perfect fastening solution – no matter what components they want to connect. If we don't yet have an appropriate solution in our product portfolio, our project managers will engage closely with the customer to analyse their requirements. We will then develop a solution precisely tailored to the application in question.

However, as each product generation presents our customers with new challenges

in respect of connecting specific components, our approach inherently requires us to be innovative. Always finding new solutions. Only then can we give our customers the best possible support.

On average, we monitor around 50 ongoing major innovation projects in the company at any one time. And that doesn't include smaller, more manageable projects. That figure shows that we don't just stumble across innovations by chance. Instead, we systematically generate new ideas and plan for the long term – such as by deliberately developing innovative solutions for different market segments.

## What measures are in place to promote innovation within the company?

**Jens Bunte:** We use an array of methods, including our innovation steering committee and the Euro Innovation Contest, to name just two examples.

The innovation steering committee meets twice per year. It gives developers and project managers the opportunity to present their ideas for new products to a European management body at an early stage in their development. The body then decides which ideas are most promising and should therefore be supported. We generally look

at around 25 innovation projects at each committee meeting.

At the Euro Innovation Contest, we award prizes to innovations that have already been applied in practice. This event has taken place every two years since 2012: the last edition was in January 2020 – just before the COVID-19 pandemic gripped Europe. It usually involves around ten teams from across Europe. Each team presents an innovative joining solution or process innovation which might have grown from a customer project, for example. An expert

jury then awards the 'Best of Innovation' award to the outstanding entry. In addition to the top prize, the teams that finish on the podium enjoy additional rewards, such as team events.

These measures and others like them ultimately have one goal: to promote the culture of innovation within the company. We want to encourage the people who know our internal processes and hidden potentials better than anyone else to take part. People with deep expertise in their specialist fields and who work in close dialogue →



with our customers. By this, I mean our employees. I have been delighted by the great willingness our employees have shown in developing their own ideas.

**What elements characterise the culture of innovation you mentioned at Böllhoff?**

**Jens Bunte:** Trust is a decisive factor. In my view, the best way to cultivate innovative ideas is to show trust in your employees and let them ‘do their thing’. Our employees have an inexhaustible supply of good ideas. If each of them had to ask whether they could explore a certain idea or experiment a little, then many good ideas never get off the ground.

Of course, leaving people to ‘do their thing’ means that some ideas will fail. Ultimately, not every good idea turns into a successful innovation. How do we handle failure in the innovation process?

**Jens Bunte:** It is certainly true that failure and innovation are inextricably linked. Not every idea can be a massive success. It is important to facilitate this positive form of failure and still see each failed idea as a valuable contribution. Out of 10 good ideas, if

7 fail but 3 show a promising way forward, then we’ll be very happy indeed.

**All the same, surely you prefer it when ideas fail at an early stage in their development rather than later on?**

**Jens Bunte:** Of course. The later an idea fails, the longer we will have spent looking at the wrong topics. In an effort to avoid this, we have opened up our innovation process to external input in recent years, in line with the concept of open innovation. In addition to existing strategic partnerships with leading research institutes and universities, we have also integrated our customers at an increasingly early stage in innovation processes.

In 2018, we introduced our own format – the Innovation Forum – to support this work. This involved presenting new developments to decision-makers in the automotive industry at a very early stage before gathering digital, anonymised feedback. The direct dialogue with our customers at this event gave us a great deal of valuable input. In truth, the Innovation Forum was conceived as a series of events that would take place every two or three years. Unfortunately, the COVID-19 pandemic got in the way of this in 2020. However, we

consciously decided not to hold a digital version of the Innovation Forum. The direct dialogue with our customers we hope to achieve through this format works best when participants are able to discuss matters in person. The second edition of the Innovation Forum will therefore be added to our agenda as soon as such events can take place safely again.

**What products did this systematic approach to the topic of innovation yield in 2020?**

**Jens Bunte:** To give one example, in 2020 we developed a new generation of processing systems for our fasteners. This concerns a hand tool for positioning HELICOIL® thread inserts that both human workers and robots can operate. Let’s imagine that a company is starting small-series production of a new product. One worker can use the tool to position all the fasteners manually. If the series become larger and the production process is automated, the customer can simply connect the same positioning tool to a robot. There’s no need to convert a control system because the hand tool itself contains the interfaces to the higher-level control system. We have already successfully completed an initial pilot project.





In addition, we launched the new SITEC® product family in 2020. It comprises fasteners that absorb sound and vibrations, which could be of interest in relation to electromobility, for example. Reducing background noise is an even more important issue in electric vehicles than in vehicles with combustion engines. Ultimately, the sound of the engine, which might traditionally have hidden irritating noises, is almost completely eliminated.

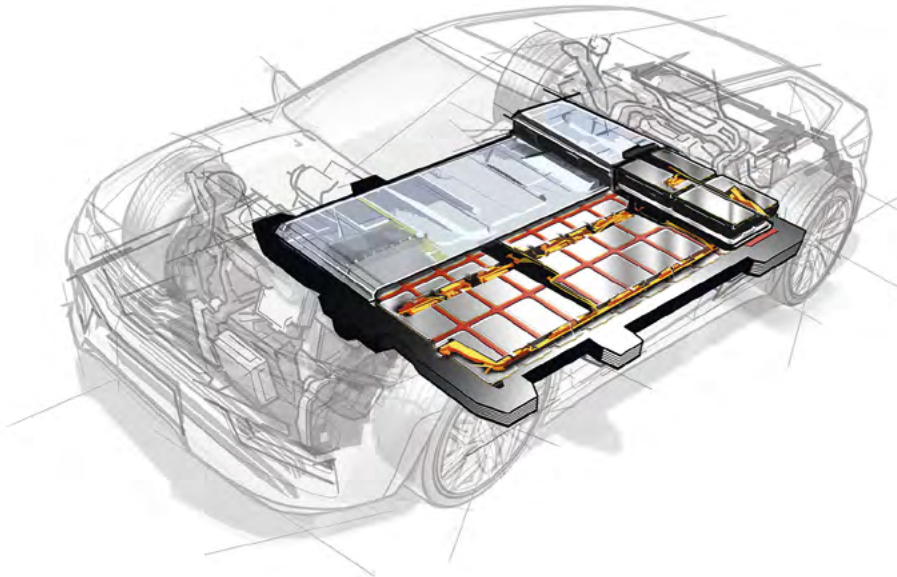
**As a megatrend, electromobility is defining automotive manufacturers' development activities. What significance do Böllhoff's innovations have for electromobility?**

**Jens Bunte:** We have been supporting the automotive sector with innovative joining solutions for many years, primarily in two specific areas. The first area is lightweight construction. We supply joining

technologies that create connections in modern lightweight bodywork. The second area is the topic of perceived quality. The potential applications for our fasteners range from tolerance compensation in mounting parts to vibration and noise decoupling.

Lightweight construction and perceived quality are also essential for electric vehicles. I have already mentioned SITEC®, the new product family for noise decoupling.

The significant dead weight of the batteries in electric vehicles means that the bodywork and chassis need to be as light as possible for the sake of driving dynamics. Our products are already used in numerous models of electric cars and enable lightweight construction, such as in EV battery trays. This is why we regard the transition to electric vehicles as an opportunity to continue shaping the forms of transport of tomorrow with innovative joining solutions.



# A fascinating blend of craftsmanship and technology

For more than 110 years, the vehicles produced by British automotive manufacturer Morgan Motor Company have combined two seemingly contradictory qualities to create a fascinating blend of traditional craftsmanship and functional modern technology. In production of its Plus Six model, Morgan relies on innovative joining technology made by Böllhoff: our RIVSET® self-piercing rivets.



Each  
Morgan Plus Six  
features a  
total of  
**1,610 fasteners**  
made by Böllhoff,  
including  
**440 RIVSET®**  
self-piercing  
rivets.



## Morgan – a British automotive icon

Since 1909, the Morgan Motor Company founded by Henry F. S. Morgan has built sports cars that today hold cult status. Each of the 800 cars the company produces each year in Malvern, United Kingdom, are made by hand and live up to the highest standards of innovative, modern technology. Combined with the company's unique passion, each Morgan is a unique specimen.

## The road to the Morgan Plus Six

Morgan is the only company anywhere in the world that builds its vehicles around an ash wood frame – a technique that dates back to the construction of horse-drawn carriages. The other main materials used to build Morgans include aluminium and leather. In 2000, the Aero 8 became the first model based on an aluminium frame. It was followed in 2019 by the Plus Six – another quantum leap forward.

The new aluminium platform in the CX generation delivered a 100% increase in torsional stiffness compared to the previous version. Without adding any weight and in combination with a latest-generation 3.0-litre turbo engine from BMW, the Plus Six is the most dynamic model Morgan has produced to date.

However, manufacturing this aluminium frame presented Morgan with new challenges. In the first stage, Morgan fixed the individual aluminium components in place using a special adhesive before joining them. This required a joining

technique capable of producing high-strength connections without pre-drilling – while the adhesive was curing.

## Böllhoff's solution:

RIVSET® self-piercing rivets –  
high-strength and process-reliable

RIVSET® self-piercing rivets use a technique based on joining technology. They create high-strength mechanical connections between both identical and dissimilar materials. In addition, they can create multi-layered connections – as in this case, where the adhesive forms an intermediate layer.

In a single step, the semi-tubular rivet pierces through the upper layers of the workpiece while making an undercut in the lower layer, thereby forming the characteristic closing head. It does not punch a hole in the lower layer of material, thus creating a gas-proof and liquid-proof connection. As Morgan manufactures its vehicles by hand, the RIVSET® Portable hand tool is the perfect addition to ensure successful processing.

As joining experts, we were involved in development from the beginning. Due to the high requirements placed on the car's bodywork, Morgan opted for RIVSET® self-piercing rivets as well as RIVKLE® blind rivet nuts and RIVQUICK® blind rivets.



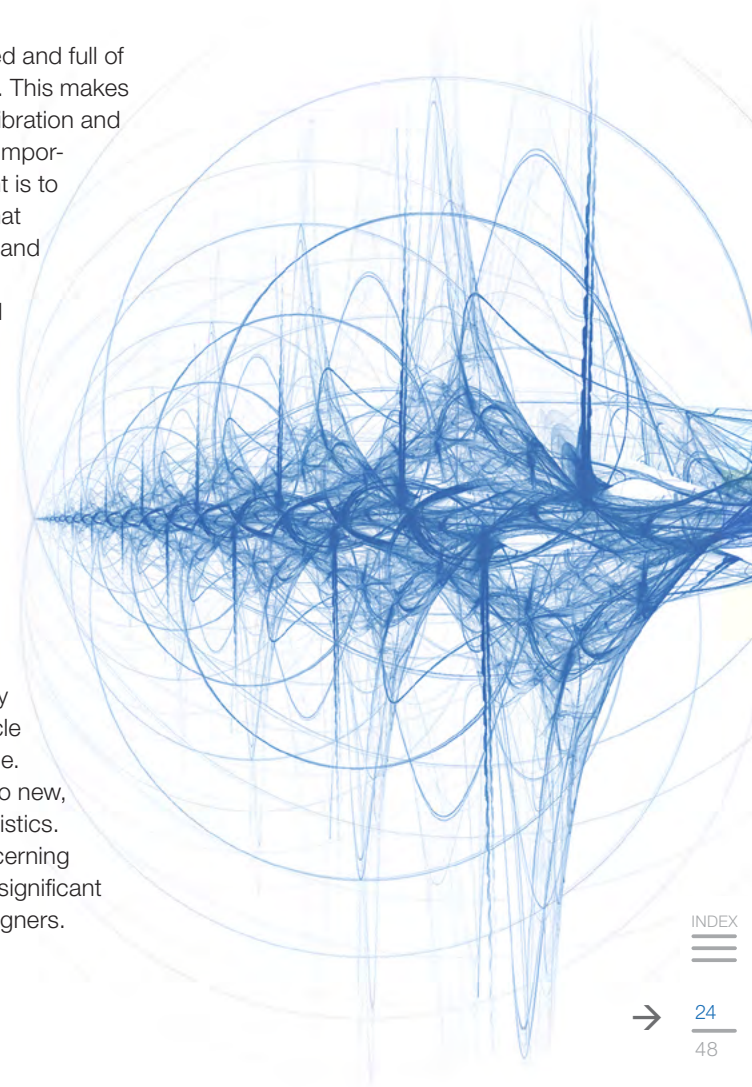
# Keeping active, even as the world holds its breath

## Two perspectives on silence.

Silence is important for us humans. However, it takes on an entirely different significance when it comes about because the world is holding its breath. In 2020, the COVID-19 pandemic stunned virtually the entire world into a state of paralysis, forcing companies in many countries to shut down operations. Yet despite the severe restrictions, we stayed active and innovative. This enabled us to systematically develop our product portfolio.

In a world that is usually fast-paced and full of noise, silence is a factor of quality. This makes the development of NVH (noise, vibration and harshness) solutions all the more important. The aim of NVH development is to prevent vibrations. It is an issue that runs through all industrial sectors and product segments, from washing machines to cars, aeroplanes and wind turbines, because excessive vibrations and the resulting noise cause problems. This can have a negative impact on a product's performance, potentially causing it to wear more quickly, work less efficiently or, in extreme cases, have a shorter service life.

If we take the example of vibration engineering in cars, for example, we can see a particularly wide range of requirements. Vehicle acoustics is a highly complex issue. Electromobility is also giving rise to new, rather different acoustic characteristics. Finding answers to all issues concerning vibrations and acoustics poses a significant challenge for developers and designers.





## A new product group – sworn to silence

As an expert on connections, Böllhoff hopes to provide answers. While our fasteners may be small, they play a major role in this context. Stop the development project because of the coronavirus? That was simply not an option.

Despite the difficult conditions caused by the COVID-19 pandemic, our plastics engineering segment continued to generate ideas and develop, produce and test new products. The work focused on the vibrations produced by actuators such as pumps, compressors and motors. The result is SITEC® – a new product group of vibration and noise-decoupling fasteners.

The developers of this creative innovation dovetailed with marketing specialists in the pre-launch process and, in the second stage, the product launch. This work included creating a concept for the product group's commercial launch. We identified and targeted the most relevant analogue and digital touchpoints in the customer journey based on the product and the target group. This comprehensive process

was completed by integrating sales specialists, ensuring a transfer of product knowledge and, of course, measuring the campaign's success.

The fact that it was not 'business as usual' heightened our focus on the future. We are firmly convinced that, despite the negative effects, every crisis leaves behind a positive story.

New product group in the Böllhoff portfolio:

# SITEC®

Fasteners for vibration and noise decoupling



# From Vogtland to the world

Expanding production and logistics capacities around the globe has been one of Böllhoff's central topics in recent years. We implemented an extensive investment program to this end in 2018 and 2019. A key part of this was our newest logistics centre, situated in Oelsnitz in the Vogtland region of eastern Germany.

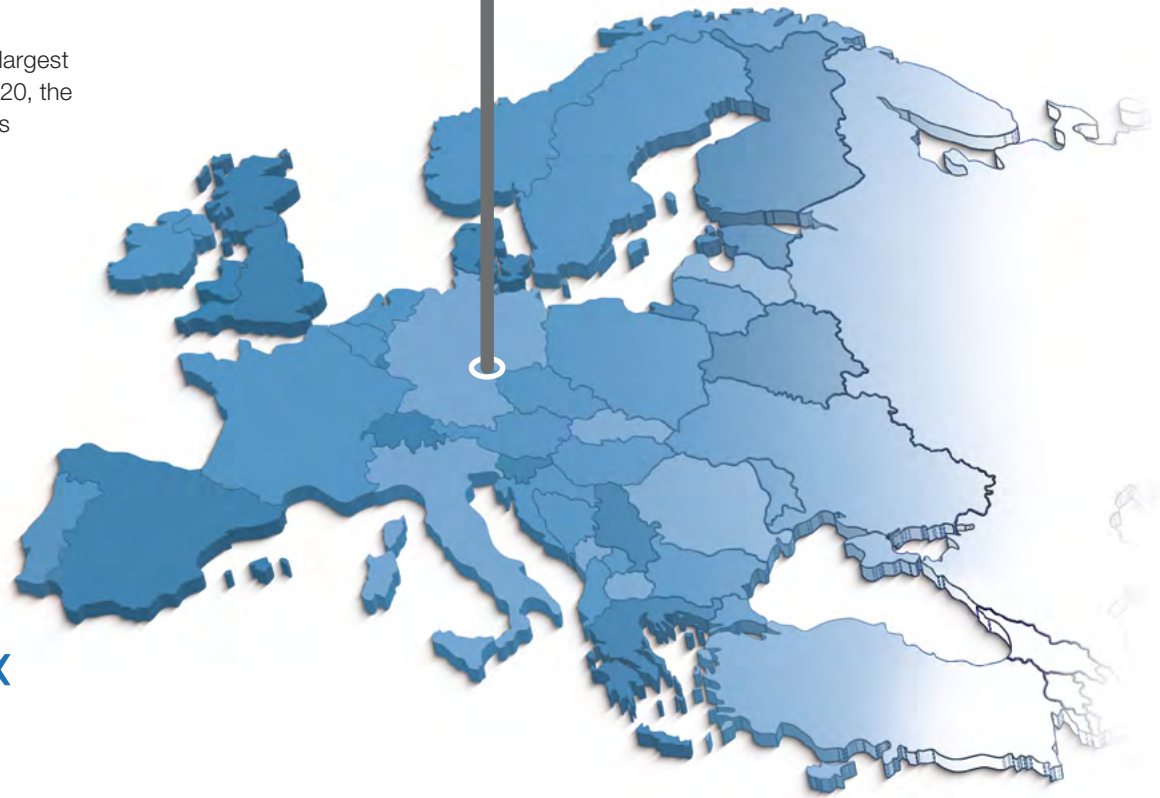
The complex is the result of an investment in excess of 40 million euros – the largest single investment in our company's almost 145-year history. By December 2020, the logistics centre had been operational for over a year. We would like to take this opportunity to give you an insight into our largest logistics site.



Jens Schöne,  
Managing Director  
Böllhoff Logistik GmbH

» Commissioning our new logistics centre presented numerous challenges, as we completed the migration to our new site with ongoing operations. On the one hand, we had to put new equipment into operation and introduce new processes; on the other hand, we obviously had to remain 100% capable of supplying our customers. However, thanks to outstanding teamwork from everyone involved, we were able to accomplish this considerable task. «

**CENTRAL LOCATION**  
in Europe for optimal logistics connections  
to surrounding markets.





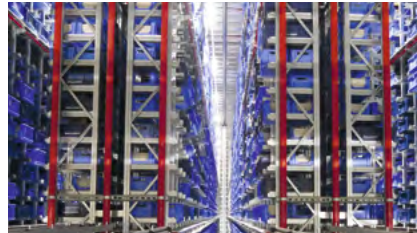
- 1** **Narrow-aisle warehouse**  
Space for 20,000 pallets.  
Rack height of 17.5 metres.



- 4** **Packing areas**  
Ergonomically designed to prevent back strain.



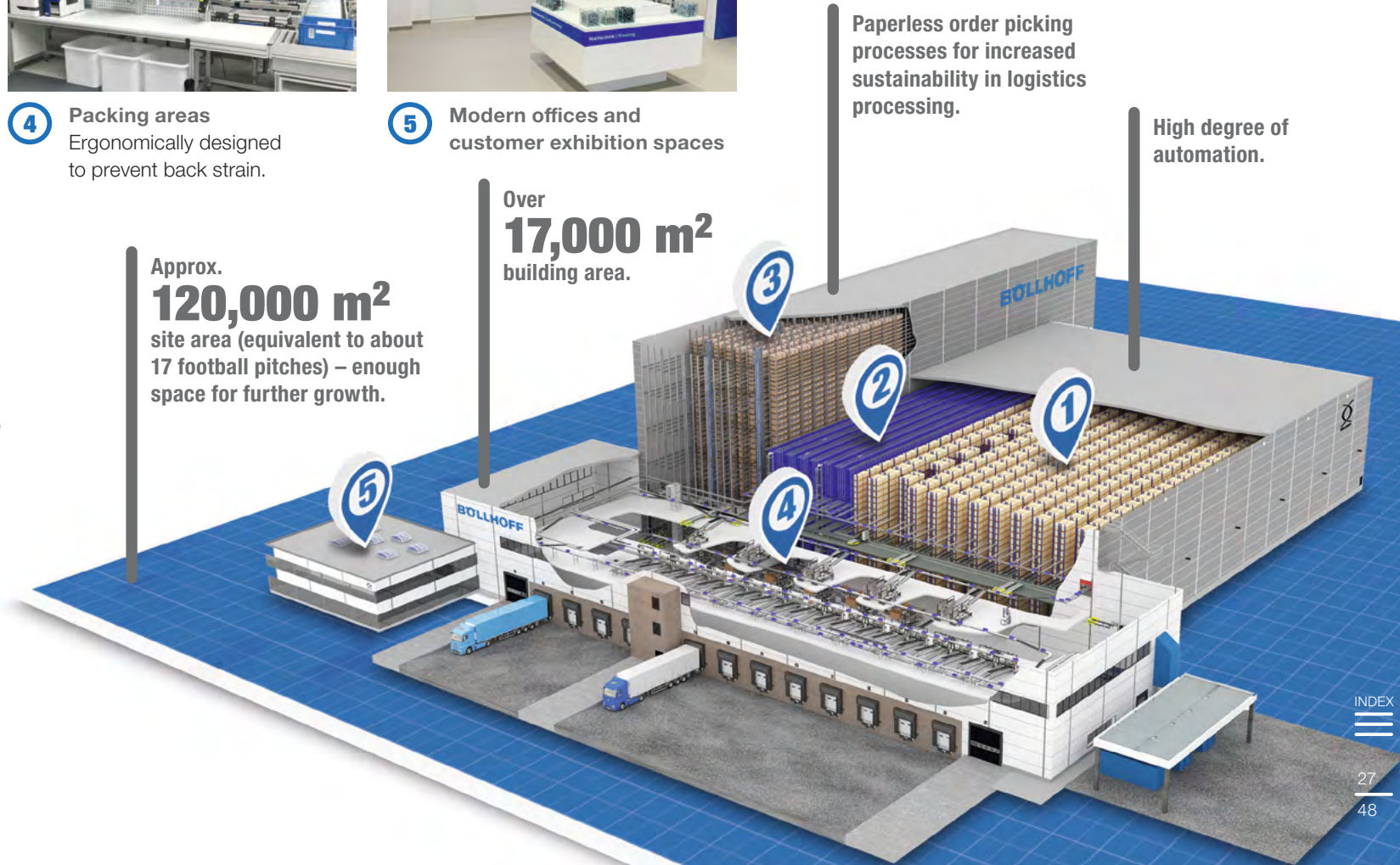
- 5** **Modern offices and customer exhibition spaces**



- 2** **Automatic small parts warehouse**  
Space for 220,000 small load carriers. Stacker cranes move at up to 6 metres per second (approx. 21 km/h).



- 3** **High-rack warehouse**  
Space for 24,000 pallets.





## Securing sustainable supplies of fasteners:

# ECOSIT®

As a fourth-generation family-run business, Böllhoff thinks long-term. A sustainable approach and responsible action are firmly anchored in our values and our strategy. We know that the commercial decisions we take today shape the world of tomorrow.

This is why we emphasise sustainability in our processes throughout our company. Logistics is an important lever we can use to conserve resources and reduce emissions. Shipment volumes around our globalised world have risen continuously over recent decades.

With our ECOSIT® (ECONomic Supply In Time) distribution system, we oversee the entire supply chain for fasteners on our customers' behalf, from scheduling to delivery at the production hall. Customers can initiate a repeat order whenever they need simply by scanning an RFID label. Each year, we constantly fill over 260,000 small load carriers with new fasteners through our ECOSIT® systems alone. This makes it all the more important that

we transport these goods to our customers in the most resource-efficient way possible. That is precisely the aim of the latest generation of our ECOSIT® RFID system, to which we have added the sustainable ECOFREIGHT transport concept.

### For the future of forests

In the ECOFREIGHT concept, all small load carriers are transported on durable, reusable plastic pallets. Both the containers and the pallets are made from 100 percent reclaimed materials, i.e. recycled plastics. By giving up the customary wood europallets, we save around 7,000 m<sup>2</sup> of



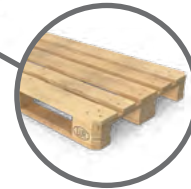




## OLD SYSTEM



25 litres of crude oil  
for 1,500 metres  
of stretch wrap



One tree for  
40 pallets

forest from deforestation each year. This is slightly less than the area of a football pitch.

## For lower resource consumption

ECOFREIGHT pallets feature integrated load restraints. The reusable lid with integrated lashing straps eliminates the need for stretch wrap, which is commonly used to stabilise loads. Stretch wrap is manufactured from crude oil. Our ECOFREIGHT concept thus allows us to save around 50,000 litres of crude oil per year – enough to fill two tanker trucks.

## For lower CO<sub>2</sub> emissions

Compared with past ECOSIT® systems, the CO<sub>2</sub> emissions from our current distribution cycles are markedly lower – by around 65 tonnes of CO<sub>2</sub> per year. This is in large part due to reducing the number of return journeys for empty containers.

Our small load carriers are also 10 percent lighter than the market average – with comparable carrying capacity. This reduces fuel consumption in the delivery process, which in turn allows us to further reduce CO<sub>2</sub> emissions.

## For less waste upon delivery

Like our pallets, our containers are also reusable. Each container can be reused more than 50 times, making them significantly more sustainable than single-use packaging such as cardboard boxes. In addition, the design of our small load carriers means that they can be safely stacked together, even with containers of different sizes. There is also no need for additional filling materials such as film or paper. This allows us to reduce the amount of waste upon delivery.



## Building relationships with bits and bytes: digital routes to our customers

Empty conference halls, deserted customer exhibitions and desks left unoccupied – common sights for companies all around the world in 2020. The battle against the COVID-19 pandemic limited face-to-face communication more than any other event in recent decades. Meeting in person is often the most important form of contact between companies and business partners, but often fell by the wayside over the last year. Companies were forced to find replacements for proven customer touchpoints such as trade fairs and site visits, and to expand the range of alternatives.

Digital routes to our customers have played an important role in our marketing mix at Böllhoff for some time. In the year dominated by the pandemic, online seminars became even more important for us. We will also add further digital points of contact in future, such as virtual trade fairs and events. Using bits and bytes to build customer relationships was part of our model for the future long before SARS-CoV-2.

### Online seminars: virtual transfer of knowledge about joining technology

We cover a broad spectrum of topics in our online seminars – from our 360° joining technology to the product DNA of our renowned HELICOIL® thread insert. All of our seminars have one thing in common: in 30 to 45 minutes, they teach an interested audience watching the livestream all manner of facts about a specific area of joining technology. The interactive dialogue format makes it possible to explore customer requirements and wishes at any time. The seminar participants benefit from the direct exchange with our product and application experts, who can even shed light on detailed questions regarding technical specifics or practical uses.

Following the cancellation of trade fairs in 2020 as a result of the pandemic, we expanded our online seminar offering over the course of the year. We have also added new seminar series on topics such

as successful C-parts management using our distribution system. In an effort to implement our new seminar formats faster and with greater flexibility, we have also set up our own film studio at our headquarters in Bielefeld. Situated in a former production building, the studio offers sufficient space for us to continue expanding our online activities.

In 2020, we welcomed over 700 interested participants to a total of 25 events promoting a transfer of knowledge about joining technology. The positive feedback we received has reinforced our decision to establish further seminar series in 2021. There are numerous topics in the pipeline, such as the services offered by our physical-technical test laboratory. In addition, we recently brought our technical online seminars together under a new banner: JOIN.able. From product launches to innovations and the latest trending topics, our JOIN.able seminars will convey useful knowledge for technicians in compact, 30-minute sessions.

## Move forward dialogue – digitally, not analogue

In early 2020, we came up with the idea of a new roadshow by the name of 'Move forward dialogue'. The idea was to present fresh product ideas and new technologies to customers

before the official market entry. In the interests of an open dialogue, the events should allow for a direct exchange of ideas on product concepts and prioritise potential customer applications.

However, as the COVID-19 pandemic made in-situ visits impossible, we swiftly decided to get the show on the road by switching 'Move forward dialogue' to a digital format. In autumn 2020, we started with virtual product presentations followed by digital discussion forums. Today, we can look back on numerous fascinating events with an international audience of customers – with more to follow in future.

## Trade fairs and events of the future: in person or virtual?

In light of the pandemic, trade fairs could not take place as usual in 2020. Major fairs and conferences that would otherwise have been important industry meeting points were cancelled for much of the year. We are convinced that major trade fairs will remain relevant in future as a source of inspiration for future topics and a platform for dialogue. However, they will be increasingly supplemented by digital event concepts. The time of the pandemic has shown that a dialogue between industry experts can take place in virtual settings, which come with their own advantages. For example,

time demands and costs are reduced for exhibitors and visitors compared to traditional trade fairs.

Consequently, we will rely on a combination of real-world and virtual industry events in future. We are currently working with a renowned digital agency to develop online spaces for various event types. From digital trade fairs to online talks and virtual symposiums, we will be able to draw on a suitable setting.



» One of our central challenges in 2021 is establishing the Böllhoff brand more firmly in the digital world using virtual events. The COVID-19 pandemic has further accelerated digitalisation; we will not see the marketing world regress to the way it was before the pandemic. «

Johanna Neumann,  
Head of Product Marketing

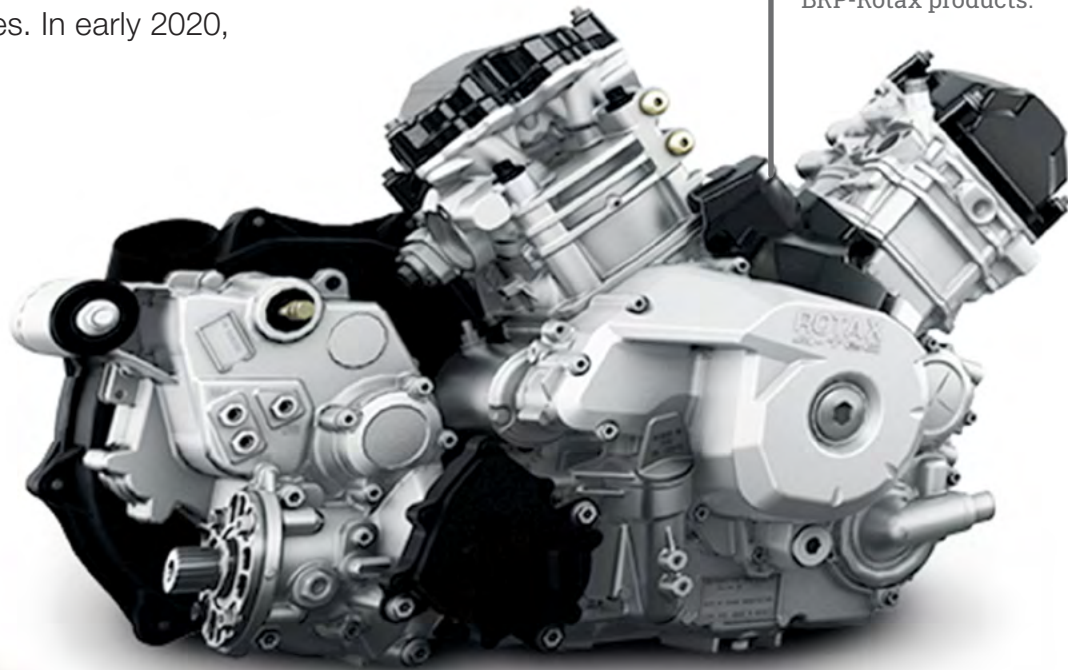
# International collaboration

BRP-Rotax and Böllhoff have been connected by a close supply relationship in Austria for more than three decades. In early 2020, this success story was expanded to Mexico.

Approx.

# 120

different fasteners from Böllhoff Mexico are used in the construction of BRP-Rotax products.





# We get your heart beating.

For BRP-Rotax, a company based in the Austrian town of Gunsirichen, this is both a motto and a promise. Founded in 1920 as a manufacturer of bicycle freewheel hubs, the company now specialises in innovative drive systems for powersports applications. From snowmobiles to off-road vehicles and ultra-light aircraft, countless means of transportation that get the heart beating are powered by drive systems born in Upper Austria.



We have been supplying the main BRP-Rotax factory in Gunsirichen with all manner of fasteners for over 30 years. In 2013, BRP – the parent company of Rotax – opened a new factory in Querétaro, Mexico. It produces Rotax motors, transmissions for offroad vehicles, drivetrains for personal watercraft and more besides. The factory's dynamic growth in recent years meant it had become essential to plan and procure supplies of fasteners in the direct vicinity.

## Automotive prowess meets joining expertise – in North America

The idea of transporting the effective collaboration between BRP-Rotax and Böllhoff across the Atlantic soon began to mature. So, we expanded the capacities of our own subsidiary in Querétaro. Thanks to a concerted transfer of knowledge between our locations in Austria and Mexico, we passed on our accumulated knowledge of special fasteners for BRP-Rotax to our colleagues in North America. Following an intensive period of preparation, deliveries from Böllhoff Mexico began in January 2020. We now supply around 120 different custom parts in various quantities to the BRP-Rotax factory in Querétaro.

In total, around 480,000 motors roll off the production lines at the two BRP-Rotax sites in Austria and Mexico each year, with our fasteners creating connections inside them.



# umlaut and Böllhoff ensure safety – even above the clouds

The HAFEX halon-free extinguishers manufactured by Hamburg-based umlaut SE are held in place by customer-specific TEPRO® brackets made by Böllhoff.



umlaut SE is a global, full-service, cross-industry company that offers technological and organisational advisory and fulfilment services to clients all over the world. In 2020, more than 4,500 employees across 50 locations around the world generated sales in excess of 400 million euros. Its customers include companies from the automotive, telecommunications, energy and aviation industries. As part of the umlaut brand, umlaut engineering GmbH in Hamburg has specialised in project management, mechanical and electrical design, calculations and technical documentation for international aviation.

## HAFEX – the halon-free fire extinguisher for aviation

In the 1960s, aeroplanes began to carry halon, an effective extinguishing agent, in hand-held fire extinguishers. We now know that halon contributes to the depletion of the ozone layer. The International Civil Aviation Organization (ICAO) and the European Union Aviation Safety Agency (EASA) therefore required all newly registered large-capacity aircraft to be fitted with environmentally friendly fire extinguishers from mid-2019. All aeroplanes should also be retrofitted by 2025.



The requirements were significant and time was short. This was motivation enough for the renowned agency umlaut to develop a halon-free alternative in partnership with Extinguish and the Anaf Group. The result is HAFEX – the smallest, lightest and most flexible environmentally friendly cabin fire extinguisher to date.

### Every success story needs a good hook

The new extinguisher is designed to allow more flexibility in installation than previous solutions. In accordance with a specification from the prominent certification body Underwriters Laboratories, fire extinguishers supplied to North America must always be delivered together with a suitable bracket. However, the brackets used in the past were heavy and made from rubber-coated metal screws that had to be laboriously screwed together.

Continuing the HAFEX success story therefore meant developing a new bracket. It had to be highly durable, easy to install, lighter than previous versions – and a compatible part of the overall HAFEX package. This was the perfect time to consult Böllhoff as an expert in joining technology. umlaut quickly realised the huge potential our TEPRO® product group held for its plans and projects.

### Böllhoff's solution: TEPRO® – individual technical plastic products

As a partner for 360° joining technology, and despite the far-reaching restrictions caused by the COVID-19 pandemic, we worked side-by-side with umlaut to create new, individual holders. From form

to colour and function, we incorporated all customer wishes in the brackets. In the planning phase, we used modern CAD systems to immediately implement all requirements. When it came to identifying a suitable material, we naturally took account of the specifications set by Underwriters Laboratories. We also optimised the injection-moulding technique to enable us to produce the bracket efficiently. We provided intensive support throughout all project phases.

The newly developed one-piece plastic TEPRO® bracket is highly durable, recyclable and weight-reduced. We send 5,000 units to Hamburg each year, meaning that – together with HAFEX extinguishers – we are keeping you safe.



» We would like to thank you for showing such commitment to delivering the prototypes according to the agreed schedule – especially in times like these. «

Ayesha Fazilath Fiaz  
Project Manager at umlaut SE





# Blue Sky Coming

Individual mobility is in the midst of a radical change. The call for sustainable mobility causes the market share of electrified vehicles to rise continuously. This also applies to China, the world's largest automotive sales market. Electromobility has been experiencing a boom there for years and domestic car manufacturers are playing a major role in shaping it. One of these manufacturers is NIO, a producer of electric vehicles in the premium segment. →





**Böllhoff has been working closely with NIO since 2014. Now we had the privilege of talking to Mr Feng Shen, Executive Vice President of NIO and Chairman of the Quality Management Committee, about his company, about the cooperation with Böllhoff and about future plans.**

**Mr Shen, what was the vision behind the foundation of NIO?**

**Feng Shen:** NIO is committed to a more environmentally-friendly future in which improved smart electric car technologies, coupled with a better car ownership experience, will drive increased appreciation and adoption of smart electric cars, leading to a more sustainable future for the planet.

We believe the future is in smart, electric and autonomous vehicles, and we aim to lead the way. That's why we established NIO in 2014.

**In addition to the elegant design of NIO's cars, the distinctive brand logo also catches the eye. What is the meaning of the logo?**

**Feng Shen:** NIO's Chinese name "Weilai" means "Blue Sky Coming" and this is represented in our symbol. The top part is about the sky, openness, vision, the future. The bottom part is about the earth, direction, action and forward momentum. The logo originated from our vision of a future filled with blue skies. Our mission is to shape a joyful lifestyle for our users. Blue Sky Coming is our guiding philosophy and stands for our commitment to a brighter tomorrow.

**NIO and Böllhoff have been working together since your company was founded in 2014. Why did you choose Böllhoff as your partner?**

**Feng Shen:** Böllhoff is one of the leading experts for fastening and joining technologies and can provide the overall technical solutions and services we need to manufacture our high-end products in line with our standards. As far as I know the details, we are using more than 520 Böllhoff fasteners adapted to our different models – ES8, ES6, EC6 and the new model ET7 – with many different applications. Therefore, Böllhoff is one of our bigger partners when it comes to fastening and joining solutions.

**What distinguishes the partnership between Böllhoff and NIO from your point of view?**

**Feng Shen:** We believe in long-lasting cooperation and partnerships to grow together.

**How many cars did NIO manufacture in 2020?**

**Feng Shen:** In 2020, we delivered more than 43,000 cars in total, an increase of 121% year on year, and we are further investing into production to increase our output. The market share in the field of pure EV cars is still relatively small and we do see a big potential market in the coming years. We have many new products and advanced





technologies in the pipeline which will help us on our future path of growth.

**Which advanced technologies are we talking about here?**

**Feng Shen:** One example is our newly developed 150 kWh battery, which we introduced during our last NIO Day in Chengdu, China, earlier this year. With this new technology, we are confident to reach a range of 1,000 kilometres plus with a single charge.

**In which direction should the partnership between NIO and Böllhoff develop in the future?**

**Feng Shen:** First of all, I would like to thank Böllhoff for all its support since the early beginning of NIO's journey and it is a great pleasure to work and develop together. Böllhoff focuses on new trends for fastening and joining solutions and this is what we need for our future development, too. Be assured that we will continuously cooperate with you on lightweight technologies and further localisation to create a win-win situation.

Mr Shen, thank you very much for taking the time to talk to us. We look forward to further cooperation.

**Feng Shen:** The pleasure was all mine and I wish us all the best of luck on our future journey of growth together. →



Feng Shen, Executive Vice President of NIO, and Sven Ammer, Managing Director Böllhoff (China) Fastenings Co., Ltd.



# Together into the electrified future





## Spotlights 2020



### 10 YEARS OF RIPP LOCK®

In 2020, we celebrated the 10-year anniversary of our RIPP LOCK® locking washers. Since 2010, they have ensured secure screw connections even when subject to high dynamic loads. Originally introduced as an alternative to less effective locking elements such as split washers and crown nuts, RIPP LOCK® washers have proven their worth in countless applications to date. The brand name RIPP LOCK® now covers an entire product family of screw-locking products. In addition to washers made from various materials, it also comprises screws, nuts and combination elements.



### ACQUISITIONS: ENGEL AND KAISER

We have strengthened our profile as an expert for 360° joining technology by acquiring two companies, Engel GmbH and Kaiser Spezialartikel GmbH. Engel is based in Weingarten, near Ravensburg, Germany, and trades in fasteners. As a wholesaler and full-range trader, Engel specialises in supplying goods to industrial and trade customers throughout Baden-Württemberg. The strengths of Kaiser, which is based in Arnsberg, lie in procuring special and custom parts, including for the oil, gas, chemical and mechanical engineering industries. Both companies will remain operationally independent and will retain their established brand names.



### COLLABORATION WITH GILLIS AEROSPACE

We have expanded our expertise in the aerospace sector by acquiring an interest in Gillis Aerospace, a French manufacturer of fasteners for the aerospace sector. We signed a participation agreement in January 2020 and the transaction was completed in early March. It is hoped that this cooperation will generate synergies, allowing both companies' customers in the aerospace sector to access a wider range of products and a more extensive service portfolio. We aim to expand this cooperation further in future – including through joint product development.



### CORPORATE EXHIBITION MODERNISED

We gave "World of Joining", our corporate exhibition at our Bielefeld site, a new look in the autumn of 2020. There, we take visitors on a voyage of discovery under the motto "Experience 360° joining technology up close". It provides an insight into our company's almost 145-year history along with sector-specific use cases for visitors to get to grips with. They can also try their hand at fitting a thread insert and using a blind rivet nut to insert a thread in a thin-walled metal component. We look forward to hosting many successful events as soon as possible – so that we can share our passion for successful joining.

Check out this video to gain a first impression of our redesigned exhibition:



### MASK DONATIONS

As the COVID-19 pandemic endures, medical staff continue to do outstanding work. This makes it all the more important that doctors, nurses and medical assistants have the equipment they need to protect themselves against a SARS-CoV-2 infection. Highly effective FFP2 masks were in particularly short supply in the first wave of the pandemic – including in our home region of Ostwestfalen-Lippe. So, we donated 1,000 additional FFP2 masks to the Bielefeld health authority for distribution.



At the start of the 58<sup>th</sup> Bundesliga season in the autumn of 2020, we donated a further 1,000 FFP2 masks to our local football club, DSC Arminia Bielefeld. As a partner to Arminia through the Bündnis Ostwestfalen, an alliance of local companies founded in 2018 to save Arminia from insolvency, we wanted to make a small contribution to ensure that stadium staff could protect themselves effectively at home games with spectators.



### LAB ACCREDITATION

The Böllhoff Group's physical-technical test laboratory is now accredited according to the new, much stricter DIN EN ISO 17025:2018 laboratory standard. The German national accreditation body (DAkkS) confirmed the upgrade to our

existing accreditation in January 2020. This upgrade also added six test procedures to our spectrum of accredited services, including friction coefficient testing in accordance with DIN EN ISO 16047. At present, only eight other laboratories in Germany can offer this as an accredited service. Another new addition is testing for surface flaws in screws in accordance with DIN EN ISO 26157. DAkkS has only issued accreditation for this test to the Böllhoff test laboratory and one other facility.



### 10<sup>TH</sup> EDITION OF OUR ANNUAL REPORT

The Annual Report 2020 is the tenth annual report issued by the Böllhoff Group. Our annual report first appeared in its

current form – as a blend of facts, figures and data plus articles on various topics of significance to our company – back in 2011. A lot has changed since then, including general reading behaviour. Mobile end devices such as smartphones, tablets and laptops are now widespread and we are reading on screens far more than we were a few years ago. This is why, for the first time in the history of our annual report, we have introduced a layout that is consistently optimised for digital displays. We look forward to your feedback!



## Trade fairs in 2021

The COVID-19 pandemic made conventional in-person trade fairs almost impossible in 2020. Given the rapidly developing nature of the pandemic, it is almost impossible to predict when it will be possible to hold large-scale events like trade fairs again. We have therefore decided not to list any trade fair dates for 2021 in this year's report. However, you can find an up-to-date overview of our scheduled appearances at trade fairs and events on our website:

### TRADE FAIRS

We're looking forward to welcoming you to our trade fair stand in person once again as soon as it is safe to do so.

## The management structure of the Böllhoff Group

### Advisory Council

**Dr Markus Miele (C)**

Managing Partner of Miele & Cie. KG

**Christian G. Böllhoff**

Managing Partner of Prognos AG

**Christiane Messinger-Frieling**

Partner

**Hans Beckhoff**

Managing Partner of Beckhoff Automation GmbH & Co. KG

**Jens Fiege**

Managing Partner of FIEGE Logistik Stiftung & Co. KG

**Dr Wolfgang W. Böllhoff**

Honorary Chairman of the Advisory Council



C = Chair



## Board of Management

**Michael W. Böllhoff (C)**

Fastening and assembly technology, production, marketing

**Wilhelm A. Böllhoff (C)**

Fastener service supply, personnel, quality management, logistics

**Dr Jens Bunte**

Research and development, technology

**Dr Carsten Löffler**

Finance, controlling, legal affairs, IT



The Böllhoff Group Board of Management (from left):  
Dr Jens Bunte, Dr Carsten Löffler, Wilhelm A. Böllhoff and Michael W. Böllhoff

## Management Conference

**Dr Ralf Adenstedt**

Automation in setting systems, Europe

**Sven Ammer**

Asia region

**Andreas Bertram**

Plastics engineering, Europe

**Niels Brandt**

Thread technology, Europe

**Christian Hagemeyer**

Corporate Management System

**Sandra Homburg**

Corporate Controlling

**Alexander Kehrer**

Mechanical joining technology, Europe

**Jean-Michel Mary**

South-west Europe region

**Thierry Morin**

Blind rivet technology, Europe

**Wolfgang Öhler**

South-east Europe region

**Steven P. Paddock**

North America region

**Marcel Rupprecht**

Fastener service supply, West Europe

**Martin Schnitker**

Joining technology sales, Europe

**Jens Schöne**

Logistics, Europe

**Flavio da Silva**

South America region

## Böllhoff at a glance

	2017 € 1,000	2018 € 1,000	2019 € 1,000	2020 <sup>1)</sup> € 1,000	Deviation 2020 to 2019 %
Consolidated sales <sup>2)</sup>	620,184	651,682	638,388	545,439	-14.6
Investments <sup>3)</sup>	43,183	65,131	72,778	16,788	-76.9
Depreciation <sup>4)</sup>	23,556	26,555	32,489	35,322	8.7
Balance sheet total	486,242	538,983	586,135	580,357	-1.0

	2017 %	2018 %	2019 %	2020 <sup>1)</sup> %	Deviation 2020 to 2019 % points
Working capital <sup>5)</sup>	33.5	36.0	35.6	36.9	1.3
Equity ratio <sup>6)</sup>	56.0	54.6	50.8	47.8	-3.0
Investment ratio <sup>7)</sup>	27,2	33,2	30,7	7,8	-22,9

	2017 FTE <sup>8)</sup>	2018 FTE <sup>8)</sup>	2019 FTE <sup>8)</sup>	2020 FTE <sup>8)</sup>	Deviation 2020 to 2019 FTE <sup>8)</sup>
Employees	2,792	3,046	3,174	3,000	-174

- <sup>1)</sup> Based on audited individual financial statements  
<sup>2)</sup> Before sales deductions  
<sup>3)</sup> Not including financial investments  
<sup>4)</sup> Depreciation of intangible fixed assets and tangible assets without extraordinary depreciation  
<sup>5)</sup> Ratio of working capital to sales; working capital includes stock plus trade receivables less trade liabilities  
<sup>6)</sup> Taking into account net financial debt, the equity ratio is up from 55.3% in 2019 to 58.5%.  
<sup>7)</sup> Ratio of investments to fixed assets (not including financial assets)  
<sup>8)</sup> Average number of full-time employees including temporary workers



## Sales

	2019		2020		Deviation
	€ 1,000	%	€ 1,000	%	
Böllhoff Group consolidated	638,388	100.0	545,439	100.0	-14.6
Sales by region					
Germany	298,969	46.9	256,073	46.9	-14.3
Europe without Germany	201,799	31.6	170,279	31.2	-15.6
Americas	77,434	12.1	58,715	10.8	-24.2
Asia	60,186	9.4	60,372	11.1	0.3
Sales by customer group					
Automotive	368,514	57.7	310,537	56.9	-15.7
Industries	260,974	40.9	229,108	42.0	-12.2
Aerospace	8,900	1.4	5,794	1.1	-34.9

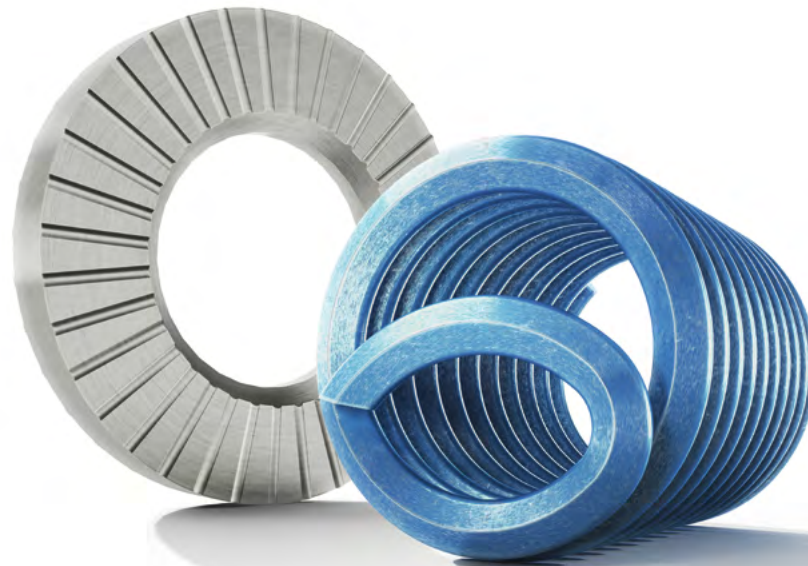
## Employees

	2019		2020		Deviation
	FTE <sup>8)</sup>	%	FTE <sup>8)</sup>	%	
Böllhoff Group	3,174	100.0	3,000	100.0	-5.5
Germany	1,412	44.5	1,348	44.9	-4.5
Europe without Germany	1,019	32.1	956	31.9	-6.2
Americas	403	12.7	359	12.0	-10.9
Asia	340	10.7	337	11.2	-0.9



# BÖLLHOFF

Passion for successful joining.



Böllhoff is your partner for 360° joining technology with assembly and logistics solutions – worldwide. As a family-owned company, we have been standing for long-term success through innovative capacity and local presence since 1877. We know the specific needs of our customers from all industries and support them in enabling successful connections. More than 3,000 employees continuously shape the future of joining technology – both at our headquarters in Bielefeld, Germany, and in our subsidiaries around the world.



# BÖLLHOFF

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