Annual Report 2020/21

Innovation in Motion

Miba

FORWARD

SHAPING THE FUTURE SUSTAINABLY

TECHNOLOGIES FOR A CLEANER PLANET

ENERGY GENERATION | ENERGY TRANSMISSION | ENERGY STORAGE | ENERGY USE

English

Shaping the future sustainably with

TECHNOLOGIES FOR A CLEANER PLANET

IMPRINT

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Rounding differences may occur when rounded amounts and percentages are added together. Projections relating to Miba AG's future performance are estimates that have been arrived at based on the information available at the time when this annual report went to press. If the assumptions underlying these projections do not materialize, or if risks occur at magnitudes other than those calculated, the actual results may deviate from the projections.

HIGHLIGHTS 2020/21

February 11, 2020

At the Digital Innovation Camp in the fall of 2019, Miba was looking for the best new digital ideas from all areas of business and countries. Three winning teams subsequently continued to develop their concepts. Now they present their ideas to the Miba Management Board – and get the go-ahead to implement all of them.

February 25, 2020

Miba sets up a Corona Crisis and Prevention Team. It coordinates Group-wide protective measures for our employees, which are supplemented by regionally adapted rules at site level. The objective of "healthy people – healthy company" becomes Miba's guiding principle in the pandemic and helps us cope with it well.

April 2, 2020

The Miba owner family establishes a Mitterbauer Covid-19 Emergency Aid Fund. It is endowed with € 500,000 and is available to employees worldwide who run into situations that threaten their livelihood due to coronavirus-related financial losses. The support will be paid out quickly, discretely and unbureaucratically, and does not have to be repaid.

May 20, 2020

Miba Steeltec in Vráble, Slovakia, completes its plant expansion. This includes the construction of an additional production hall of around 5,500 square meters and a new administration building of around 600 square meters.

October 1, 2020

Our employees' health is our most valuable asset, and Miba Sinter Brasil in Indaiatuba near Sao Paulo has achieved a special milestone here: two years without occupational accidents. Our company takes many measures worldwide for the prevention of potential hazards and work accidents. And we help our employees get fit and stay fit with preventive healthcare programs.

September 14, 2020

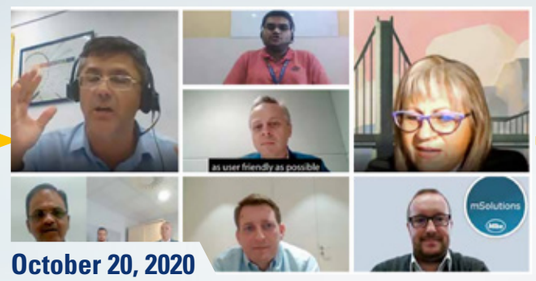
Our apprentices of today are our specialists of tomorrow, so even in the coronavirus crisis, Miba is focusing on training apprentices. Altogether, our company employs almost 300 apprentices worldwide. Around 25 boys and girls are starting their apprenticeship this fall in Upper Austria alone.

September 1, 2020

The Miba Leadership Academy resumes its activities again following the interruption in the first lockdown. Lifelong Learning is one of our core values, and personal exchanges are an essential factor for successful learning. Therefore, we are focusing once again on meeting up physically – in strict compliance with the protective measures and combined with online training where appropriate.

August 24, 2020

For the sixth time in a row, Miba offers a vacation program for employees' children. In cooperation with Otelo, the open technology laboratory, and in compliance with the coronavirus measures, the children are introduced to a fun way of handling technology at the Miba Forum in Laakirchen. Together with Otelo, we also established a childcare provision for school-age children in the event of school and class closures in the fall.



October 20, 2020

Normally in October, hundreds of Miba specialists and managers from all over the world get together at the Miba Convention to exchange ideas and set the course for the upcoming months. In 2020, this event takes place virtually for the first time.

October 20, 2020

For the 7th time we honor the best innovations in Miba with a Franz Mitterbauer Award, named after the founder of our company. For the first time, it does not go to a Research and Development team, but to the eleven digital innovators from Austria, Slovakia and India who are behind the mSolutions project – a global platform for networking real-time machine data.

November 25, 2020

With our Christmas Charity, we are supporting reforestation of the local recreation area on the Orava River in Dolny Kubin, which was severely damaged by a storm. We operate our biggest production plant in the world in the Slovakian city. Every year, the Miba Christmas Charity supports a project in one of the Miba regions worldwide.

January 27, 2021

Miba and Voltlabor, where Miba holds a share, are two of only six Austrian companies that the EU Commission includes in the IPCEI (Important Project of European Interest) program "EuBatIn". The aim of the initiative is to establish a competitive European battery industry.

AWARDS 2020/21

Miba's efforts and activities to maintain a successful partnership with all its stakeholders won multiple awards once again in 2020/21.

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1 ROLLS-ROYCE POWER SYSTEMS (MTU) – SUPPLIER AWARD IN GOLD

In February 2020, Miba Gleitlager Austria was awarded the Rolls-Royce Power Systems (mtu) Supplier Award in Gold in the "Best Precast Supplier 2020" category.

2 JOHN DEERE – BEST IN CLASS QUALITY AND DELIVERY PERFORMANCE

In February 2020, Miba Drivetec India once again received an award from John Deere for its particular product and delivery quality.

3 HENAN MARINE – SUPPLIER OF THE YEAR AWARD

In September 2020, the Bearing Branch of MPCC – Miba Precision Components (China) received the Supplier of the Year Award from Henan Marine Diesel.

4 JDEC CHINA – STRATEGIC CORE SUPPLER AWARD

In addition, the MPCC Bearing Branch also received the Strategic Core Supplier Award from JDEC China in September.

5 UPPER AUSTRIAN STATE PRIZE FOR INNOVATION

In November, Miba Gleitlager Austria received the special award for radical innovation for its sputter technology. This award is only given out in special cases.

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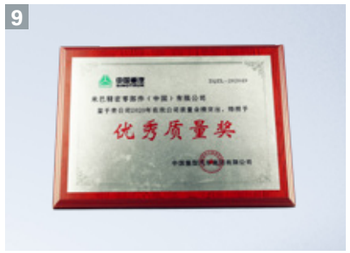

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6 COPEL – SUPPLIER AWARD IN SILVER

In November 2020, Miba Industrial Bearings Brasil received the Supplier Award in Silver from Copel.

7 WEICHAI – SUPPLIER OF THE YEAR AWARD

In December 2020, the Bearing Branch of MPCC – Miba Precision Components (China) received the Golden Supplier of the Year Award from Weichai.

8 WEICHAI – DEVELOPMENT PARTNER OF THE YEAR

In addition, the MPCC Bearing Branch received the Development Partner of the Year 2020 Award from Weichai.

9 CNHTC – QUALITY OF THE YEAR AWARD

Our customer CNHTC China gave a Quality of the Year 2020 Award to the MPCC Bearing Branch.

10 WUXI DIESEL – INNOVATION OF THE YEAR

In December 2020, MPCC Bearing was awarded the Innovation of the Year 2020 Award by Wuxi Diesel, FAW, for its innovations.

11 BGF SEAL OF QUALITY FOR WORKPLACE HEALTH PROMOTION

All Miba locations in Upper Austria were once again awarded the BGF Seal of Quality for 2021 to 2023. The Seal of Quality is awarded for three years at a time.

12 PRATT AND WHITNEY – SUPPLIER GOLD CERTIFICATION

Pratt and Whitney's conferring of Gold supplier status on Miba Gleitlager Austria in February was not only a good start to the new fiscal year, but also the official conclusion to a 20-month qualification process.

MIBA 100

ENERGIZE GROWTH

01 MIBA STRATEGY

In 2027, Miba will celebrate its 100th anniversary. Our new corporate strategy “Miba 100” defines how we want to grow sustainably and profitably until then, and how we want to set course for the second century of our company’s history.

MIBA 100 – OUR GROWTH STRATEGY UNTIL 2027. SETTING THE COURSE FOR THE FUTURE.

F. Peter Mitterbauer
CEO of Miba AG

Decarbonization and digitalization are the megatrends of our time. In the coming years, they will shape not only society and the economy, but Miba as well. They are challenges, but above all growth opportunities. With the new "Miba 100" strategy, Miba describes how it wants to utilize these megatrends and grow sustainably – through to the 100th anniversary of Miba in 2027 and beyond.

2027. The year in which Miba will celebrate the 100th anniversary of its founding. The new corporate strategy "Miba 100" describes how the company wants to grow sustainably until then. But the new corporate strategy does much more than this, discribes **F. Peter Mitterbauer, the CEO of Miba AG.** "It also sets the course for Miba's development for the period after 2027, for our company's second century." "Miba 100" replaces the previous strategy "Miba 2020", which was concluded at the end of the previous fiscal year.

> **"DECARBONIZATION AND DIGITALIZATION ARE CHALLENGES, BUT ABOVE ALL GROWTH OPPORTUNITIES."**

A CLEAR MISSION: TECHNOLOGIES FOR A CLEANER PLANET

The foundation for the new strategy "Miba 100" is the corporate mission "Technologies for a cleaner planet." "With our technologies, we want to make a contribution to a cleaner planet and a world that is even more livable," is how Mitterbauer describes it. "This is a strong driving force for all of us – for me personally as well as for our employees." Mitterbauer introduced the corporate mission in 2013 when he took over as CEO of Miba. And today it is more significant than ever. "The future belongs to sustainable technologies, and so our corporate mission offers growth opportunities through 2027 and beyond," says Mitterbauer.

SUSTAINABILITY THROUGHOUT THE ENTIRE ENERGY VALUE CHAIN

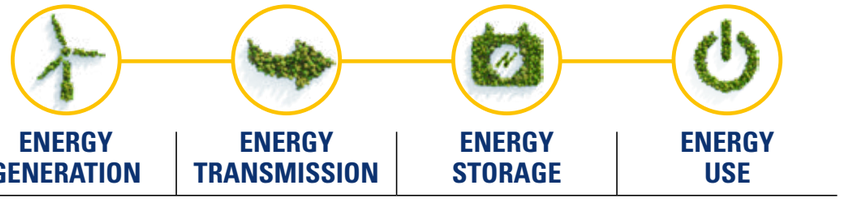
"Our focus is directed towards the entire energy value chain," says Mitterbauer to explain the direction of the new corporate strategy. "Miba technologies should contribute to making the generation, transmission, storage and use of energy efficient, sustainable and climate-friendly. For example, with products for wind power and solar energy or hydropower. With solutions for the efficient transmission of energy in power grids with the lowest loss possible. With battery systems and battery components. And with technologies for more efficient, more sustainable use of energy in the drives of vehicles, ships, aircraft, construction and agricultural machinery or industrial applications. This also describes Miba's new corporate vision: 'No Power without Miba Technology.'"

AN EVER-SMALLER CARBON FOOTPRINT IN PRODUCTION

Miba's contribution to decarbonization does not only comprise the technologies that the company produces. "With our ambitious programs, we are already reducing energy and water consumption and waste volumes in production today. This means we are constantly reducing our carbon footprint. We will consistently continue down this path and even accelerate it," says Mitterbauer.

DIGITALIZATION AS A GROWTH OPPORTUNITY

The second major megatrend of our time is digitalization. "Almost unnoticed, digitalization has changed our daily lives considerably. It is also greatly changing industry – the way we work and our products," says Mitterbauer. "Like decarbonization, this makes it a challenge for Miba, but above all an opportunity." Miba's digitalization strategy is based on several pillars: on the one hand, it is about making internal production and administration processes digital, automated and thus more efficient. On the other hand, it is about networking data through big data and artificial intelligence, thus continuously improving the product quality and production processes. And, last but not least, it is about creating real added value for customers through digital additional benefits for Miba products or digital services.



Miba wants to make a contribution to decarbonization with technologies and products for the sustainable generation, transmission, storage and use of energy.
For more details, see "Miba Decarbonization" on page 24.

IN EXISTING MARKETS AND IN NEW AREAS

GROWING SUSTAINABLY

Miba has always been a stable, financially independent and healthy company. And it has always been committed to long-term, sustainable and profitable growth. "You can compare Miba to a tree," says F. Peter Mitterbauer. "Just as its many branches together form the crown, so our divisions shape Miba."

Each branch grows and thrives in its own right – just like each division of Miba in its traditional market and with existing products.

Each branch can also produce new shoots – just as each part of Miba can grow in new markets and with new products in addition to the existing business.

From small shoots, strong branches can grow over time – just as Miba ultimately develops new, strong divisions from new business areas. And it is even possible to make the tree even stronger and more robust by grafting on new, previously extraneous branches – just as Miba grows in completely new areas through acquisitions.

For a tree, its strong roots are a footing and a source of strength; for Miba, these come from its financial stability and independence, its values and operating principles, and its more than 90-year history as a successful family-owned business. In addition, its innovative strength, the basis for technology and product leadership. And last but not least, its employees with their expertise and their commitment, who take care of our Miba tree like gardeners.

"The illustration of the tree describes how we intend our company to grow until 2027 and beyond. Sustainably and profitably. In existing and new markets, with existing and new products. But always with the clear acknowledgement that many individual parts together are a healthy, sustainably-growing whole," says Miba CEO F. Peter Mitterbauer. With the "Miba 100" strategy, the company intends to grow to an annual revenue of EUR 1.5 billion by 2027. And it is clearly staking its claim to be a global market, technology and innovation leader in its market segments.

> **WE WANT MIBA TO GROW LIKE A TREE. SUSTAINABLY AND HEALTHILY. OUR STRONG ROOTS SHOULD ENABLE THE GROWTH OF OUR EXISTING BRANCHES. AND THEY SHOULD ALSO GIVE NEW BRANCHES POWER TO GROW.**
>
> F. Peter Mitterbauer
> CEO of Miba AG

MIBA 100 ENERGIZE GROWTH

STRATEGY 2027 » SET COURSE FOR OUR 2ND CENTURY «

OUR MISSION
Technologies for a cleaner planet

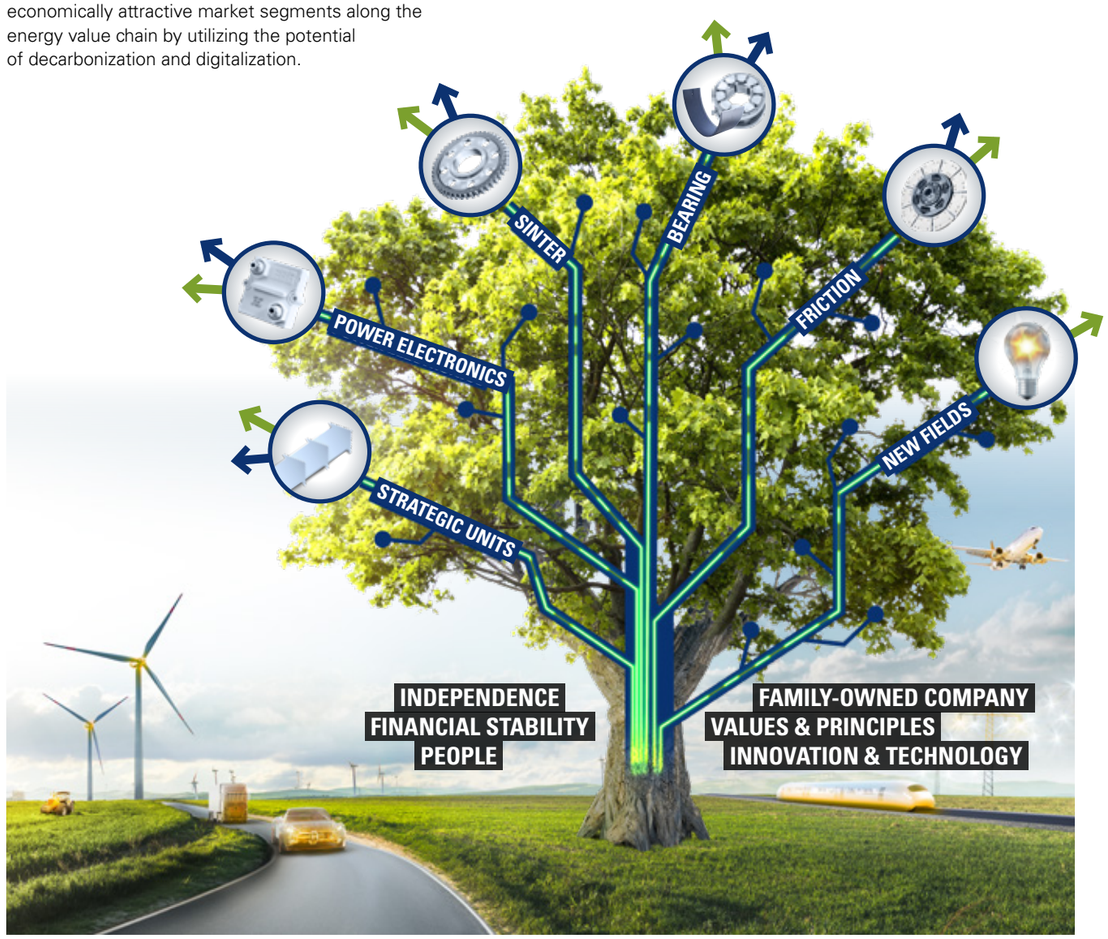
OUR VISION
No Power without Miba Technology

ENERGY GENERATION | ENERGY TRANSMISSION | ENERGY STORAGE | ENERGY USE

OUR STRATEGY MIBA 100
Striving for technology leadership in demanding, economically attractive market segments along the energy value chain by utilizing the potential of decarbonization and digitalization.

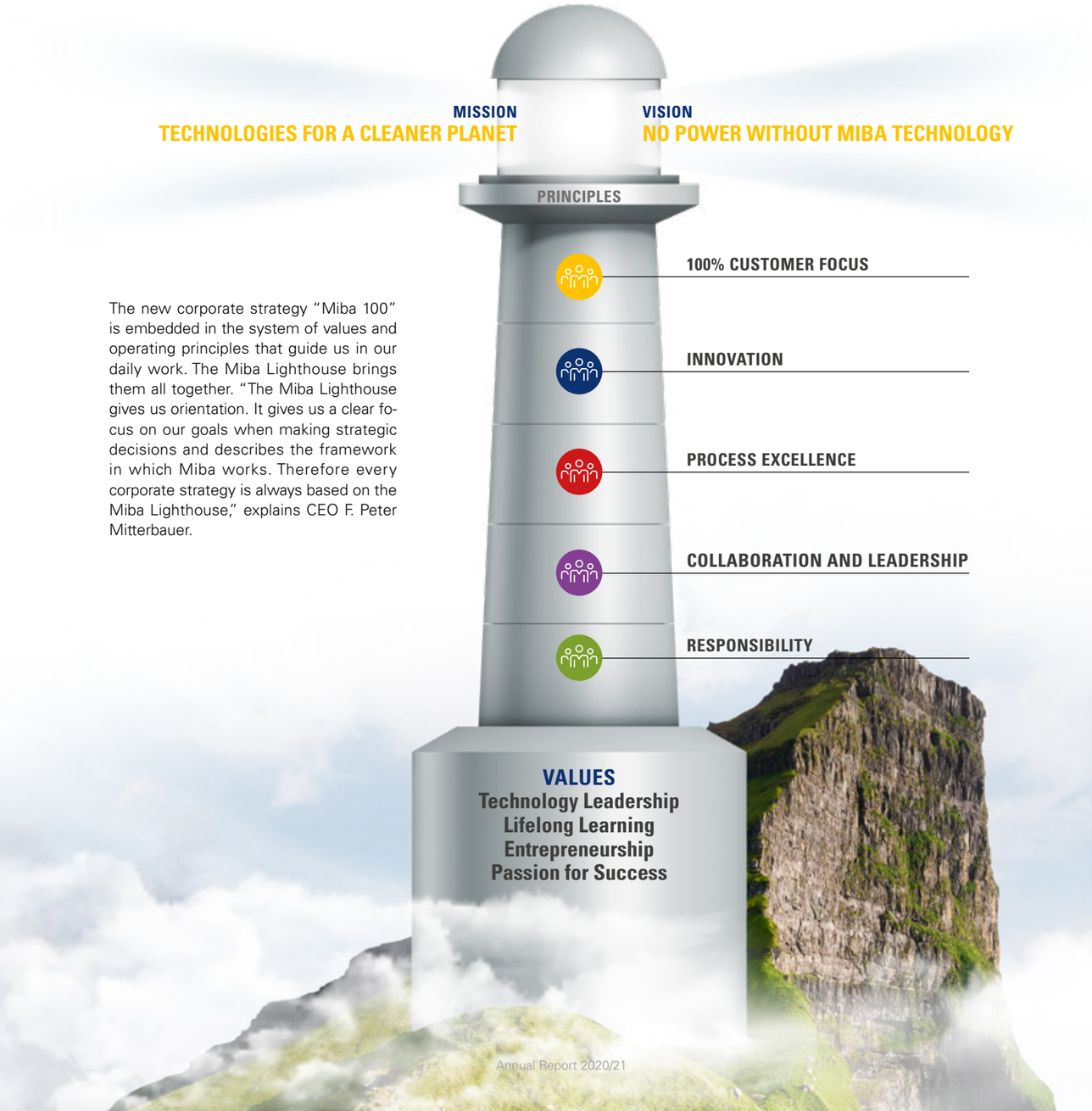
OUR GOALS
- Transforming Miba to shape the next 100 years
- Growth both in our core businesses and by entering new fields organically and through M&A
- Global no. 1 in our market segments
- Inspiring place to work
- Sustainable growth to over EUR 1.5 billion

OUR VALUES
- Technology Leadership
- Lifelong Learning
- Entrepreneurship
- Passion for Success



MIBA LIGHTHOUSE:

CLEAR VALUES AND PRINCIPLES GUIDE THE WAY



The new corporate strategy "Miba 100" is embedded in the system of values and operating principles that guide us in our daily work. The Miba Lighthouse brings them all together. "The Miba Lighthouse gives us orientation. It gives us a clear focus on our goals when making strategic decisions and describes the framework in which Miba works. Therefore every corporate strategy is always based on the Miba Lighthouse," explains CEO F. Peter Mitterbauer.

INNOVATION AND TECHNOLOGY:

IDEAS CREATE GROWTH

A spirit of innovation, technology leadership and proximity to customers and their projects to shape the future – all of these make Miba stand out in the global competition

"We are driven by our ideas and passion for technology. And our attitude in never settling for what we have achieved, but always looking for the even better solution for our customers," explains Miba CEO F. Peter Mitterbauer. "This is how we have reached global leading positions in many of our markets. We want to expand this position further with innovation and technology." Miba now holds 400 patents and employs 300 people in research and development – "a clear commitment to innovation and technology," says Mitterbauer. It is the development of new solutions for decarbonization and digitalization in particular that needs additional R&D power. One important focus is drive technology: "Modern, clean, internal combustion engines, hybrid technology, and pure electric drives – today and in the future too, they all make an important contribution to reducing the carbon footprint," says Mitterbauer. Future technologies for the production, transmission and storage of energy, and new, innovative approaches to digitalization are also important priorities.

A spirit of innovation and technology leadership are just as much foundations for the successful utilization of the megatrends of decarbonization and digitalization as are the expertise, commitment and worldwide collaboration of our employees.

OUR EMPLOYEES

THE FOUNDATION FOR GROWTH AND SUCCESS

With their expertise, personalities and entrepreneurial spirit, Miba's employees make a significant contribution to the company's success.

This is true today, and will be true even more in the future. "To successfully implement the "Miba 100" strategy of exploiting the opportunities offered by decarbonization and digitalization, we need curious, open-minded people. Personalities who want to take new paths, assume responsibility and continuously keep on learning," explains F. Peter Mitterbauer. Global collaboration, equal opportunities and diversity, and an open corporate culture with flat hierarchies are also indispensable for Miba's future success. "It is important to find the best people for all this – and to offer them training and development customized to their respective needs. In times of change and in particular chances, it is important to continuously develop professionally and personally," Mitterbauer is convinced of this. Lifelong learning is therefore one of Miba's core values.

TECHNOLOGIES FOR A CLEANER PLANET

Our corporate mission “Technologies for a cleaner planet” is the driving force in our daily work, giving us energy and guidance.

With components that are critical to the function of applications along the entire energy value chain, we want to make a contribution towards an even more efficient and sustainable generation, transmission, storage and use of energy. This illustration shows the areas where Miba’s technologies already make such a contribution and the segments we aim to continue to develop in the future.

CRADLE-TO-GRAVE: Miba products accompany the entire cycle of efficient generation, transmission, storage and use of energy

ENERGY GENERATION

WIND POWER

SOLAR ENERGY

HYDROPOWER

GAS AND DIESEL GENSETS, TURBINES

FUEL CELLS

ENERGY TRANSMISSION

EFFICIENT ELECTRICITY TRANSMISSION (e.g. high-voltage direct current (HVDC) transmission / medium voltage direct current (MVDC) transmission)

SMART GRIDS (intelligent networking and control of power grids)

COMPRESSORS AND PUMPS

ENERGY STORAGE

BATTERY MODULES AND COMPONENTS

BATTERY THERMAL MANAGEMENT

ELECTRICAL SAFETY COMPONENTS FOR BATTERIES

COATING SOLUTIONS FOR BATTERIES

COMPONENTS FOR CHARGING INFRASTRUCTURE FOR ELECTRIC VEHICLES

ENERGY USE

HIGHLY-EFFICIENT POWERTRAIN TECHNOLOGY:
- CONVENTIONAL DRIVES
- HYBRID DRIVES
- FULLY-ELECTRIC DRIVES

VEHICLE APPLICATIONS OUTSIDE THE POWERTRAIN (e.g. auxiliary drives)

INDUSTRIAL APPLICATIONS

WELL-TO-TANK (production and provision)

TANK-TO-WHEEL (dispensing and use)

TEAM TALK

DECARBONIZATION

MARTIN LIEBL
Member of the Management Board of Miba AG

RUDOLF MORAWETZ
Head of Pin Winding / Stator Business Unit in the Miba eMobility team

KATRIN ZORN
Development Manager Future Products at the Technology Competence Center of the Miba Bearing Group

KIM WANG
Vice President Sales & Marketing, EBG China

INNOVATION IS IN OUR DNA, WE WANT TO USE IT TO PROACTIVELY SHAPE DECARBONIZATION

Global climate protection targets are accelerating decarbonization, in other words the gradual reduction of the carbon footprint. Miba Management Board member Martin Liebl talked with employees about how Miba intends to use this megatrend and sustainably grow from it.

Miba is a diverse, global company – and so the group discussing decarbonization with Martin Liebl is also made up of employees from different parts of the world. Austrian Katrin Zorn is developing bearing solutions for Miba for new application areas. As an e-mobility expert, the South Tyrolean Rudolf Morawetz is responsible for the Pin Winding business unit. And Kim Wang is the head of the Sales and Marketing at the Miba power electronics specialist EBG in China. Martin Liebl makes one thing clear right at the beginning of the conversation: Miba's attitude towards climate protection targets and decarbonization is a positive one. On the one hand, this corresponds to our corporate mission "Technologies for a cleaner planet". And on the other hand, Miba has always seen opportunities in new things. "It is in our DNA to look towards the future with a spirit of innovation and thus find clever technology solutions for our customers," says Liebl. It is also mainly a matter of finding solutions to the customer's challenges that only Miba can develop and produce. This applies along the entire energy value chain, from its production through to distribution and storage, and use.

GROWTH BY USING OUR OWN EXPERTISE AND VIA ACQUISITIONS

"But what does this mean for Miba and where is the greatest potential for growth?" asks Katrin Zorn. The Miba approach is based on two pillars, says Martin Liebl: "On the one hand, we want to develop and produce new products from within Miba. For example, our team is intensively involved in five areas of application that we have defined for e-mobility. In addition, we want to grow via M&A and look for companies that are a good fit for us culturally and want to take the next step in their development together with us." Rudolf Morawetz discusses where there are benefits for such companies from partnering with Miba: "Growth means being innovative and always thinking about the industrialization of the products. This industrialization expertise is exactly what we, as Miba, contribute."

A STABLE PARTNER WITH A GLOBAL FOOTPRINT

Miba's industrialization expertise is also a major advantage for customers. "There are a wealth of companies thronging the market with innovative ideas for decarbonization. Miba differs from them in its expertise in industrializing these ideas and developing them into series production. We can also offer our global network of 31 production sites in all the major customer markets. And we know how to organize global supplier relationships and supply chains," says Miba Management Board member Martin Liebl.

DIFFERENTIATION VIA INDIVIDUAL COMPONENTS – DEVELOPMENT IN CLOSE COOPERATION WITH OUR CUSTOMERS

The technological requirements for products for electric drives, for example, are becoming greater all the time, the systems themselves are becoming better and thus more complicated and sophisticated. "The result of this is that in the electric drives area too, customers will increasingly differentiate themselves via the individual components," says Martin Liebl. "Here it is necessary to develop solutions in close cooperation with our customers. To know their requirements in detail and contribute our expertise. We do this by acting as a team, as we have always done at Miba." "What mindset do the Miba employees need for this?" asks Kim Wang. "We need people who are excited by technology and understand the market and customers", says Liebl. "Team players who work together with our customers to develop what they really need. Who gain the trust of their customers and are alongside them from the product development to the series production. At Miba, we rely on such people – and such people will feel comfortable in our corporate culture."

TEAM TALK

DIGITALIZATION

MARKUS HOFER
Member of the Management Board and CFO of Miba AG

JESPER HANSEN
Vice President IT, Miba AG

SAMMY FISHER
Divisional Human Capital Business Partner, Miba Sinter Group

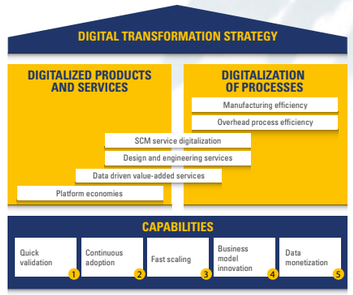
KAROL JANAS
Operations Excellence Manager, Miba Steeltec

CORPORATE CULTURE IS THE DECISIVE SUCCESS FACTOR FOR THE DIGITAL TRANSFORMATION

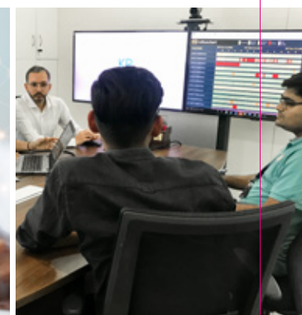
Miba has a clear goal: we want to take on the role of a forerunner in the digital transformation in our markets – by using digitalization to create new business opportunities and make internal processes more efficient and more agile. We discussed how this can be achieved with a colorful Miba group from around the world: Miba AG Management Board member Markus Hofer, Miba Group CIO Jesper Hansen from Denmark, American Sammy Fisher, and Karol Janas from Slovakia.

Digitalization is changing the way we live, work and produce. "For Miba, this is a challenge, but above all an opportunity. We want to use digitalization to successfully implement the digital transformation of our business model, our production and our administration," says Management Board member Markus Hofer. Smart products with a digital additional benefit bring real added value for our customers. This is also what the new services based on data aggregation and analysis are doing.

Digital platforms make customer orders, customer contact, and the supply chain more efficient and more agile. And digitalization of internal processes in production and administration enables greater product quality, faster processes and many new insights from the wealth of data available in Miba worldwide. All of this is described in the "Miba House of Digital Transformation", which is presented in detail from page 58 onwards. "On the one hand, the essential basis for a successful digital transformation is the ability to develop and scale ideas quickly and agilely. And then using this to develop innovations for our business model and benefit from the data available in the company," adds Miba CIO Jesper Hansen.



The "Miba House of Digital Transformation" describes our digitalization strategy. For more details, see "Miba Decarbonization" from page 58 onwards.



DIGITALIZATION REQUIRES COLLABORATION OF IT AND OPERATIONAL BUSINESS

The Miba employees Sammy Fisher and Karol Janas want to know how digitalization will change the way we work together. "If the digital transformation is to succeed, it has to be a shared task for the whole of Miba," says Markus Hofer. It is also clear to the group that while IT can contribute their expertise in digital technology and the possibilities this offers, it is only the employees who are operational in the market who know the customers' needs. They are really close to the customer, and therefore know what tasks we can help them solve. Miba has relied on this kind of networking and collaboration for some time now, as Jesper Hansen explains: "Our colleagues in the Miba divisions have recognized the many benefits of digitalization. Over the past few months, a wealth of ideas have emerged from this, which we want to develop further."

FREEDOM TO MAKE DECISIONS, AGILITY AND A "FAIL FORWARD FAST" CULTURE

Miba Management Board member Markus Hofer is convinced that doing this successfully requires the right skills and abilities – but above all, the right corporate culture. Sammy Fisher and Karol Janas want to know what culture that is. "Our corporate culture must be based on openness and agility. It must give employees the freedom to try things out, and develop ideas and so-called "minimum viable products" from this. If they are successful, then there must be the capacity to scale them up quickly. If they do not work, then we also need to be honest with ourselves and to stop the projects quickly," says Markus Hofer. In this corporate culture, "Fail Forward Fast" is the guiding principle for the development of new ideas. "It does not contradict the 'zero defect' mindset in production, because there what matters above all is consistently offering the best product quality for our customers," Hofer adds.

LEARNING FROM DIGITAL NATIVES

Sammy Fisher and Karol Janas want to know whether digital natives can drive the culture in the company, and whether employees who have been with us for many years can learn from them. Jesper Hansen is certain that young talent that has grown up in the digital world can make a big difference: "A 'bottom-up' approach is certainly helpful, because digital natives can inspire their colleagues and accompany them in the digital transformation." But a clear commitment from the management is also needed alongside this. "They are the ones who set an example by leading the way," adds Markus Hofer. Ultimately, the key to success is not only to incorporate the digital transformation as an essential part of developing the strategy of every area of business, but also to bring it to life there every day. "Each and every manager in every area of business should be constantly wondering: How do we use the digital transformation in the long term for our business success in the next six to seven years and beyond? If we understand this importance and necessity and act accordingly, then we will make digitalization an essential factor for the successful implementation of the Miba 100 strategy."

MIBA EXECUTIVE COMMITTEE:

BROADLY POSITIONED FOR A SUCCESSFUL FUTURE

The newly created Executive Committee is Miba's top operational governing body. Its purpose is to lead the company effectively into the future, adapt to the new conditions in the global markets, and successfully implement the new Miba 100 strategy. In addition to the three Miba Management Board members, F. Peter Mitterbauer, Markus Hofer and Martin Liebl, the committee members include the Managing Directors of the two largest Miba divisions (Sinter and Bearing) Bernd Badurek and Christoph Ederer, and Vice President Human Capital Bernhard Reisner.

02 **MIBA DECARBONIZATION**

With our technologies we are contributing to decarbonization and a smaller carbon footprint. We are doing this out of our responsibility to our planet and the next generations. And we are using the growth opportunities arising from sustainable technologies.

SUSTAINABLE

ENERGY GENERATION

Sustainable energy is one of the most important foundations of decarbonization. With Miba Technologies, we want to make power generation more sustainable and cleaner. In this way we want to make a contribution to reducing the global carbon footprint – and utilize opportunities in a strongly-growing market.

WIND POWER:

A SUSTAINABLE GROWTH MARKET FOR MIBA

The importance of wind power is growing constantly. The Global Wind Energy Council can prove this impressively with figures: a production capacity of 750 gigawatts is now available worldwide. This brings a CO_2 reduction of 1.1 billion tons, which is equivalent to the annual carbon footprint of the whole of South America. Worldwide, new wind turbines with a generation capacity of more than 90 gigawatts were built in 2020 alone, which is 50% more than in the previous year. Miba sees great opportunities for growth in wind power, so we already offer a broad range of products for this market. Miba is also building a "Renewable Energy Innovation Center" at the Osterode site in northern Germany, which will cooperate closely with scientific institutions and with the wind power team in Austria to develop solutions for the even more powerful and efficient wind turbines of tomorrow.

MIBA TECHNOLOGIES FOR WIND POWER:

- Bearings for main gearbox and rotor bearings
- Friction components for breaks in wind turbines
- Power resistors for current and voltage optimization
- Cooling technology for switchgear cabinets in wind turbines
- Milling equipment for the construction of offshore wind towers

750 gigawatts
Current wind power generation capacity worldwide

1.1 billion tons of CO_2
Worldwide reduction of the carbon footprint by means of wind power – equivalent to the annual carbon footprint of the whole of South America

HIGH-END WIND TURBINES NEED MIBA BEARING TECHNOLOGY

The importance of wind power is growing, and with it the performance requirements of wind turbines. In the future, turbines will be designed to generate 14 megawatts and more, which is more than twice the amount today's systems can output. At the same time, the installation space should not be enlarged, due to cost reasons. The rolling bearings traditionally used will struggle to meet these requirements, so manufacturers of gearboxes in wind turbines are switching to Miba bearing technology. At the Laakirchen site, a wind power team was set up for these customers, which plans and implements customer projects. Sales in this area grew strongly in 2020. Under the project name "Blue Ocean", the Miba Technology Competence Center in Laakirchen is mainly also looking into the use of Miba technologies in other wind power applications. Thus, for example, Miba bearings are also to be used in future in the main rotor bearings of wind turbines, where they will ensure greater efficiency and lower maintenance costs.

Bearings for wind turbine gearboxes

AN INNOVATION CENTER FOR RENEWABLE ENERGIES IS BEING ESTABLISHED IN LOWER SAXONY

At its production site in Osterode in northern Germany, Miba is establishing an "Innovation Center for Renewable Energy" where the company is pooling its expertise related to the efficient use of sustainable energy sources, especially wind power. In addition, the center will also develop and produce bearing solutions for modern high-speed trains such as the ICE. The development of bearings at Miba is closely networked with top-level research institutes, and the company will also continue to expand these collaborations, especially in Lower Saxony. There will also be close cooperation with Miba's wind power team in Austria and the R&D team of the Miba Technology Competence Center, which has been working intensively for some time on new application areas for bearings.

Wind power provides an important building block for the decarbonization of power generation. We are proud that Miba can contribute to this.

Christoph Ederer, General Manager Miba Bearing Group and Member of the Miba Group Executive Committee

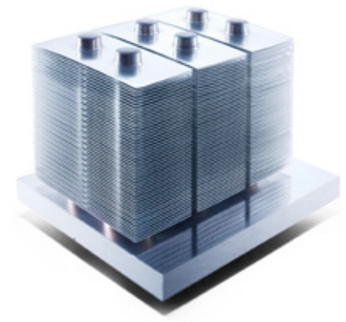
EBG power resistors:

90% OF WIND TURBINE MANUFACTURERS RELY ON EBG POWER RESISTORS

Power resistors supplied by the Miba company "EBG Resistors" are used in wind turbines for current and voltage limitation, harmonic limitation or as measuring resistors for improving the grid quality. In this way, they contribute to making the turbines more efficient and durable. Around 90% of wind turbine manufacturers now rely on EBG technology – because our resistors are much more compact than comparable products and therefore require a smaller installation space.

DAU cooling technology:

INTELLIGENT THERMAL MANAGEMENT



DAU cooling technology

The cooling technology from the Miba company DAU ensures that the power electronics equipment in the switchgear cabinets of wind turbines is constantly kept at the correct temperature. Our aim is to achieve optimal cooling as installation spaces become smaller and smaller. This protects the power electronics that are critical to the equipment operation. In the future, our cooling technology will be digitalized: then sensors on the heat sink will measure the temperature of the electronic components and provide important data to the entire system. This will enable the optimization of the overall system and thus precise planning of maintenance cycles. This not only saves users money; it also prevents damage and unnecessary maintenance work – and thus makes a contribution to greater sustainability and a smaller carbon footprint.

Safe and effective:
MIBA FRICTION TECHNOLOGY SLOWS DOWN ROTORS SAFELY

Friction technology for wind turbines

In order to avoid damage to wind turbines caused by strong winds, the rotors need to be slowed down. This increases the safety of the wind turbine assemblies, which weigh around 300 tons, and prevents energy overloads. The safest method for this is to use brakes with friction components, such as those offered by Miba. They resemble the disc brake on a bicycle, but are much larger, so they slow the rotors down safely and effectively. The use of high-quality materials and state-of-the-art production processes means that Miba sintered friction materials have stable friction coefficients and improved wear resistance. Our friction technology is used on both the high-speed and low-speed rotor shaft of wind turbines. Many wind turbine manufacturers rely on Miba technologies, which are used worldwide in a large proportion of the brakes for wind turbines.

Miba is a global technology leader:
MILLING SYSTEMS FOR THE CONSTRUCTION OF OFFSHORE WIND TURBINE TOWERS

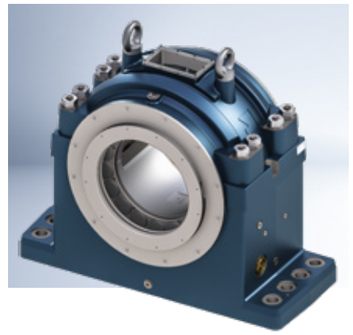
Wind turbines off the coast are anchored to the sea floor with foundation assemblies measuring up to 100 meters in height, and they must withstand the stresses of the rough seas. These assemblies consist of around 30-meter-long steel tubes that are welded together prior to their installation. Miba Automation Systems (MAS) designs and builds circumferential and longitudinal weld seam milling machines for its wind power customers; these are used to pre-machine the individual tube elements for offshore wind towers with high precision, in order to achieve a high-quality welding connection for their assembly. Miba is the global technology leader in this segment and has already sold a sizeable number of such systems in recent years.

Miba milling systems are used in the construction of offshore wind turbines.

HYDROPOWER:
FULL ENERGY FLOW WITH MIBA EXPERIENCE

MIBA, ONE OF THE WORLD'S LARGEST HYDRO BEARINGS SUPPLIERS

The Miba industrial bearing plant in Cataguases, Brazil, is one of the world's three largest suppliers of "hydro bearings", in other words bearings for turbines in hydropower plants. Miba bearing technology is used in small hydropower plants (power generation below 30 megawatts), medium (power generation between 31 and 80 megawatts) and large plants (more than 80 megawatts). Our mechanical engineering specialist "Miba Automation Systems" is also active in power plant construction. The company develops and produces CNC machines, which enable components to be produced more accurately and efficiently.



SOLAR ENERGY:
SOAK UP THE SUN WITH MIBA'S EXPERTISE

MIBA TECHNOLOGY IN ALMOST ALL SOLAR ENERGY PLANTS FROM WELL-KNOWN MANUFACTURERS

Solar energy also plays an important role in the sustainable energy mix of the future. Already today, power resistors from the Miba subsidiary EBG can be found in thick-film technology in the inverters of almost all solar energy plants from well-known manufacturers. They enable the best balance between component size and performance – especially in comparison to wire-wound resistors, since the EBG technology makes it possible to include a greater number of resistors in a single housing. In addition, heat sinks and heat pipes from Miba's subsidiary DAU protect the electronic components in solar energy plants against overheating.

GAS-FIRED POWER PLANTS:
FULL THROTTLE WITH MIBA EXPERTISE

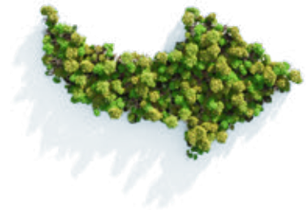
BEARINGS FOR MORE EFFICIENT GAS-FIRED POWER PLANTS

Miba bearings ensure that compressors, gearboxes and turbines in gas power plants can operate more efficiently and productively. In addition, they increase the system lifetime and reduce wear.

SUSTAINABLE

ENERGY TRANSMISSION

Transmitting electrical current as free from losses as possible contributes significantly to energy efficiency. Our power resistors help to reduce transmission losses in high-voltage direct current technology, and help to make power grids “smart” and thus more efficient. In addition, our technologies make charging electric vehicles more energy-efficient and more cost-effective.



Power resistors for high-voltage direct current transmission: REDUCE ENERGY LOSS BY 4 PERCENT

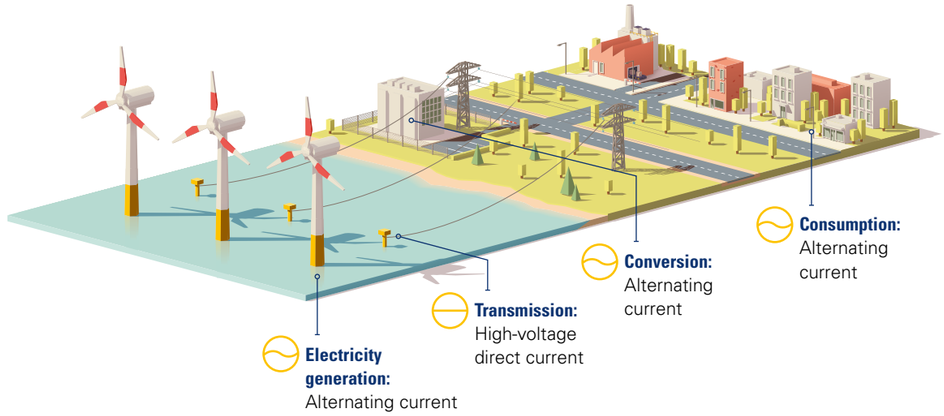
The electricity industry is facing the challenge of transmitting electricity over long distances with low energy losses, for example from wind turbines off the coasts to the cities inland or over very long inland distances. Our EBG power resistors and DAU coolers are used here. In high-voltage direct current transmission (HVDC technology), they contribute to safely converting the alternating current produced in off shore wind power parks into high-voltage direct current, by protecting the electronic switches and other applications against voltage fluctuations and cooling them sufficiently. In the consumer region, the electricity is then converted back into alternating current and fed into the grid. This reduces the energy loss by four percent compared to conventional alternating current transmission.

3,300

kilometers

is the distance conquered by the longest current highway in the world. It was put into operation in China in 2019.

High-voltage direct current transmission (HVDC technology):



eCharging:
ENERGY-EFFICIENT AND COST-EFFECTIVE CHARGING OF ELECTRIC VEHICLES

Our power resistors are also installed in the charging infrastructure for electric vehicles, in so-called fast and ultrafast chargers, in the power range of 150 kilowatts to 350 kilowatts. Here they have an important protective function, and by removing higher power in the event of a fault, they ensure that the power electronics will continue to function smoothly. Due to their compact design, which achieves significantly higher power density with the same size, our EBG power resistors enable a more compact and cost-effective charging infrastructure for electric vehicles. This benefits the environment and reduces the costs for the end user.

-4%

energy loss

is achieved by the high-voltage direct current transmission technology (HVDC).

150-350

kilowatts

is the power range of fast and ultrafast chargers for electric vehicles.

Smart grids:
INTELLIGENT CONTROL OF POWER GRIDS

Smart grids are intelligent energy grids in which all parts of the energy system interact, as they are interconnected via a communication network. EBG high voltage resistors from Miba are used in smart grids to measure voltages in the power line and detect failures or defects. This safeguards the stability of the entire grid. EBG power resistors excel with their compact design, precision and long-term stability.

EBG TECHNOLOGY FOR U.S. POWER GRIDS

Energy suppliers in the USA are currently working on optimizing their grids. In the future, modern, intelligent meters and measuring sensors will make it possible to plan the power demand and grid capacity better, and make it easier to find grid faults. EBG power resistors are also used for this purpose. Before they used our technology in intelligent sensors, grid operators always transported only a certain amount of energy over the distribution lines in order not to overload them and without knowing the actual demand. The sensors distributed in the grid enable the amount of energy transported to be determined much more precisely than in the past. Ultimately, this will make a major contribution to a wider usage of regenerative energies like PV or wind with the existing grid and therefore reducing the ecological footprint.

Miba EBG resistors make U.S. power grids smart and efficient.

The measurement of the actual voltage by means of our high-precision high-voltage resistors enables the optimum utilization of power grids.

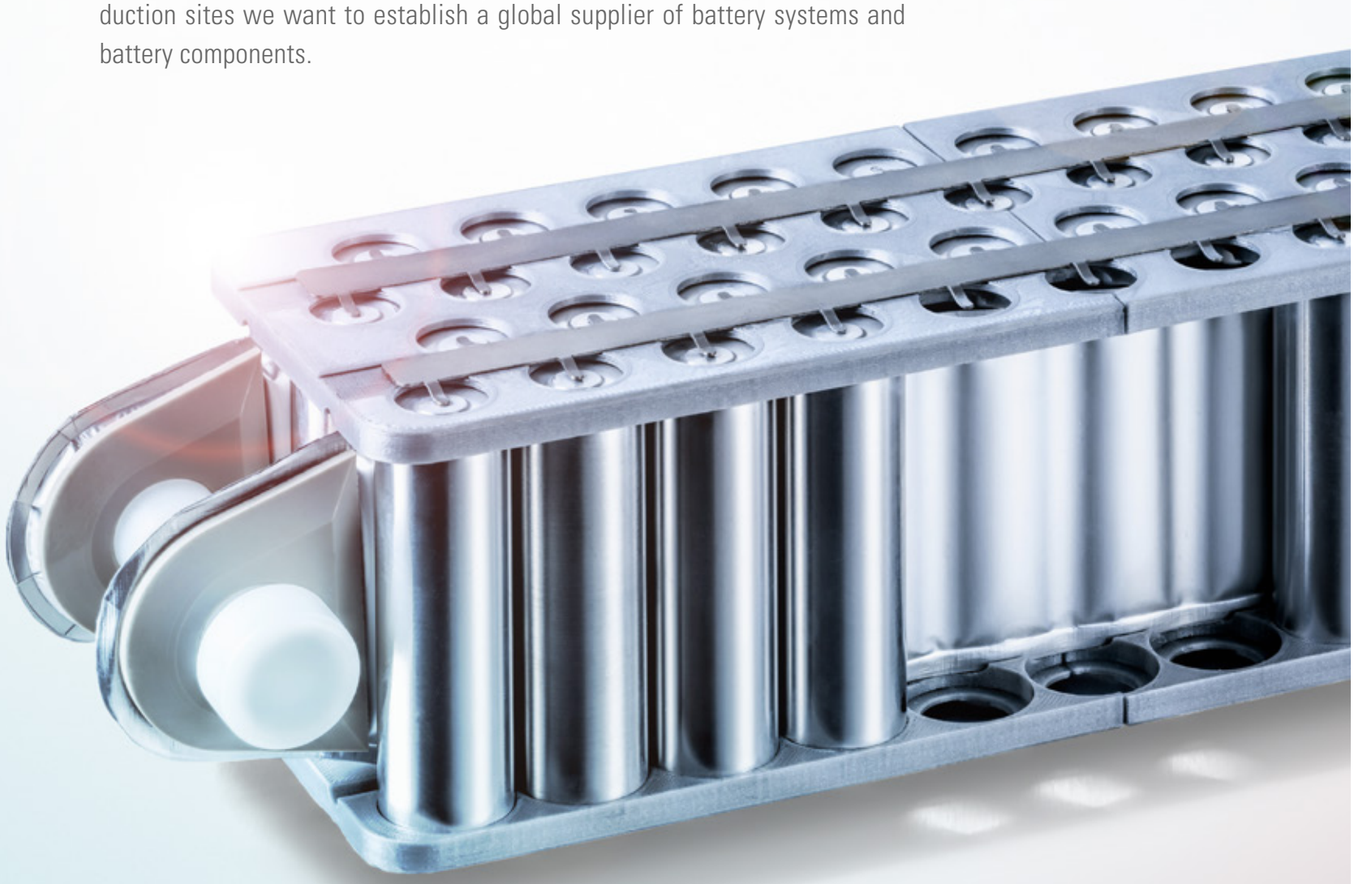
Our high-precision high-voltage resistors used in measuring devices in intelligent power grids make an important contribution to the efficient use of regenerative energies. The next generation with an even higher measuring accuracy is currently being developed.

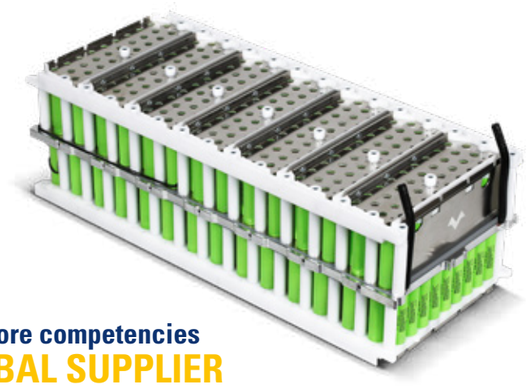
Raimund Ratzi, Head of R&D, Miba Power Electronics Group

SUSTAINABLE

ENERGY STORAGE

Forklifts, commercial and municipal vehicles, electric cars or drones for delivery services in heavily populated metropolitan areas: they are all powered and controlled by electricity. Their core element is batteries. Together with Voltlabor, in which Miba has had a shareholding since 2019, by combining our expertise and using Miba's global market access and worldwide production sites we want to establish a global supplier of battery systems and battery components.



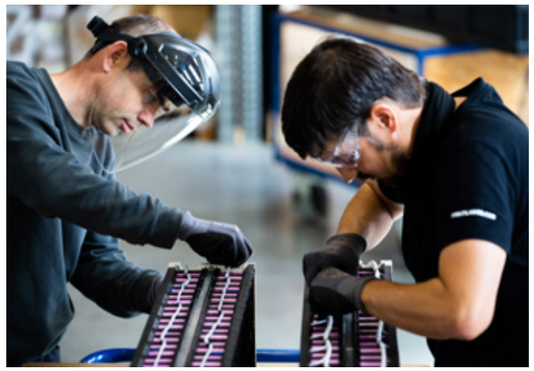


Miba and Voltlabor merge their core competencies

A COMMON GOAL: GLOBAL SUPPLIER OF BATTERY SYSTEMS

Miba invested in the Mühlviertel company Voltlabor in 2019. The company specializes in the development and production of batteries. As the competencies of Voltlabor and Miba complement each other perfectly, they were merged to optimally exploit growth opportunities. The common goal is to establish a major supplier for the development and production of battery systems which is Austrian in origin and operating worldwide.

Voltlabor is contributing its expertise as a system manufacturer of batteries to the joint market development. Miba is providing not only its thermal management technology FLEXcooler®, but also its industrialization expertise and global network of production sites, from which regional customer relationships are already being established today. In the future, they can also be used for battery production in the respective markets.



Driverless transport systems from Agilox with batteries from Voltlabor

Only six Austrian companies selected by the EU Commission:
MIBA AND VOLTLABOR BECOME PART OF THE EUROPEAN BATTERY INITIATIVE EuBatIn

One of the EU Commission's key strategic goals is to develop a competitive European battery production. For this purpose, it launched the IPCEI (Important Project of Common European Interest) program "EuBatIn." Miba and the company we have invested in, Voltlabor, are two of only six Austrian companies that have been invited to participate. As part of a two-year qualification process, the technologies offered by Miba and Voltlabor were tested from top to bottom. In addition, a rigorous assessment of the business model and growth prospects was carried out. Finally the potential of the two companies was confirmed at EU level. Their inclusion in the initiative serves as an additional boost for growth for both companies, which want to use it to establish their battery technologies on the market even faster. As a comparatively small player, for Voltlabor its participation is a special distinction, and shows the company's clear position as a pioneer in battery technology in Austria.

MILLIONS IN INVESTMENTS PLANED

After years of careful development of the product and production, multi-million euro investments will now enable the establishment of exemplary battery production in Austria. This will make Voltlabor GmbH the biggest Austrian manufacturer of Li-ion battery packs. Battery technologies are a relatively new business area for Miba, but we see strong growth opportunities in them. These range from drive technology for vehicles, ships or aircraft, through to solutions for power plants and power grids, and battery technology.

Our innovative components, such as the FLEXcooler® and the Voltlabor battery technology, are very positively received on the market.

We are currently seeing a sharply increasing demand for electrification in a wide range of applications. Our battery technologies are already being used in applications on water, on the ground, and in the air. Our goal now is to scale these technologies worldwide to fulfill our "Technologies for a cleaner planet" mission.

Stefan Gaigg, Business Unit Leader Battery Components Miba, Managing Director Voltlabor GmbH

Voltlabor Terra platform:
NEW BATTERY SOLUTION FOR COMMERCIAL VEHICLES

With the TERRA platform, Voltlabor has defined customized battery solutions for road and off-highway vehicles. With the different dimensions, the batteries meet the current installation space requirements. Different interconnection options can be implemented through the modular approach. The high scaling of the battery packs with serial/parallel interconnection means they can be expanded to larger battery systems to meet customer requirements.

The award-winning, flexible-shaped Miba FLEXcooler® is installed in the battery packs. The TERRA platform is developed in accordance with automotive standards and for the automated series production with the highest quality requirements (FMEA, APQP, PPAP, R@R). This guarantees the traceability of the installed components.

Flexible battery cooling for electric vehicles:
MIBA FLEXcooler® ADAPTS TO THE SHAPE OF BATTERY CELLS

One of the main challenges when developing electric drives is the thermal management of the batteries. This is key for the vehicle's range and battery life, and is also an important factor for fast charging. The current trend in development is toward liquid cooling. The main challenge here is to establish an optimal thermal connection between the battery cells and the heat sink. With the Miba FLEXcooler®, Miba has developed a battery cooling system which, with its flexible shape, adapts optimally to the battery cells. The Miba FLEXcooler® is the first liquid cooling system on the market which, due to the close connection between the battery cells and cooling system, not only optimally absorbs and dissipates heat, but also does not require any gap fillers, namely materials to fill the space between the battery cells and the cooling system. Another advantage of the Miba FLEXcooler® is its low weight. It can be used for prismatic, cylindrical and pouch battery cells.

SUSTAINABLE

ENERGY USE

Efficient and sustainable use of energy is a key to achieving ambitious climate targets. With our technologies, we want to make powertrain technology for conventional, hybrid and pure electric vehicles even cleaner, and proactively help shape the mobility of tomorrow. And with our solutions for industrial applications, we are also making a contribution toward more energy efficiency and thus a cleaner planet.

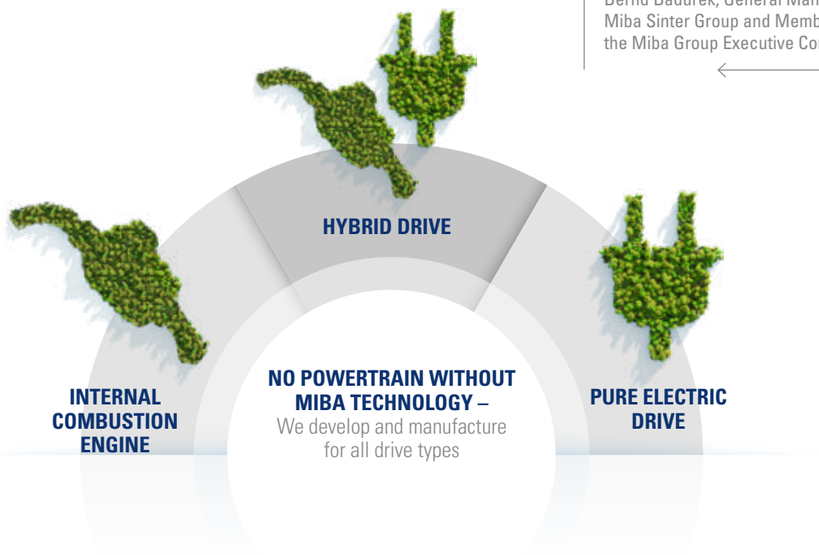
POWERTRAIN TECHNOLOGY:

MIBA TECHNOLOGY FOR ALL POWERTRAINS

No matter whether it is an internal combustion engine, hybrid or purely electric drive, Miba develops and manufactures products for all powertrain technologies. Every one of these will continue to play a role in the future. And every one of them will also contribute to reducing pollution, and thus to a smaller global carbon footprint.

We develop the powertrain technologies of tomorrow together with our customers.

Bernd Badurek, General Manager Miba Sinter Group and Member of the Miba Group Executive Committee



The powertrain technology of tomorrow is diverse – we are convinced of that. We see great growth opportunities in electrification, which is why today we are already developing and manufacturing a range of solutions for hybrid drives – in other words the combination of internal combustion engines and electric motors – and for pure electric drives. At the same time we are working on further optimizing conventional drive technology, because we see further development potential in the internal combustion engine. We are doing all of this with one goal: to make drive systems even more efficient, environmentally friendly and quieter.

Award-winning innovation:
INNOVATION AWARD FOR MIBA SPUTTER TECHNOLOGY – WE MAKE FLYING MORE ENVIRONMENTALLY FRIENDLY AND QUIETER

Within the context of the Upper Austrian Innovation Award, Miba's sputter technology received the Jury Award for "radical innovations", which is awarded for particularly outstanding achievements. The integrated bearing technology developed by Miba leads to 15 percent less fuel consumption in aircraft turbines, as well as 20 percent less noise and 15 percent fewer CO_2 emissions. Overall, its development has taken more than 20 years, but Miba technology is now being installed in more than half of all new medium-sized aircraft worldwide. The gear wheels in the gearboxes of aircraft turbines are coated using the Miba sputter process. The bearing function integrated via the coating requires less installation space and achieves higher efficiency. This makes the turbine more efficient, more environmentally friendly and quieter. According to the pilots, the effect is so great that they no longer hear the turbine above a speed of 100 kph. They can only see on their instruments that it is in operation. As the next step, Miba is working on a lead-free sputter coating, to make the technology even more environmentally friendly.

Miba was awarded the Jury Award for "radical innovations"

First customer approvals for lead-free bearings:
PROTECTING THE ENVIRONMENT AND OUR EMPLOYEES

In 2018, lead was put on the SVHC ("Substance of Very High Concern") list of the REACH Regulation. Reason enough for Miba to develop "Generation 2": a lead-free alloy that can replace the lubricating properties of lead with the help of a sulfur additive. "Generation 2" excels with high fatigue strength coupled with the robustness of lead-containing bronze. The completely lead-free product protects not only the environment, but also the health of our manufacturing personnel. In 2020, we received customer approvals for the first designs, and the bearing material was successfully produced on a large scale for the first time.

Generation 2 bearings:
Fatigue strength despite being lead-free

SINTER TECHNOLOGY
FOR MORE EFFICIENT AND CLEANER DRIVES

Compared to other manufacturing methods, powder-metallurgical solutions from the Miba Sinter Group enable maximum utilization of the material used. This achieves a reduction in the weight of internal combustion engines, thereby reducing fuel consumption and making them even more eco-friendly. The use of powder alloys reduces waste and consumption of raw material compared to conventional manufacturing technologies. Miba sintered components also reduce noise and vibrations. Proven products from the transmission and engine area are consistently further developed and optimized by our specialists in order to make them even more eco- and user-friendly.

SINTERING TECHNOLOGY FOR e-AXLES

This comprehensive expertise from the conventional drive train is also carried over to electromobility applications. In this way, our knowledge of NVH (noise, vibration, harshness) or gearing can also be used for e-axle components. These include planetary gears with a ring gear, planetary wheels and sun gears, or high-strength actuators for parking brakes or clutch packs. Miba is also researching new material concepts such as aluminum, copper and titanium alloys, and possible areas of application for them. Among other things this will enable new functionalities in porous components. They can also be used in components for hydrogen electrolysis, bipolar plates or heat pipes for optimization in heat management.

SOLUTIONS FOR INDUSTRIAL APPLICATIONS

We are now also passing on our many years' experience in materials and production processes to customers from the industrial sector. Sintering technology enables lighter and more efficient solutions than traditional materials such as steel. Powder metal is the ideal application for parts that simultaneously require a complex geometrical design and cost efficiency. These components are used among other things in household appliances, garden technology, robotics, conveyor technology, medical technology or fitness equipment.

BETTER TORQUE TRANSMISSION

Dry multi-disk clutches from the Miba Friction Group deliver many benefits.

Multi-disc clutches are an essential part of vehicle drives. Every drivetrain includes gear wheels that transmit torque from one level to the next via "positive engagement". When the vehicle is driven around a corner, the torque is transferred only to a fixed position. In the case of a multi-disk clutch, this can also be done with "slip". This makes it easier to control the torque – more specifically, in a continuously variable manner. A distinction is made between wet, namely oil-lubricated, multi-disk clutches and dry multi-disk clutches. The Miba Friction Group develops the friction technology for both lubricated multi-disk clutches and dry multi-disk clutches.

ENVIRONMENTALLY-FRIENDLY TECHNOLOGY

The advantages of dry multi-disk clutches lie in their higher efficiency and the absence of oil. A dry system can also achieve higher torque density. All of this saves energy.

Dry multi-disk clutches

LOWER WEIGHT, SMALLER INSTALLATION SPACE AND OPTIMIZED POWER TRANSMISSION THANKS TO MIBA FRICTION TECHNOLOGY

Friction components are essential elements of clutches and brakes. In these components, they serve to transmit power efficiently and optimally. Miba friction technology is used in a number of end-use applications, for example tractors, construction machinery, trucks, cars, aircraft and wind turbines, where they make an important contribution everywhere to reducing the installation space and weight.

SAFE, QUIET BRAKES FOR HIGH-SPEED TRAINS

Miba's high-performance friction components are used in the brakes of high-speed trains. Even at speeds of around 400 kph, they are characterized by their robustness, weather resistance and noise insulation – thus ensuring safe, quiet trains.

MORE EFFICIENT POWER SUPPLY FOR INDUSTRY AND RAILWAYS

An air-cooling product jointly developed by our Styrian company DAU and the Miba Sinter Group has many convincing advantages.

The basic function of semiconductor switches (such as IGBTs, for example) is to switch electric currents as quickly as possible and hence with low loss. DAU cooling technology is used to dissipate the heat which results in the process. Due to the further development of electronic semiconductor switches in past years, the demands our customers place on the thermal behavior of the cooling plates increased, so in 2018 we started developing a new air heat sink. This generally consists of a plate in which the electronic components to be cooled are mounted on one side, while cooling fins provide heat dissipation on the other side. So far, several heat conduction tubes, called heat pipes, were embedded as individual elements in the cooling plate to spread the heat in order to increase the efficiency of the cooling plates and thereby meet customer requirements. A heat pipe is a hermetically-sealed "work space" in which a liquid carries out the heat transport in a circuit of vaporising and condensing. However, pressing in the heat pipes was not enough for the new high-performance requirements.

THE CHALLENGE

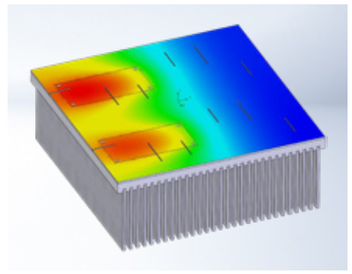
The heat sink has its highest efficiency when the surface is heated through uniformly, whereby the heat is introduced into the electronic semiconductor switches locally in relatively small areas via the so-called chips. The built-in heat pipe has 1000x greater thermal conductivity at the installation point than the plate material aluminum. Therefore, the challenge was to integrate the heat pipe over the complete surface of an aluminum plate.

OUR SOLUTION

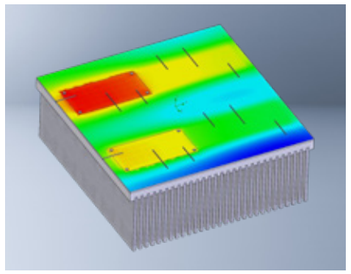
It was possible to create the "work space" of the heat pipe by milling a pocket into the heat sink. This space is sealed permanently and vacuum-tight by means of a vacuum-soldering method. The "ideal" filling liquid was then determined in many test series. That way, we were able to considerably improve the heat distribution in the cooling plates and thereby successfully increase the cooling capacity.

What is new about our system?

- Minimized heat transfer resistance and thus better thermal conductivity
- Up to 25% improvement in the thermal properties
- 50% fewer components
- Integration of the heat pipe function into the aluminum plate of a heat sink
- Possibility to adapt the vacuum chamber for individual power modules and applications
- Air-cooled power supplies (200 kW to 1000 kW) don't have to be changed over to liquid-cooling (optimized total operating costs)



Thermal distribution during loading without a vacuum chamber and...



...with a vacuum chamber

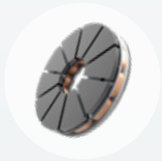
e-MOBILITY:
MIBA TECHNOLOGIES FOR ELECTRIFICATION

Broad product range for e-mobility
Miba already offers a range of solutions for e-mobility today – for hybrid drives as well as for pure electric driving. As an innovative partner with decades of automotive experience, we are proactively shaping both the mobility of the future and the market in close cooperation with our customers.


Battery systems


High-voltage fuse for batteries


Pre-charge and discharge resistors


Axial flux motors and actuators


Hairpin stator production and systems


Battery components – FLEXcooler®


Coatings for powertrains / fuel cells


Friction components


Sintered components

More compact, more efficient, safer:
POWER RESISTORS FOR ELECTRIC VEHICLES

Miba power resistors are a valuable part of almost every electric car in China or in Europe. Projects have also been started in US for major car manufacturers. Additional functionality and further integration is well advanced in series production: performance, temperature and function of important parts of the electric drive system can be monitored via sensors. The result is that this data can be used to monitor and use all the systems efficiently The resistors ensure that the electrical voltage in the system is immediately and safely dissipated when the electric vehicle is switched off, or in the event of an electrical system fault.

Our high-performance resistors are already in series use today in numerous electric vehicles, including those of the world's largest car manufacturer.

We are investing in the automated production of our resistors at our locations in Austria and China. This will enable us to serve the strongly growing global electric car market even better, and secure our position as a leading supplier of pre-charge and discharge resistors. The aim is to expand our market leadership even further.

Jens Kuschel, General Manager, Miba Power Electronics Group

Growth opportunities for our Styrian power electronics specialists:
EBG INVESTS EUR 2 MILLION IN PRODUCTION FACILITIES FOR e-MOBILITY

Electromobility is significantly gaining momentum. This is creating new growth opportunities for companies that have previously been primarily active in industrial electronics, such as the Miba power electronics specialist "EBG Resistors". To date its resistors have been used, for example, in systems for energy generation, for power grids, for rail vehicles or in medical technology – but they are also needed in electric vehicles in order to meet the strict electrotechnical safety requirements. With an investment of EUR 2 million at the sites in Kirchbach and St. Stefan in Rosental, EBG is taking advantage of this market opportunity and building new production facilities for such resistors in electric vehicles. The investment is expected to be concluded by the end of 2021, with production starting at the beginning of 2022. This investment was triggered by a large order for one of the major electric car platforms in Europe, and EBG was selected to be represented there with its discharge resistors. These resistors ensure that the electrical voltage in the system is immediately and safely dissipated when the electric vehicle is switched off, or in the event of an electrical system fault.

DIGITALIZED SERIES PRODUCTION IN LINE WITH THE STRICT STANDARDS OF THE AUTOMOTIVE INDUSTRY

To become a supplier to the automotive industry, companies must meet strict standards. These are demonstrated by the IATF certification, which is currently being carried out for EBG. The new production facilities in Kirchbach and St. Stefan will also meet the latest requirements, and will use digital high-tech to do so. For example, every discharge resistor produced will be traceable, in other words it can be tracked digitally from its material and production, through to its installation in the vehicle and use. This is hugely advantageous, because it enables the product quality to be monitored and evaluated optimally in the long term, and thus continuously improved. Big data applications are also being used.

As part of the Miba Group, which has been successful in the automotive supply market for many decades, EBG can exchange information extensively with its parent company and use its expertise and knowledge of the industry.

Alois Klein, Managing Director of EBG Resistors

Miba Powerfuse:
SAFETY FOR ELECTRIC VEHICLES

In the event of an accident or a fault in the electrical system of an electric vehicle, it is essential that the current flow is immediately switched off. If this is not successful, then the vehicle may be electrically energized – a danger not only for the occupants of the vehicle, but also for helpers. Our company developed the Miba Powerfuse as a solution for precisely this challenge. It is a fuse that disconnects the electric circuit in a fraction of a second in the event of accidents or malfunctions.

PYROTECHNICS DISCONNECT THE BATTERY FROM THE VEHICLE ELECTRICAL SYSTEM

In an emergency, the Miba Powerfuse disconnects the battery from the vehicle electrical system by means of a pyrotechnical explosion. It can be thought of as a small firework that is powerful enough to break the connection. Incidentally, it is triggered not only by an emergency signal from the vehicle, but also when that signal cannot be sent due to a fault. This is a major additional safety aspect. But a safety system like the Miba Powerfuse faces yet another challenge. Not only does the connection between the battery and the vehicle electrical system have to be interrupted, but the high amount of electrical energy that exists in the system also has to be discharged. In the Miba Powerfuse an additional integrated switch connects a discharge resistor and manages this discharge functionality.

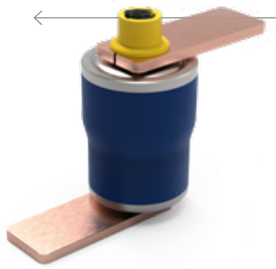
APPLICATION IN PREMIUM VEHICLES

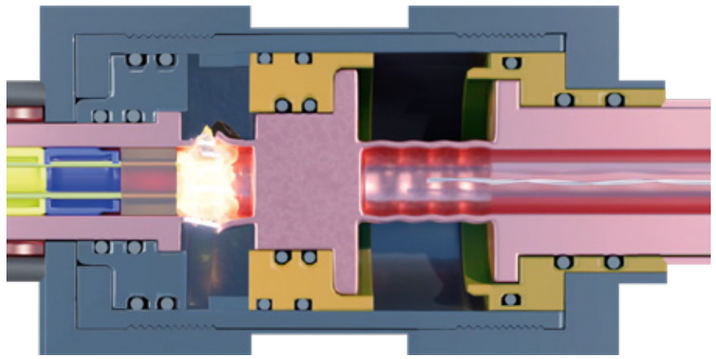
The Miba Powerfuse is currently in the development phase. In the future, it will be used mainly in premium vehicles with voltages between 800 and 1000 volts in their electrical system.

The future battery and fuel cell systems are currently being prepared with impressive energy densities and charging capabilities.

Our Miba solutions are characterized by unique power density and efficiency for fast and safe disconnection and discharging.

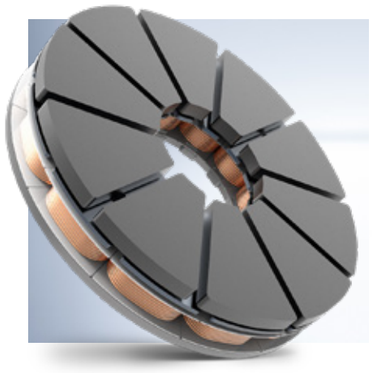
Gerhard Stempfer, Head of Business Unit Power Safety Devices





Miba Powerfuse – innovative, high power density and reliable

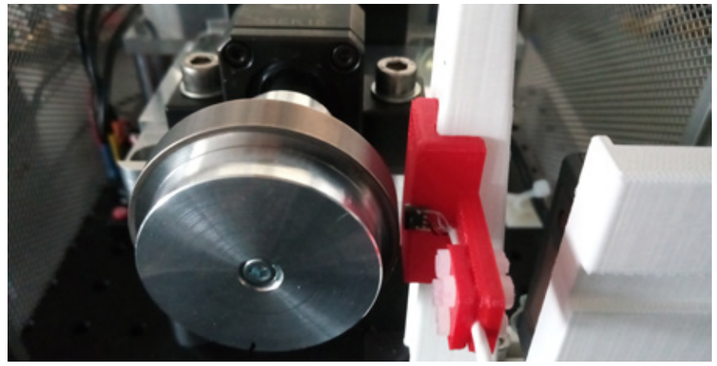
Axial flux motor:
MIBA DRIVE FOR ACTUATORS AND PUMPS



Miba's axial flux motors are characterized by their disk-shaped design, high torque density and silent motion behavior. Application fields where these attributes are of particular interest include electrically-driven actuators as well as pumps. In cooperation with our customers it is therefore possible to reduce the emissions of commercial vehicles with modern rear-axle steering systems and at the same time save installation space and weight. The electrohydraulic unit is activated only when required, and thus makes an active contribution to reducing fuel consumption. At the same time, this can reduce the tire wear of trucks when cornering. The electric motors developed for this purpose can be scaled also to the requirements of other applications.

Encoders / new coatings:
NEW INNOVATIONS FOR ROTARY ENCODERS AND BATTERIES

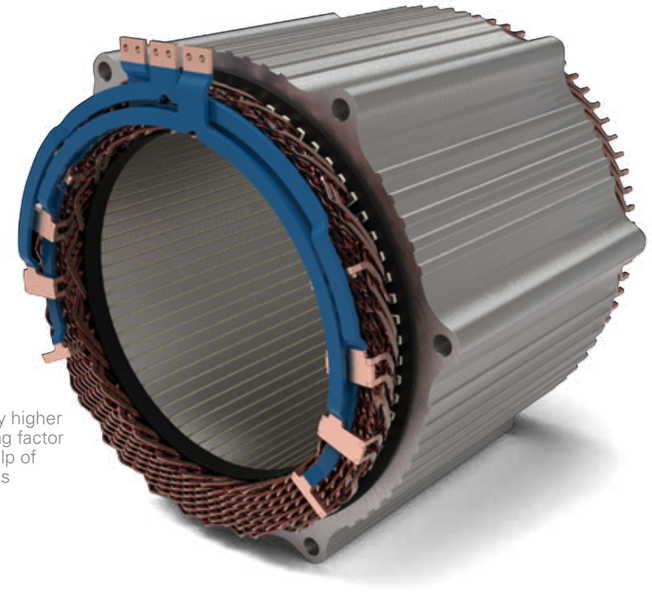
The Miba business unit "Encoders / New Coatings" is involved among other things with coating-based solutions in the field of e-mobility. Two main areas of focus are rotary encoder systems and battery technology. In the field of rotary encoders, polymer-based magnetic rings are currently used in the market as signal generators (pulse wheels). These have disadvantages in terms of precision as well as their temperature and solvent stability, and can therefore only be used to a limited extent in electric motors and high-speed systems. The Miba solution: these disadvantages can be overcome by the use of pulse wheels with hard magnetic CoSm layers. Temperatures above 200 °C, rotation speeds of more than 30,000 rpm, and advantages in terms of installation space and integration effort, are creating a large and positive response from customers even during the current prototype phase. In the field of battery technology the development points to increase of battery lifetime and in addition to process improvements in battery assembly. In the latter case, the goal is to get rid of expensive, energy-intensive and harmful organic solvents. Coin cells and pouch cells are already in long-term testing, and the first results are expected in mid-2021.



Rotary encoder

Pin winding:
MORE COPPER IN STATORS LEADS TO GREATER EFFICIENCY IN ELECTRIC MOTORS

Pin winding or flat wire technology refers to traction machines in the e-mobility Automotive industry. With this method, a significantly higher copper filling factor can be achieved, in other words more copper can be introduced into the stator. Conventional electric motors have a copper filling factor of up to 45 percent – with Miba technology, this increases to up to 70 percent. And the more copper used in the stator, the higher the efficiency of the motor.



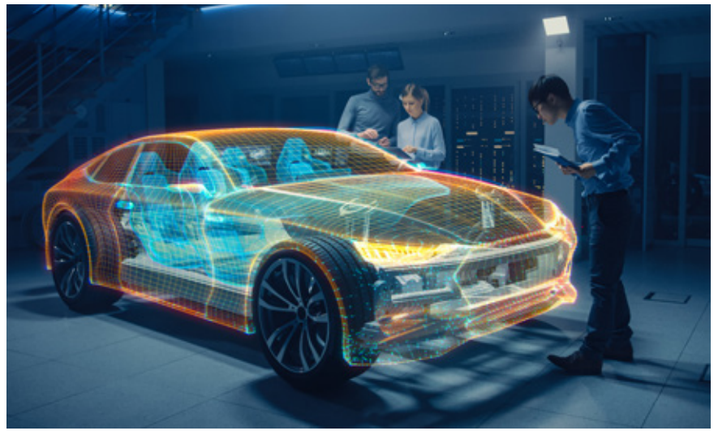
Significantly higher copper filling factor with the help of molded rods

Miba Frictec is equipped for requirements:
CLUTCHES FOR e-AXLES INCREASE ENGINE EFFICIENCY

In general, fully electric drives (BEV) do not have a classic transmission. Instead, in the future there will be a need for multispeed e-axles. The shifting capability is necessary to increase the efficiency, which leads to a greater range.

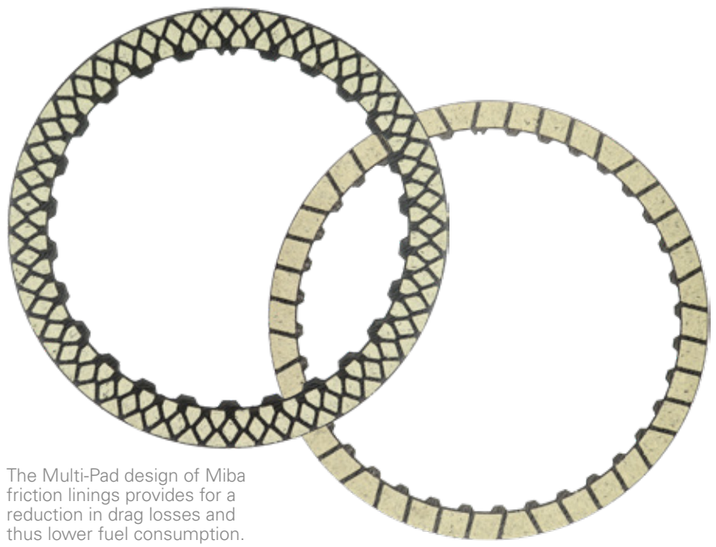
DRY AND WET MULTI-DISK CLUTCHES

Applications in the mid-performance range work with more cost-effective air cooling of the electric motor. We are currently working together with other industrial partners on a project for a 2-speed e-axle. The customers' requirements are high efficiency, small installation space and high material strength. These coincide very well with the advantages of the Sinter friction lining technology PCC (Pro Control Compound) developed by Miba. A transmission layout without oil cooling can only be implemented with PCC. In applications with high power-density requirements, oil-cooled drive units are necessary. In contrast to today's series applications, they have a common oil supply for axle gears with an integrated friction system, electric motor and electronics. The required oil technology differs significantly from the oils used today, due to incompatibilities between individual formulation components and components of the electronics. To increase the overall efficiency, the viscosity is reduced at the same time. The thinner oils have reduced lubricity. We are working closely with well-known oil and additive manufacturers in order to be able to offer superior solutions here as well.



Resource conservation in use and production:
MULTI-PAD DESIGN

The crystalline structure on Miba friction discs is called Multi-Pad design. The design is mainly used for friction discs in hybrid transmissions and double-clutch transmissions. Compared to the standard design the Multi-Pad design provides a reduction of drag loss and thus lower the fuel consumption. In addition the design leads to an improved oil distribution in the couplings which increases power density and reduces the oil volume. Based on efficient production processes, such as we use and are continuously developing, raw material can be saved.



The Multi-Pad design of Miba friction linings provides for a reduction in drag losses and thus lower fuel consumption.

Use in EUV lithography:
MIBA HIGH-TECH COATING FOR EXTREMELY POWERFUL AND ENERGY-EFFICIENT MICROCHIPS

Mobile phones with the latest 5G standard, the artificial intelligence in virtual assistance systems, or even autonomous driving: they all require high data-processing speed and therefore state-of-the-art, extremely powerful micro-chips. And high-tech coatings from Miba help to create an important prerequisite for producing these micro-chips.

Although these microchips are smaller than a fingertip, they contain circuits which display the capacity of up to 15 billion transistors (small circuit elements). To be able to produce them, EUV (Extreme Ultra Violet) lithography technology is used, where an EUV lithography machine creates the tiniest structures on the microchips by means of extremely short-wave ultraviolet light.

PVD (PHYSICAL VAPOR DEPOSITION) FOR EXTREME PRECISION AND SURFACE FLATNESS

Directing the extremely short-wave ultraviolet light for EUV lithography to the right places requires optical systems with mirrors. And this is where Miba's coating technology comes into play. Under clean room conditions and in a high vacuum, a 5 µm (0.005 mm) amorphous silicon layer is applied to the mirrors. At High Tech Coatings this coating process takes around 24 hours. The mirrors are then intricately processed by the manufacturers of the complete optical systems for the EUV lithography machines.

Miba technology for industrial applications

Miba products are used in a variety of industrial applications. Thus, for example, our bearings are found in turbines, compressors, pumps and gearboxes in industrial applications. Leading manufacturers of electric motors, medical devices, frequency converters or measuring devices rely on our EBG power resistors for their particular performance. DAU provides its customers with efficient and individually-tailored cooling solutions. Miba sintered components are used in household appliances, garden technology, robotics, conveyor technology, medical technology and fitness equipment.

To continue to improve, we need to act small and think big in equal measures.

Every measure that is actually implemented, no matter how tiny, is important for pushing ahead with our "Technologies for a cleaner planet" mission.

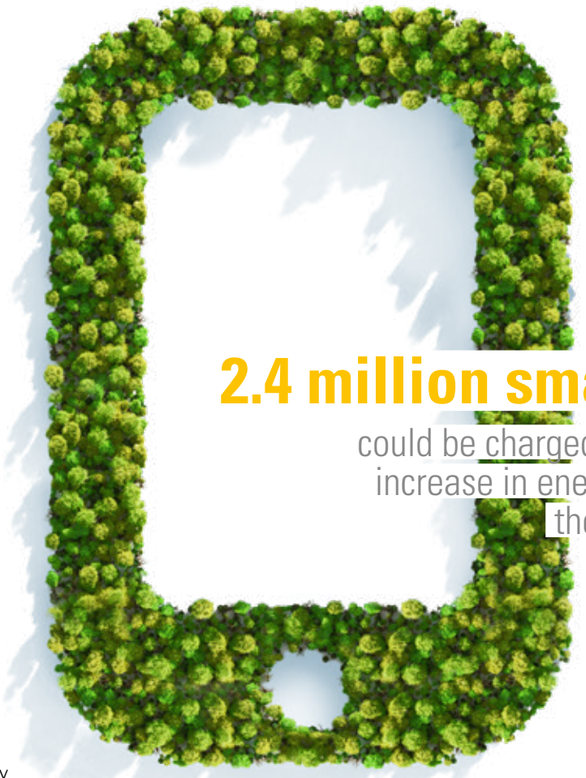
Franz Almhofer-Amering, Head of EHS (Environment, Health, Safety), Miba AG

AS A FAMILY-OWNED COMPANY

WE TAKE RESPONSIBILITY FOR THE ENVIRONMENT AND SOCIETY

The mission "Technologies for a cleaner planet" is firmly anchored throughout Miba. It is our contribution to reducing emissions and thus achieving the Paris Climate Agreement targets.

This mission is not only the basis of our products and processes, but above all it reflects the company's and its employees' sense of responsibility toward the environment. That is why for years we have made the resource-saving use of energy and water, and the reduction of waste, two of our major focal areas.



2.4 million smartphones

could be charged daily through our increase in energy efficiency over the past three years.

EFFICIENT USE OF ENERGY

Our goal is to increase our efficiency by around one percent per year. We have already succeeded in doing this for several years. In the past fiscal year as well, by means of various improvement measures we were able to improve energy efficiency across all of our locations by 1.2 percent compared to the previous year. In the last three years, this has meant a saving of 12,325 MWh, equivalent to charging 340,000 electric cars once, or charging 2.4 million smartphones daily.

DECARBONIZATION IN LARGE AND SMALL STEPS

We have achieved the energy savings mentioned above through numerous measures: from the introduction of energy-saving LED lighting in many locations and the use of natural light, to more efficient use of compressed air and air-conditioning systems, and modernization of the machinery.

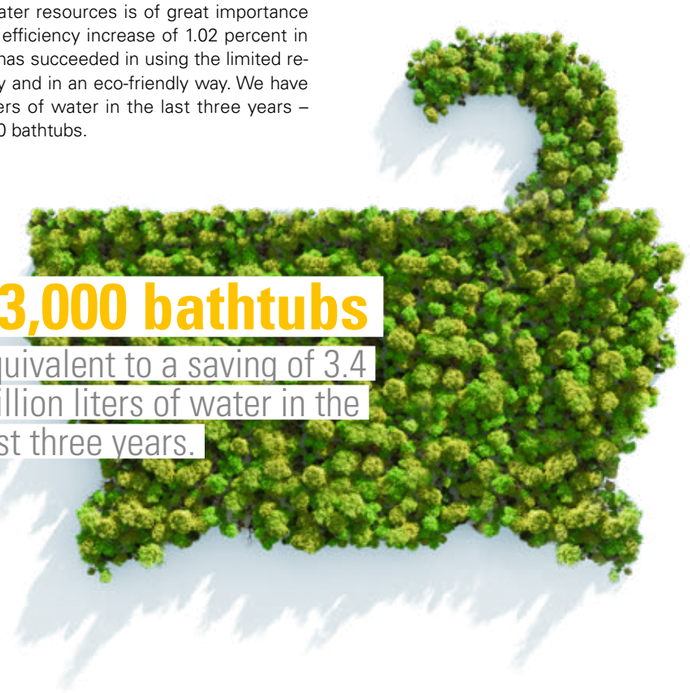
Load-dependent control of the sintering furnaces resulted in a reduction of 1,200 MWh per year. The introduction of around 500 LED elements has resulted in savings of more than 1,000 MWh per year. The extensive optimization of air-conditioning systems and the use of waste heat has achieved an energy saving of 300 MWh per year.
Shutting down devices in a timely manner when they are not required is important, not only for large production machines, but in particular for smaller consumers as well – despite the low individual effect of the latter, the active support of all our employees is achieving a significant improvement.

BIG DATA SUPPORTS RESOURCE CONSERVATION

In the structured search for further improvement potential, Miba has made a major commitment to the new possibilities offered by Industry 4.0. The advancing digitalization and the resulting big data analysis will make our internal processes more efficient and sustainable in the future. In addition to energy sensors, controlling machines by means of the IIOT connection will play a key role in tracking the intricacies of the production processes. The data collected in this way will be enriched with the information from the most important core systems such as SAP or the quality management software. Even with fully-automated processes, there is extensive potential to be discovered. Furthermore, in the future the data obtained will enable us to calculate an even more accurate carbon footprint for individual products and to initiate targeted improvement measures.

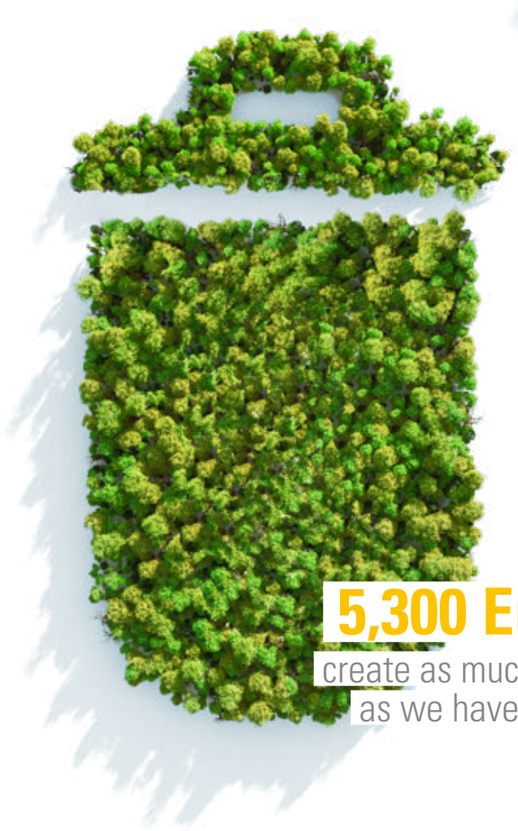
WATER IS A PRECIOUS COMMODITY

The sustainable use of water resources is of great importance to all Miba sites. With an efficiency increase of 1.02 percent in the past fiscal year, Miba has succeeded in using the limited resource of water effectively and in an eco-friendly way. We have thus saved 3.4 million liters of water in the last three years – enough to fill about 23,000 bathtubs.



23,000 bathtubs

equivalent to a saving of 3.4 million liters of water in the last three years.



VISUAL INSPECTION REDUCES REJECTS

Responsible companies seek to keep their raw material and energy consumption as low as possible. Miba has therefore decided to use visual inspection to reduce rejects in production. The use of image recognition and non-contact measuring systems is essential here, in order to detect faults early on and enable optimizations to be carried out immediately during the ongoing production process. Our visual inspection was set up by a team of experts who are also addressing the use of artificial intelligence and deep learning methods in quality optimization. Ultimately the use of such systems will lead to greater sustainability.

WASTE PREVENTION IS RESOURCE CONSERVATION

Since 2017, it has been a declared goal of Miba to minimize waste volumes through improvements and waste prevention projects. In the last three fiscal years, the waste reduction was 2,600 tons, which corresponds to the annual volume of waste created by 5,300 Europeans.

5,300 Europeans

create as much waste annually as we have saved in the last three years.

03 **MIBA DIGITALIZATION**

We want to take on the role of a digital pioneer in our markets: By creating digital added value for our products. By developing new services for our customers based on our data. By making our processes even more efficient and quality-oriented. And by developing new, fully digital offerings for our markets.

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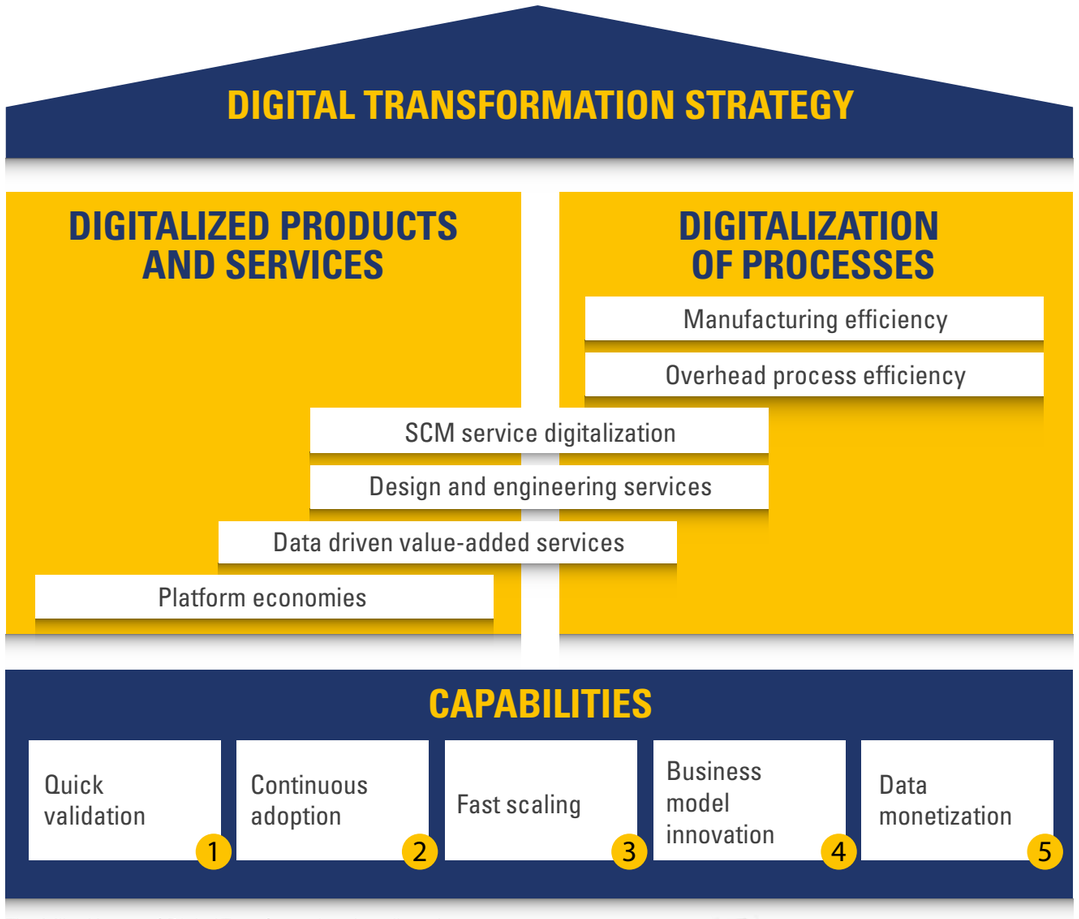
DIGITALIZATION @ MIBA

MIBA HOUSE OF DIGITAL TRANSFORMATION – OUR DIGITALIZATION STRATEGY



The Miba House of Digital Transformation describes the areas in which our company aims to use the opportunities offered by digitalization, and shows the capabilities that are required for this.

Digitalization has become part of our everyday lives almost unnoticed. Smartphones have become our constant companions. We use search engines, book flights and travel online, network on social media, and buy in online marketplaces. And digitalization has also changed the way we work and manufacture as industrial companies – and the future will be even more digital than we can imagine today. So we are in the middle of a digital transformation that we see as an opportunity – because it offers us a multitude of possibilities. We want to create real added value for our customers with digital products and services. And we want to become even more quality-oriented and efficient by digitalizing our processes in production and administration.

> The digital transformation offers us a multitude of opportunities. We want to create real added value for our customers with digital products and services.
>
> And we want to become even more quality-oriented and efficient by digitalizing our processes in production and administration.
>
> Jesper Hansen, Vice President IT, Miba AG

CORE AREAS OF THE DIGITAL TRANSFORMATION

FIELDS IN WHICH WE WANT TO USE THE DIGITAL TRANSFORMATION:

DIGITALIZATION OF PROCESSES ALONG THE ENTIRE VALUE CHAIN
This creates even more quality, efficiency and speed. It is about using digital communication and interaction to make the customer contact or the supply chain faster and more efficient. In addition, by networking data and combining visual inspection with artificial intelligence, we are making our production even more quality-oriented. And last but not least, it is about automating monotonous administrative processes and thus creating more time for our employees to work on important tasks.

DEVELOPMENT OF DIGITAL ADDED VALUE FOR THE PRODUCTS WE OFFER OUR CUSTOMERS –
for example through sensors connected to them. These measure data in real time, to continuously monitor and optimize not only the function of our products, but also the entire systems in which they are used. In this way, servicing can also be carried out at exactly the right time. And by networking the data of many individual products in the cloud, valuable information can be gained.

DEVELOPMENT OF DATA-BASED SERVICES
which create added value for our customers. There is a great deal of potential above all in the digital networking of Miba's global expertise. Important insights and prerequisites for customer projects are available at the touch of a button. This facilitates our joint development work with our customers.

DEVELOPMENT OF PURELY DIGITAL APPLICATIONS, such as online marketplaces.

MIBA-WIDE COLLABORATION – THE BASIS FOR A SUCCESSFUL DIGITAL TRANSFORMATION
On the one hand, the basis for our future success is our expertise in our technologies, but it also lies in the close cooperation between the IT Department, who are the specialists in the area of digital business development, and Miba's operational business areas. They are the ones who not only know the customers and their needs very well, but can also bring their in-depth expertise in our products to the development of new digital offerings for our customers.

DATA CREATE ADDED VALUE FOR CUSTOMER PROJECTS

Miba Application Engineering Tool

For the customers of a technology company such as Miba, it mainly comes down to just one thing: being able to bring our expertise and our extensive experience to their projects. An example from the Miba Friction Group shows the value of the data available in the company. With the Application Engineering Tool, we have developed an application which networks the expertise and data from the design of friction components worldwide. This means that together with their customers, Miba friction experts can draw on their experience from previous projects, and in this way make it easier and faster to find the ideal solution for new friction lining applications than has been the case to date.

Our Application Engineering Tool networks the data from the design of friction technology worldwide.

This means that together with our customers, we can draw on our experience from previous projects.

Gerald Schachinger, Vice President Sales & Marketing and Head of R&D, Miba Friction Group

QUALITY ASSURANCE THROUGH VISUAL INSPECTION AND ARTIFICIAL INTELLIGENCE

If rejects are reduced in production, then this can not only reduce the quality costs. It also saves raw materials and energy. Visual inspection is an important starting point for this. By using image recognition systems and non-contact measuring systems, nonconformities are detected and optimizations initiated in the ongoing production process. Miba set up a team of experts for this, which is also looking into the use of artificial intelligence and deep learning methods in quality optimization. The basis of the cross-divisional cooperation is the training program "Inspection Developer Training", which was first launched in December 2020.

MIBA mSolutions

Even greater product quality via globally networked machines

Digitalization ideas can be the source of global projects that are used by the whole of Miba. A good example is "mSolutions", the worldwide Miba platform for networking real-time machine data. With this, Miba is creating an integrated software platform for the digitalization of all its production processes. The start of the project was the idea of some of the employees at Miba Sinter Slovakia, who wanted to digitalize the team boards in production. These boards display important machine data which is continuously used to optimize production. Within a few months, the project was implemented in Austria and India together with a Miba software development team.

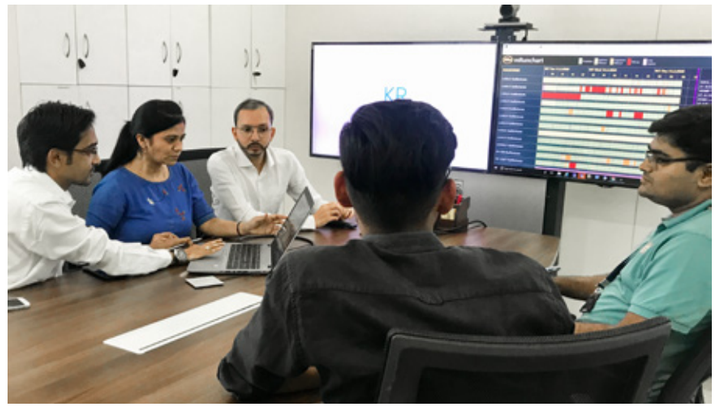
What quickly became apparent was that if we were to not only digitalize the team boards, and thus the existing real-time machine data, but also network them, then this would create enormous added value. The collected and networked data can be used to optimize production processes and quality, which is an advantage not only for Miba Sinter Slovakia, but for all our production sites worldwide. To be able to use and further develop the developed applications globally, a global software and hardware infrastructure – the "Miba Digital Engine" – was installed in just a few months, the expertise was further expanded and the team strengthened. The aim is to network as many machines in Miba's manufacturing as possible.

ARTIFICIAL INTELLIGENCE SUPPORTS PRODUCTION PLANNING

As a further highlight, the mSolutions team is currently working on the mPlanner: by means of artificial intelligence, the application will learn from the Miba production planners, and gradually support them more and more effectively in achieving better results in less time. And we want to use mSolutions beyond our plant boundaries, and involve suppliers, for example.

Networked data can be used to greatly optimize production processes and production quality. All the Miba locations worldwide can benefit from this.

Martin Schickmair, IT Enterprise Architect, Miba AG



Franz Mitterbauer Award given to a digitalization project for the first time

Last year, for the 7th time, Miba awarded its internal innovation prize – the Franz Mitterbauer Award – named after our company founder. For the first time, the prize was awarded not to a Research and Development team, but to the eleven innovators from Slovakia, India and Austria who are behind the mSolutions project.

An eleven-member team from Slovakia, India and Austria is contributing its production and IT expertise to the worldwide networking of machine data.

LET'S ROC!

Bots take over monotonous routine tasks

In 2019 it won the Franz Mitterbauer Award, an internal annual innovation prize – and now for the first time the ROC! (Robotics Operation Center) has taken center stage. ROC! is made up of 14 people and 40 software robots, or bots. The bots have the job of performing routine digital tasks, such as downloading documents from a customer portal, posting invoices in SAP, or creating monthly reports. This means that Miba employees can now hand over monotonous, recurring tasks to the bot, and focus on other activities.

The team is made up of the ROC! Change Team and the ROC! Product Team. The ROC! Change Team is the first point of contact for Miba locations with questions about Robotic Process Automation (RPA). The ROC! Product Team is responsible for the actual development of the bots and for process mining. To enable bots to be of assistance at the different Miba locations worldwide, employees who can contribute the necessary expertise are needed on-site.

The ROC! Team

Thanks to ROC! employees can now focus on strategically valuable activities, while the bot completes monotonous standard tasks in the background.

The aim is to use as many bots as possible for routine work. In this way we want to take on the role of a forerunner in our industry in the automation and digitalization of back-office activities.

Hartmuth Pelger, Head of ROC! Change Team

ROC! Projects are successful when the locations proactively help to organize them on-site.

This requires a common objective, as well as a contact person on the spot. For this purpose RPA consultants, RPA developers, PM analysts and PM developers are trained, and they then work in close coordination with the ROC! product team. This is important to ensure an efficient approach. RPA consultants/PM analysts are the first contacts on the spot, and they help the departments to identify potential and create process definitions. With the support of the product team, the RPA developers/PM developers develop automation solutions and process visualizations. This community of expertise enables us to respond to requirements in the best possible way, taking account of the prioritizations.

Johann Gollhammer, Head of ROC! Product Team

SMART MIBA PRODUCTS:

Intelligent bearings, power electronics and battery technology

One focus of our digitalization strategy is the generation of data to optimize the respective customer applications. Intelligent components make a significant contribution to this.

Thus bearings equipped with sensors can continuously measure data on their condition – and thus provide important information about when is the best time for maintaining or replacing them. This means, for example, that maintenance work for motors can be better planned.

In the Miba Power Electronics Group, we develop intelligent high-performance resistors. By means of sensors, they measure temperature, voltage and current, for example. Not only can the function of the resistors be monitored and optimized, but ultimately important information for the entire system electronics can be identified too.

In the future, our cooling technology too will become digital and thus intelligent, by means of sensors on the heat sink which measure the temperature of the electronic components and thus provide important data to the entire system. This will enable the optimization of the overall system, and extremely precise planning of maintenance cycles. This will not only save users money; it will also prevent damage and unnecessary maintenance work – and thus make a contribution to greater sustainability and a smaller carbon footprint.

Last but not least, we are working on equipping our cooling technology for batteries, the Miba FLEXcooler®, with sensors to make them smart. These sensors will collect important information about the temperature distribution in the battery. Its function can then be controlled and optimized during operation, which will increase the battery's performance and service life. In addition, the temperature data obtained in this way will form the basis for new digital offerings, such as early service warnings and evaluations of the battery data via cloud solutions.

Smart products generate real added value for customers in engineering and operation, which is why these developments are making a significant contribution to our digitalization strategy.

Martin Zauner,
Head of Digital Business Development,
Miba AG

GROW ING TO GETHE R

04 **MIBA COMMUNITY**

We want to grow together. Through worldwide collaboration, among ourselves and with our customers. Through our innovative spirit and our technology leadership. Through our expertise and our curiosity for livelong learning. And through our clear commitment to responsibility for our employees and society.

WORKING TOGETHER IS THE BASIS FOR INNOVATION

Our worldwide collaboration creates the basis for Miba's innovation and new ideas – and thus for our technology leadership in many market segments. Global cooperation is therefore one of the most important prerequisites for a successful future.

Solidarity and responsibility:
HOW WE ARE COPING WITH THE CORONAVIRUS PANDEMIC

In an industrial company such as Miba, the majority of employees work in production. Their work cannot be outsourced to them while they work at home during the coronavirus pandemic. They therefore have a great responsibility – because a higher number of coronavirus infections or extensive quarantine measures can lead to personnel shortages and, in turn, production and delivery difficulties. By protecting themselves at work and in their private lives and thus assuming responsibility, our employees have helped to prevent such situations.

In addition to the production staff, our employees in the offices also have a great responsibility. They too need to protect themselves and thus avoid becoming infected and and infecting their colleagues, not only in the office area but also in production. Measures such as the increased use of working at home, or maximum occupancy levels for meeting rooms, reduce the number of contacts that each person has every day, and thus the risk of infection. At the same time, it is still the case generally for the office area that through our protective measures we want to continue to enable physical and personal contact between people while they are working together. It is precisely working together like this that promotes ideas and innovation.

Healthy people – healthy company

Miba's guiding principle in the coronavirus pandemic

Average
length of service of Miba employees
Fiscal year 2020/21

9.1 years

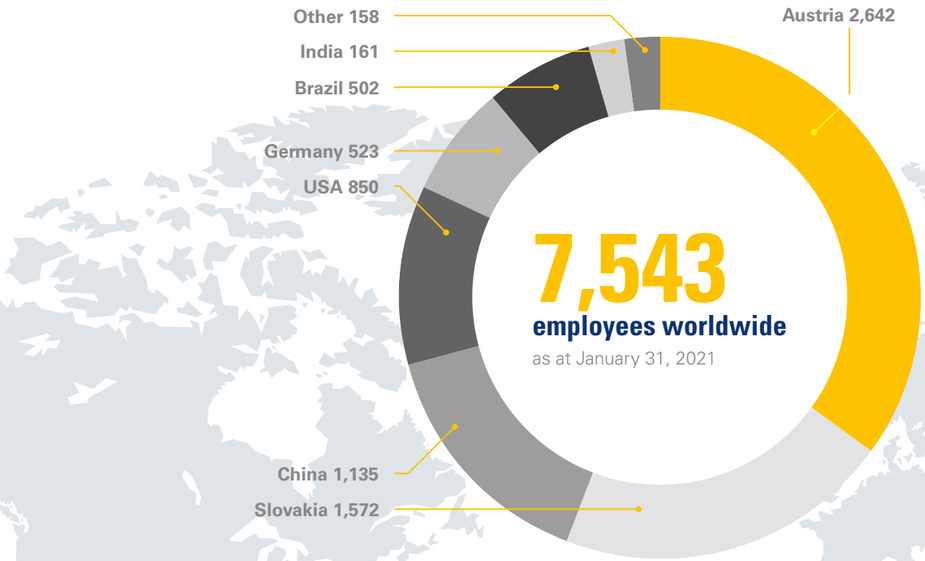
Average
age of Miba employees worldwide
Fiscal year 2020/21

39 years

Proportion of women at Miba worldwide
Fiscal year 2020/21

25.3 %

Miba employees by country



PLANT EXPANSION AND NEW PLANT CONSTRUCTION

Second plant location of MPCC in Suzhou, China

New production hall in Vráble (Slovakia)

We manufacture worldwide in all the important markets of our customers – entirely in line with the principle of "local-to-local." Therefore we are constantly investing in the expansion and construction of manufacturing sites. In May 2020, the expansion of the Miba Steeltec plant in Vráble, Slovakia, was completed. This included the construction of an additional production hall of around 5,500 square meters and a new administration building of around 600 square meters – for a new R&D area among other things. The construction of a second, additional, plant of Miba Precision Components (China) – MPCC – in Suzhou, near Shanghai, was largely completed in 2020. The additional location doubles MPCC's plant area to 48,000 square meters.

Working at Miba means working in a diverse, international team.

From the implementation of global projects to the regular exchange of best practices, as colleagues at Miba we work well together despite regional borders. During the coronavirus pandemic, our communication has not been affected by the travel restrictions. We quickly developed skills for using new collaboration tools such as Microsoft Teams. In addition to video conferencing, it is important for us to maintain immediate interactions such as sharing files and feedback. The time difference is not a problem either, because it is part of our diversity.

Snow Yu, General Manager, MPCC Holding

Compliance and Miba Code of Conduct: GUIDELINES FOR OUR WORK

Three years ago, Miba introduced a compliance management system. At its heart is the Miba Code of Conduct. This describes briefly and clearly the conduct Miba expects from all its employees in the areas of responsibility, conflict, corruption, information protection, import and export, and communication. For example, it explains how to handle gifts or invitations from business partners, or what information can be divulged to third parties on what conditions. Almost every employee will experience situations in their daily work that they can solve more easily thanks to the Code of Conduct. Since its introduction, there has been extensive communication and training worldwide. Compliance officers in all Miba companies take responsibility for this.

Miba's 7 compliance principles

- We treat people, nature and society at large with respect.
- We advocate fair and free competition.
- We make factually correct and objectively justifiable decisions.
- We do not tolerate bribery of any kind.
- We treat information and data with care.
- We are committed to doing cross-border business properly.
- We value the transparent and secure exchange of information.

The Miba compliance guidelines specify the playing field within which our employees have the freedom to act as entrepreneurs.

Angelika Eingmann, Head of Legal & Compliance, Miba AG

Miba's core values and corporate culture: INNOVATION AND TECHNOLOGY

As a technology company, it is particularly important to Miba to develop new solutions for our products of tomorrow in close partnership with our customers. Innovation and technology are therefore not just core values of Miba – our innovative spirit and our pursuit of technology leadership are also a corporate culture that we embody. We never want to settle for what we have achieved, but always look for an even better solution for our customers. We believe that innovation can never be the exclusive task of R&D departments. Rather, every employee can and should introduce their own ideas. And we have always invested heavily in research and development. We are also aware that the right framework conditions are needed to promote innovation, so we rely on an open dialog culture, flat hierarchies and the worldwide exchange of ideas across divisions, departments or countries. And under the motto "fail forward fast", we encourage our employees to explore new avenues and learn quickly from both their successes and their failures.

Innovation is our common task and takes place in all areas of Miba.

Every employee can and should contribute their ideas.

Falk Nickel, Vice President Innovation & Technology, Miba AG

PROTECTION BY PATENTS

For Miba's sustainable economic success, it is essential that the innovations created by our employees are legally safeguarded as well as possible. Miba's patent department makes a significant contribution in this respect by assisting in the evaluation of ideas, the wording, the assessment of competitors' patents, and the development and implementation of Miba's patent strategy.

300 Almost **employees** work in Research & Development at Miba

43 **new patent applications** in fiscal year 2020/21 alone

400 Around **patents** in total are held by Miba

Innovation and further development is one key, and strategic and legal security is the other key to Miba's economic success!

Thomas Harringer, Senior Patent Counsel, Miba AG

MIBA CAMPUS

LIFELONG LEARNING IS THE BASIS FOR INNOVATION

The expertise, experience and personal commitment of our employees are essential prerequisites for Miba's innovative strength, technology leadership and high product quality.

So we invest heavily in education and training: in the past fiscal year alone, the figure was EUR 1 million worldwide. The wide range we offer is combined in the Miba Campus. Our programs are tailored to the personal needs of our approximately 7,500 employees. The Miba Leadership Academy (MLA) is the global training program for specialists and managers. Apprenticeship training, customized basic training courses, and special programs for individual locations, such as conveying specialist technical knowledge or developing our managers, are also of great importance. During training on the job, employees are allocated experienced colleagues to explain procedures to them and give them important additional information.

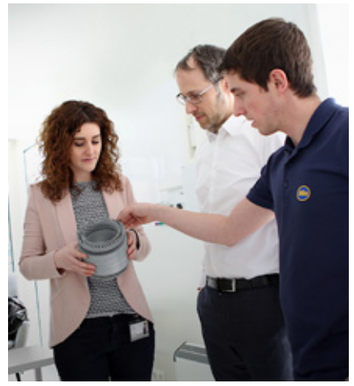
Decarbonization and digitalization are fundamentally changing our business…

…and the demands on the technical and personal skills of our employees. We want to make them fit to help shape Miba's future.

Bernhard Reisner, Vice President Human Capital and Member of the Miba Group Executive Committee

1 **million euros**
were invested in the training and development of our employees in fiscal year 2020/21

550 **people**
have completed Miba's worldwide management training programs since 2003.



Miba Leadership Academy: THE HEART OF THE MIBA CAMPUS

Since 2003, the Miba Leadership Academy (MLA) has offered our specialists and managers a global training program focusing on leading people, leading business, and leading oneself. With the MLA, we want to actively support our employees' career paths, both through the acquisition of new specialist skills (e.g. digitalization) and in the area of interpersonal skills. The MLA usually takes place in several modules in Europe, the USA and China, in cooperation with the Austrian Business School LIMAK. Due to the coronavirus pandemic in 2020, we had to restrict ourselves regionally to Europe.

The MLA is offered in three different programs – the Business Lab, the Expert Lab and the Leadership Lab.

BUSINESS LAB

The Business Lab focuses on entrepreneurial behavior, self-management and communication. Employees who have completed the Business Lab understand Miba better, know about economic relationships, and know the tools of intercultural communication. In two modules the participants acquire insights into our business areas, meet members of top management, and visit different Miba locations in Upper Austria.

EXPERT LAB

The aim of the Expert Lab is to strengthen the participants' leadership skills and encourage them to think "outside the box". Due to the advanced management skills they have developed, on completing the Expert Lab employees are optimally suited for designing processes and larger projects, and they also generate new momentum for Miba across divisions. The Lab is aimed primarily at technical experts with the potential for key positions.

LEADERSHIP LAB

The Leadership Lab prepares executives or experts from different departments for tasks in top management. Accordingly, the focus is on improving their leadership skills and strategic thinking. Employees who have completed the Leadership Lab are able and want to develop into managers who can advance Miba strategically. They enable innovations and foster the potential of the company's development. MLA participants who have completed the Expert Lab or Leadership Lab also have the opportunity of completing their education with an MBA at LIMAK.

Global Graduate Program: MIBA'S INTERNATIONAL TRAINEESHIP

Since 2015, with the Global Graduate Program (GGP) we have offered an international trainee program for graduate students from all countries. In intensive training and project work in different Miba countries, our "Globalites" spend 18 months getting to know Miba and its work in detail.

MLA program continued in 2020 too:
LEARNING IN TIMES OF THE CORONAVIRUS PANDEMIC

In September 2020, the Miba Leadership Academy (MLA) resumed its activities after an interruption during the first global lockdown. In compliance with all the coronavirus protection measures, we started with three intakes for the Business Lab and caught up on module 2 of our Leadership Lab. While numerous companies are cancelling their training activities, Miba continues to rely on physical meetings and personal contacts. But in the MLA we are also taking the digital route. The latest Leadership Lab was therefore carried out for the first time as a hybrid, in other words the week was broadcast live for participants from Brazil, the USA and China. In addition, we completely converted the Leading Change module to an online version.

LEARNING COMMUNITIES

Another trend Miba is using is online learning communities. Thus since the first lockdown, many employees have been using MS Teams to network in self-organized groups.
In the seminars, Miba has always relied on a mix of external trainers and internal experts. The most important principle here is to provide plenty of space for mutual learning from one another, in order to guarantee a successful transfer of practical experience. We are happy to support our employees in acquiring expertise not only for specialist topics, but also for personal development, and for dealing with difficult situations and stress. Language training continues to be particularly popular.

MLA module in the USA
(before the coronavirus pandemic)

MLA Corona

For us, training means actively accompanying the rapid change in society, the economy and technology,

both through the acquisition of new specialist skills and in the area of interpersonal skills.

Karin Reiter, Head of Human Capital Development, Miba AG

Career opportunities in times of the coronavirus crisis:
APPRENTICES ARE OUR SPECIALISTS OF TOMORROW

Apprenticeships have always been a high priority at Miba. We offer our apprentice training both in Austria, and in a form adapted to the regional needs in other countries. We train our apprentices primarily as process, metal, electrical, and surface technicians, mechatronics engineers and IT specialists. We prepare young people for the world of work – and therefore we integrate digital learning and simulation programs or robots into the teaching. But training in Miba goes far beyond the workbench: in addition to sound specialist training, we also offer our apprentices language courses, internships abroad, personal development courses and outdoor training. Our apprentices can also combine their apprenticeship with acquiring a general qualification for university entrance (Matura). In Austria, we have entered into close cooperation with KTLA, the Kremstaler Technische Lehrakademie. In Slovakia, Miba Steeltec has launched the "Young Star" project, in which our apprentices can also combine their training with a high school diploma. In the year of coronavirus, 2020, Miba's focus on training its apprentices continued unchanged. So in the autumn, for example, 25 boys and girls started their apprenticeship training at the Miba sites in Upper Austria alone.

New training concept for apprentices and specialists:
SKILLED WORKER TRAINING 2.0 LAUNCHED

Especially in times of rapid technological change, it is important for Miba to continuously develop the training and development programs for its skilled workers. This applies to apprentices, as well as to production workers and employees who have been with the company for a long time. To achieve this goal, Miba has redesigned the training and further education of its specialists for the Miba locations in Upper Austria. One major focus is on consolidating the apprenticeship training in Upper Austria. There will be a joint training program and training team across locations. The team will also take care of the ongoing development of the training offered. In addition to apprenticeship training, the team develops and organizes customized offerings for specialists at Miba locations – such as modular training for production staff, an upskilling apprenticeship for production workers, partial qualification measures or special offerings such as the Dual Academy or various cooperation models.

UPSKILLING APPRENTICESHIP PROGRAM

Since 2015, for production employees in Austria who want to take an apprenticeship to develop into skilled workers, Miba has been offering an apprenticeship to become a metal-machining worker by way of second chance education. The participants complete their training alongside their regular job.

RESPONSIBILITY FOR OUR EMPLOYEES

As a familiy-owned company with strong values, it is only natural for us to assume responsibility. This has always been important to us in our more than 90-year history. And it is more important than ever in times of the coronavirus pandemic.

2020, the year of the coronavirus crisis, posed major challenges to our society and economy worldwide – and thus to our employees too. In the difficult months since the pandemic began, we have supported them with a number of measures, ranging from health protection and childcare assistance during school closures, through to voluntary financial benefits to cushion income losses due to short-time work, for example. We have done all this in addition to the many activities with which we supported our employees even before the pandemic: childcare offerings, health and fitness programs, and initiatives to continuously improve occupational safety.

Ongoing communication of the coronavirus protective measures on posters and on the intranet.

120

fitness videos

are available to our employees for online training. This is our way of bridging the gap caused by closures of sports facilities and fitness centers.

BGF SEAL OF QUALITY FOR THE MIMI HEALTH PROGRAM

Offers now also virtual

For several years now, we have been offering the health program "MIMI – Miba for employees – Employees for Miba" for the Upper Austrian locations. It was again awarded the BGF Seal of Quality for the years 2021 to 2023. Unfortunately, due to the current situation, many sporting events and training sessions could not take place in the usual way last year. So Miba is offering its Austrian locations the "Online Vital Coach" – a digital sports program with regular live fitness training sessions and extensive training on offer. More than 120 videos for different fitness levels are available online for those interested. Since November, we have also been offering occupational psychological support at the Laakirchen site.

HEALTHY PEOPLE – HEALTHY COMPANY:

Our focus in the coronavirus pandemic

In the coronavirus pandemic, it has not only been important for us to safeguard the company financially through a series of measures. Above all we have also been able to protect the health of our employees well by means of comprehensive measures. Right at the beginning of the pandemic in early 2020, we set up a "Corona Crisis and Prevention Team" (CCPT), which develops Group-wide measures to effectively protect Miba employees against infections. The Miba locations supplement these measures by rules adapted to the respective local requirements. Comprehensive information and communication, and regular audits of compliance with the measures, are also part of Miba's coronavirus prevention measures. To accompany this, we have also offered rapid coronavirus tests for our employees at Miba locations.

Coronavirus tests at Miba Steeltec

GLOBAL HEALTH ACTIVITIES

Outside Austria too, we have traditionally been committed to the health and fitness of our teams. Some examples of this: Miba Sinter Slovakia, the world's largest Miba production site, offers physiotherapy for all its employees as preventive healthcare. There are also "Miba active vouchers" for sports activities such as swimming, squash or CrossFit. While these activities are currently being put on hold due to the pandemic, they will resume as soon as the situation improves again. At our production site in Suzhou, China, helmets were distributed free of charge to the employees so that nothing stands in the way of a safe commute to work by motor scooter. And in the USA, we started a "Biggest Loser Contest" to lose weight together. We also take responsibility for our employees at various Miba locations worldwide with flu vaccinations and health education.

ASSISTANCE WITH CHILDCARE IS MORE IMPORTANT THAN EVER DURING THE PANDEMIC

CHILDCARE DURING SCHOOL OR CLASS CLOSURES DUE TO CORONAVIRUS

The coronavirus pandemic poses enormous challenges for the parents of school-age children – because time and time again it happens that schools or individual classes are no longer taught on-site. Many parents then find it difficult to organize their childcare. In order to optimally support our employees in this situation, in Upper Austria we have set up day-care for 6- to 15-year-old pupils. Since then, all the children of the approximately 2,500 Miba employees at the Upper Austrian locations have been able to use it.

The program was organized in collaboration with Otelo, the Open Technology Lab. The children are cared for in the Otelo premises in Vorchdorf. In order to protect caregivers and children in the best possible way, we have developed a coronavirus protection concept for the program.

MIBA CRECHE

A better balance between family life and work facilitates one thing above all: equal career opportunities for women and men. So for somewhat more than seven years, Miba has offered in-house care in Laakirchen for children aged from one to three. With the Miba creche, we make it easier in particular for women to come back after maternity leave. We operate the facility together with the Oberösterreichisches Hilfswerk. It can accommodate up to 24 children between one and three years of age.

24

creche spaces
are offered to our employees in Laakirchen

3-WEEK VACATION PROGRAM

Last year, for the sixth time, Miba offered a varied vacation program for the school-age children of employees. In this way we want to support working parents who are dependent on good childcare, especially during the long summer vacation period. In well-established cooperation with Otelo, the Open Technology Lab, and in compliance with the protective measures, in the coronavirus summer 2020 too children in four age groups from four to 14 were introduced to a fun way of using technology. And there was no shortage of fun: for example, the children made films, created newspapers, enjoyed arts and crafts, splashed around in water, and went on trips to Gmunden. 65 children took part in the 2020 vacation program – and were thrilled by it.

65

children
took part in the summer vacation program at the Miba Forum in 2020

FINANCIAL SUPPORT

FOR EMPLOYEES DURING THE CORONAVIRUS CRISIS

MITTERBAUER EMERGENCY AID FUND COVID-19

The coronavirus crisis has also posed major financial challenges to many people. Therefore quickly after the outbreak of the pandemic, the Miba owner family decided to set up a Mitterbauer Emergency Aid Fund Covid-19. The fund is endowed with EUR 500,000 – for employees who find themselves in emergency situations that threaten their livelihood as a result of financial losses, for example due to redundancies caused by Covid-19, temporary plant closures or reduced working hours. The support is paid out quickly, discretely and unbureaucratically, and does not have to be repaid. It can be accessed by all of Miba's more than 7,500 employees worldwide.

500,000

euros
is the amount of money the Mitterbauer Emergency Aid Fund Covid-19 is endowed with

VOLUNTARY TOP-UP PAYMENT FOR EMPLOYEES IN SHORT-TIME WORK OVER LONGER PERIODS OF TIME

Some of the countries in which Miba has production sites have used short-time work as a means of coping with the coronavirus crisis. As a company, we have supported employees who have had reduced working hours for long periods of time with voluntary top-up payments in addition to their reduced income. We wanted to make their financial situation easier during this time – but to also say thank you for their commitment and for their willingness to make an important contribution to coping with the crisis.

SOCIAL RESPONSIBILITY

To us, business success is a mandate and incentive to give something back to society. For this reason, we support both educational initiatives and social and cultural programs.

SPONSORING EDUCATION IS AN INVESTMENT IN THE FUTURE

For young people, a good education is the foundation for a successful future. Therefore we support educational opportunities that provide additional encouragement and support to children and young people.

Teach for Austria promotes equality of opportunity in the education system. As a Gold Partner, we are one of the main supporters of this important initiative

TEACH FOR AUSTRIA
FOR GREATER EQUALITY OF OPPORTUNITY

Miba supports the "Teach for Austria" education initiative, which promotes equal opportunity in the education system through its focus on schools in disadvantaged areas. At Teach for Austria, university graduates become temporary teachers. In the 2018/19 school year this initiative was launched in Upper Austria too. As the first Gold Partner, Miba has been involved from day one, and helped to introduce the initiative in our federal state.

CAP – MECHATRONICS APPRENTICESHIP IN PARALLEL TO UPPER SECONDARY SCHOOL

"CAP, the mechatronics apprenticeship in parallel to the upper secondary school cycle," is an initiative supported by Miba, which enables school students to complete a fully-fledged mechatronics apprenticeship in parallel to the upper cycle of their secondary schooling. The training takes place every 14 days – on Friday afternoon and Saturday – at the WIFI in Linz and ends with an apprenticeship certificate shortly after the secondary school leaving exam. In addition, a holiday work placement and management courses are mandatory.

TALENT PROGRAM OF THE VIENNA UNIVERSITY OF TECHNOLOGY
AND THE VIENNA UNIVERSITY OF TECHNOLOGY e-RACING TEAM

The Vienna University of Technology e-Racing team presents its race car at the Miba Forum in Laakirchen

Miba is a partner of the Vienna University of Technology talent program. This provides students with a platform for getting to know successful companies, contacting them and in this way developing a professional network. Students receive support for this from the TU Career Center. In addition, we also support the Vienna University of Technology e-Racing team. Students design and build purely electrically-powered race cars, and compete against other student teams at international competitions. This is a perfect example of how university knowledge can be used in practice – with plenty of fun and excitement.

ALPHA. MEINE CHANCE. HELP WITH READING DISORDERS

Invest in education, reap a better society: This is the motto of "ALPHA. MEINE CHANCE.", a project run by the Upper Austrian Red Cross. Volunteer reading coaches accompany and support children with reading disorders as a supplement to their school education. We support the initiative for the districts of Gmunden and Vöcklabruck.

OTELO FUTURESPACE – UNDERSTANDING DIGITAL INNOVATION

In cooperation with Otelo, the Open Technology Lab, we created the educational format "Otelo futurespace – the digital playground". The futurespace provides a digitalization playground with various labs and tasks.

KINDERUNI ALMTAL

The Kinderuni Almtal offers exciting workshops and excursions for 5- to 18-year-olds during the summer vacation. They acquire new insights, experience science, technology, art and culture up close, and can discuss their ideas with experts. We have been supporting the project since 2020.

START – SCHOLARSHIPS FOR COMMITTED STUDENTS WITH A MIGRATION BACKGROUND

Promoting the integration of committed young people with a migration, and above all a refugee, background is important to us at Miba. This is why we support the START initiative, which awards scholarships primarily for language courses and further education programs.

DELTA AKADEMIE – HIGH-QUALITY SUPPLEMENTARY TRAINING FOR STUDENTS

The Delta Akademie at the Leoben University for Mining, Metallurgy, and Materials is an additional program that selected students of this university can pursue in parallel to their studies. The central idea behind the Delta Akademie is to support the career prospects of 20 to 25 selected students per year, and to determine the potential of responsible young managers for companies.

LISA – INTERNATIONAL SCHOOL IN UPPER AUSTRIA

LISA (Linz International School Auhof) is Upper Austria's only international school which offers an International Baccalaureate diploma together with the Austrian Matura (school leaving examination). The language of instruction is English.

SOCIAL ENGAGEMENT IN ALL MIBA'S REGIONS WORLDWIDE

We support disadvantaged people and sponsor selected projects worldwide

CHRISTMAS CHARITY – HELP FOR LOCAL RECREATION AREA

Instead of giving Christmas gifts to its customers, every year Miba supports a project in a region where we have a production site. In 2020, we became involved in Dolný Kubín in Slovakia. Miba Sinter Slovakia, which is located there, is our company's largest production site worldwide. In Dolný Kubín, a powerful storm severely damaged the avenue along the Orava River. With our donation, the city administration can plant new trees and repair damage. In this way, we are helping to make this important local recreation area attractive to the population once again. Engagement like this is also part of our corporate mission "Technologies for a cleaner planet". At Miba we want to make a contribution to a cleaner planet and a world that is even more livable.

MIBA CHRISTMAS CHARITIES:			
2020	Slovakia	Dolný Kubín	Reforestation of the local recreation area on the Orava River
2019	Austria	Red Cross	Support for the social markets in Gmunden and Vöcklamarkt
2018	USA	Macomb County Warming Center	Places to sleep and food for the homeless in winter
2017	Brazil	Casa da Criança Jesus de Nazaré	Support for a creche in the disadvantaged district of Indaiatuba
2016	Slovakia	Dobrý Anjel	Support for families in which one or more persons are seriously ill
2015	Austria	Laakirchen Refugee Initiative	Language courses, meeting cafes and much more
2014	China	Suzhou Social Welfare Home	Learning materials for children
2013	Austria	Caritas Learning Centers	Support for children with learning difficulties
2012	USA	Morgan High School McConnelsville	Financial contribution toward ACT college entrance exam
2011	India	Support in constructing an orphanage	
2010	Slovakia	Children of Slovakia Foundation	Afternoon childcare/school and leisure activities
2009	Romania	Georg Sporschill	Concordia social projects/construction of a training center
2008	Austria	Altmünster Children's Village	Construction of a sports and leisure park

elijah
PATER GEORG SPORSCHILL SJ | SOZIALE WERKE
RUTH ZENKERT | INIȚIATIVA SOCIALĂ

ELIJAH – SUPPORT FOR ROMA FAMILIES IN ROMANIA

For several years Miba has been supporting the projects of Father Georg Sporschill SJ, including the ELIJAH Association, which helps families and children of Roma residents in Romania to cope with their difficult situation and build a future.

KA Ki HE
Trinkwasser für Kambodscha

KAKIHE – RUNNING FOR WATER WELLS IN CAMBODIA

Miba is a partner of the KAKIHE Association founded by two employees. Year after year, it organizes the Five Bridges Run along the Traun. The entry fees for this run go toward providing Cambodians with better access to drinking water.

ART AND CULTURE ENRICH OUR LIVES

A wide and varied range of art and culture is important to us, which is why we are involved in Upper Austria and around the world.

Art and culture are simply part of a fulfilling life.
F. Peter Mitterbauer, CEO Miba AG

SALZKAMMERGUT Festwochen GMUNDEN

SALZKAMMERGUT FESTWOCHEN GMUNDEN

Miba was founded in the Salzkammergut more than 90 years ago. Today we employ around 2,500 people here. Especially as a family business with such strong regional roots, we consider it important to support and promote special cultural initiatives such as these festival weeks. As part of the partnership, free tickets are made available to our employees.

WIENER KONZERTHAUS

VIENNA KONZERTHAUS

In addition to its range of classical offerings, the Vienna Konzerthaus also serves as a venue for contemporary music and a stage for international jazz. So there is something for everyone.

THE CLEVELAND ORCHESTRA

CLEVELAND ORCHESTRA

The Cleveland Orchestra is one of the five largest symphony orchestras in the United States. Miba is represented by seven production sites in the USA, the largest of which is in Ohio – the best possible reason for us to actively support the orchestra.

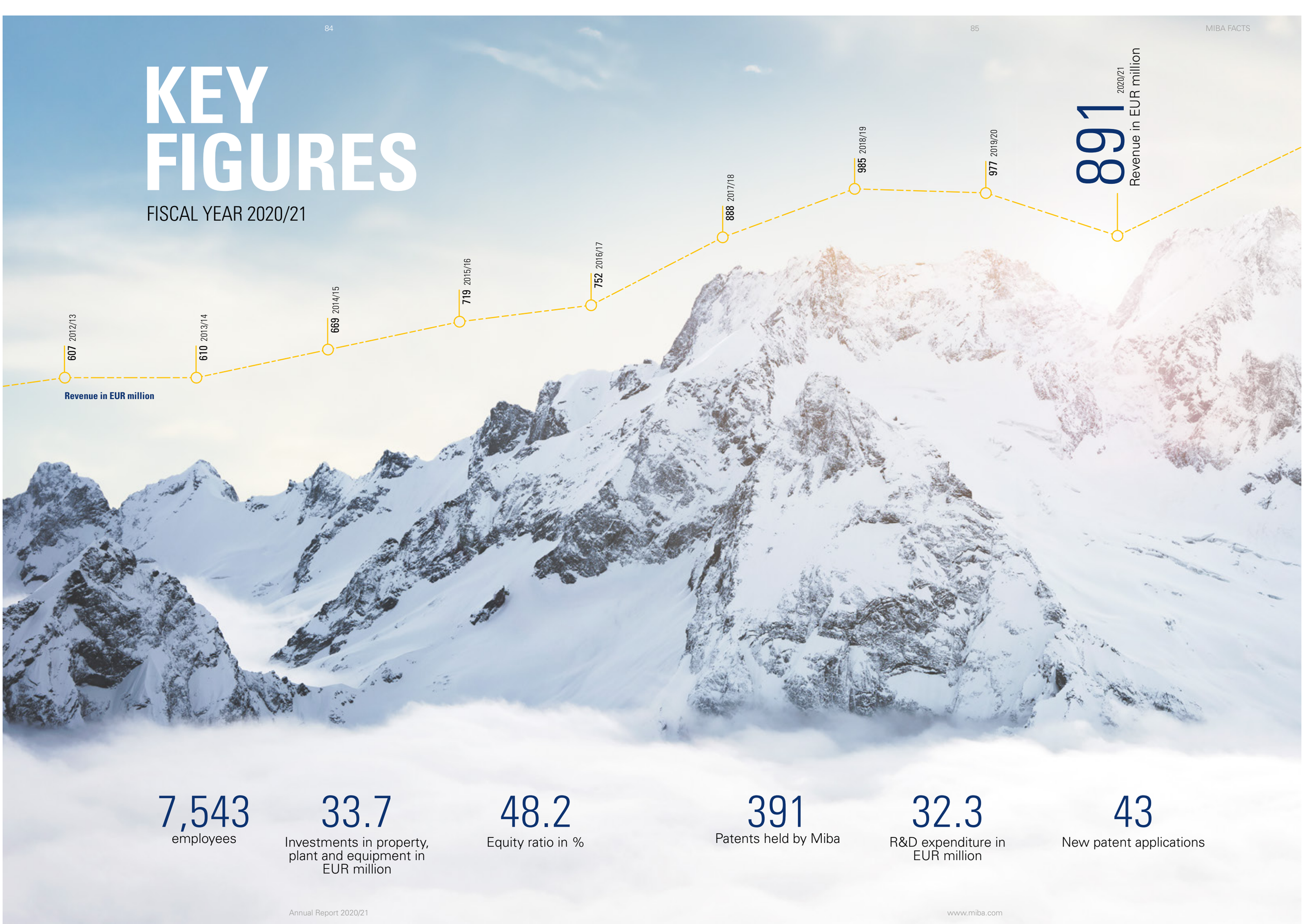
FINANCIAL STRENGTH

05 **MIBA FACTS**

Stability, independence, long-term and profitable growth. Miba has stood for these ever since it was founded more than 90 years ago. It was these values which enabled us to cope with the corona-virus crisis so well. And they are why we have the strength to shape the future of our company.

KEY FIGURES

FISCAL YEAR 2020/21



7,543
employees

33.7
Investments in property, plant and equipment in EUR million

48.2
Equity ratio in %

391
Patents held by Miba

32.3
R&D expenditure in EUR million

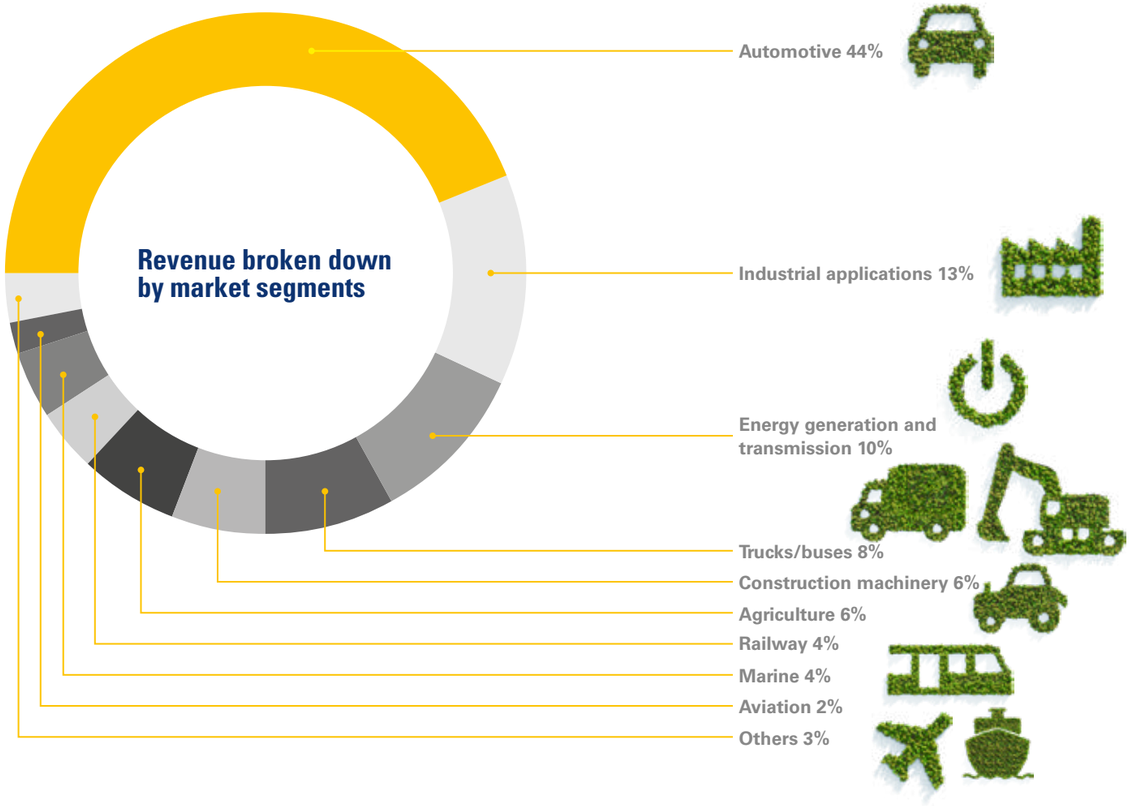
43
New patent applications

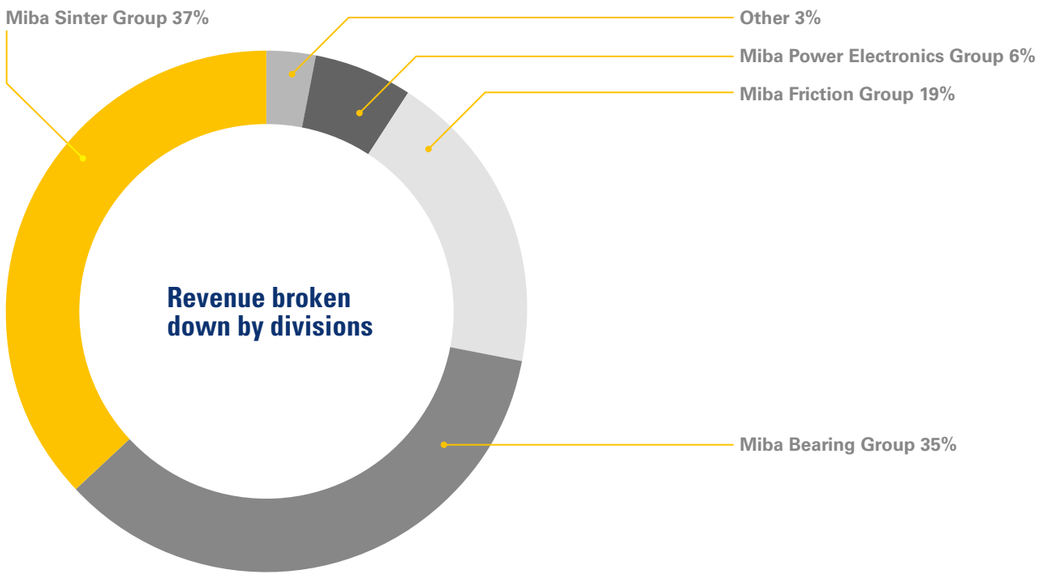
DEVELOPMENT OF MIBA'S BUSINESS

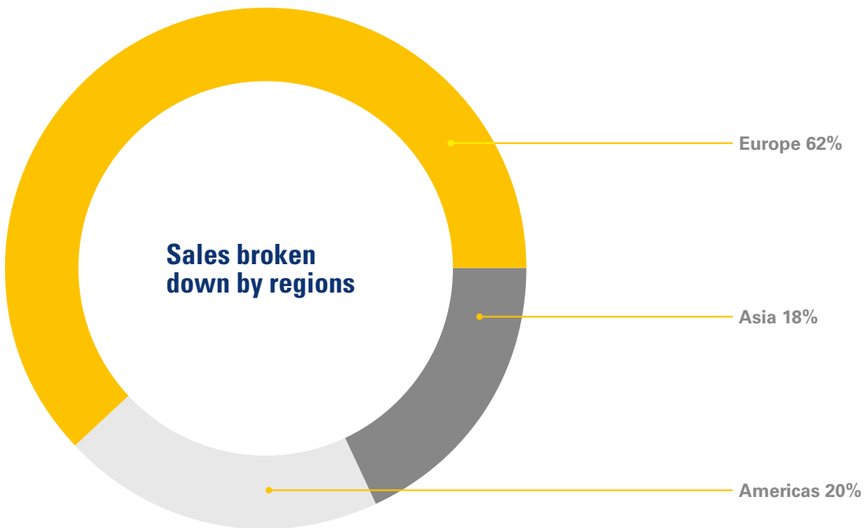
DEVELOPMENT OF THE MIBA GROUP

In the pandemic year 2020/21, Miba impressively proved the economic resilience of its business model and Miba's portfolio. In fiscal year 2020/21, the Miba Group achieved revenue of EUR 890.8 million. Although this is an 8.8 percent decline compared to the previous year, in view of the coronavirus-related market decline, the result is well above expectations. The equity ratio fell slightly to 48.1 percent, but still remains at a very high level. Even during the crisis, Miba continued to invest in the future of the company: almost EUR 34 million in property, plant and equipment and almost EUR 1 million in training and development.

In the past fiscal year Miba invested EUR 32.3 million in research and development, which corresponds to an R&D quota of 3.6 percent.







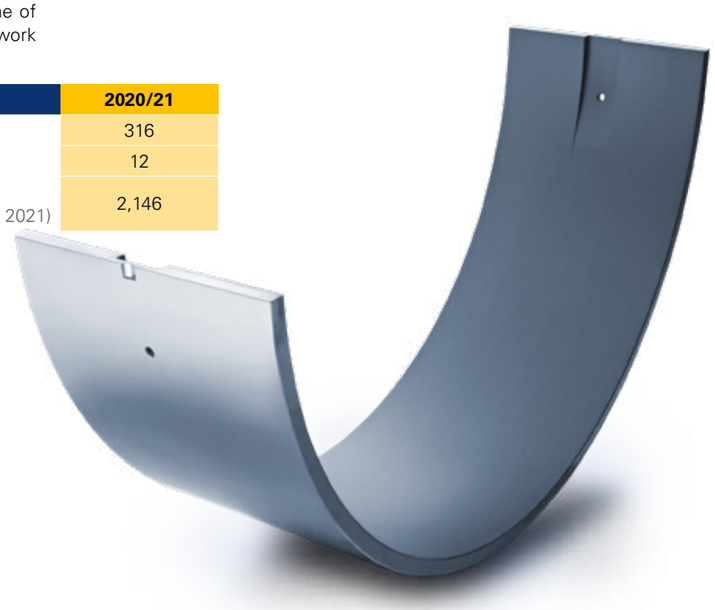
DEVELOPMENT OF THE MAIN BUSINESS AREAS

The **MIBA SINTER GROUP** develops and produces high-precision and high-strength powder metallurgical components, which are mainly used in engines, transmissions and electric steering systems. Spring 2020 was characterized by the difficult situation in the automotive industry due to the coronavirus crisis. During the summer and autumn, however, business noticeably picked up again. As a result, we were able to make up for the lost revenues and achieve a respectable result. Furthermore, the Miba Sinter Group is increasingly succeeding in developing new market segments in addition to the automotive business.

MIBA SINTER GROUP (2020/21)	2020/21
Sales revenue (EUR million)	335
Production sites (worldwide)	6
Employees (as at the reporting date January 31, 2021)	2,731

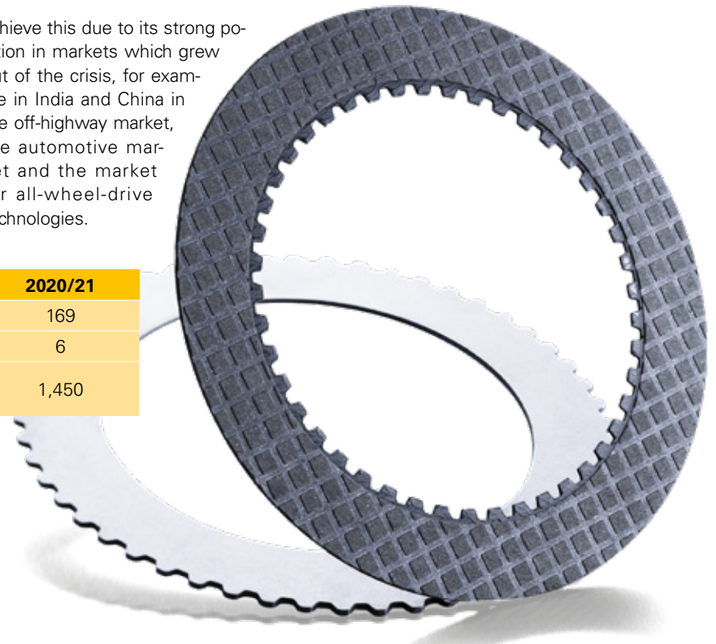
The **MIBA BEARING GROUP** comprises the business for engine and industrial bearings. While in most markets customer demand declined in the past fiscal year due to the coronavirus crisis, the order situation in China was very good. Business in bearing technologies for wind power also developed very well. One of the most important focal points of work was the further roll-out of the Miba Bearing Group's global footprint, including through the integration in greater depth of the production sites which joined the Group in 2019 through the joint venture with Zollern.

MIBA BEARING GROUP (2020/21)	2020/21
Sales revenue (EUR million)	316
Production sites (worldwide)	12
Employees (as at the reporting date January 31, 2021)	2,146



For the **MIBA FRICTION GROUP**, our friction lining specialist, the year of the coronavirus crisis was initially characterized by strong sales declines in the months of April to June. From the summer onwards, market demand recovered strongly, and by the end of the year even grew to a higher level than before the pandemic. The Miba Friction Group was able to achieve this due to its strong position in markets which grew out of the crisis, for example in India and China in the off-highway market, the automotive market and the market for all-wheel-drive technologies.

MIBA FRICTION GROUP (2020/21)	2020/21
Sales revenue (EUR million)	169
Production sites (worldwide)	6
Employees (as at the reporting date January 31, 2021)	1,450



The **MIBA POWER ELECTRONICS GROUP** develops and produces power resistors and cooling technologies. Even in the year of the coronavirus crisis, 2020, the group's business was characterized by growth. The reasons for this were both the stable development in the industrial goods market, and the continued strong growth with technologies for e-mobility. The Group is continuing to invest in this area of business, and by the end of 2021 will complete the construction of new production facilities in Styria for power resistors in electric vehicles. In addition, there was great demand in China and the USA for our solutions for the power grid infrastructure.

MIBA POWER ELECTRONICS GROUP (2020/21)	2020/21
Sales revenue (EUR million)	55
Production sites (worldwide)	5
Employees (as at the reporting date January 31, 2021)	507

MANAGEMENT BOARD*

MARTIN LIEBL
Member of the Management Board of Miba AG

also responsible for*: Miba Friction Group, New Business Development Decarbonization / eMobility Team, Miba Strategic Unit Automation Systems and Quality

MARKUS HOFER
CFO of Miba AG

also responsible for*: Corporate Finance, Controlling, Digitalization, IT, Legal and Compliance and the Lean 2020+ Initiative

F. PETER MITTERBAUER
CEO of Miba AG

also responsible for*: Miba Sinter Group, Miba Bearing Group, Miba Power Electronics Group, Communications, Human Capital, Strategy, Innovation and Technology, Digital Business Development and Internal Audit

SUPERVISORY BOARD

DKFM. DR. WOLFGANG C. BERNDT
Chairman of the Supervisory Board
Independent, Member of the Supervisory Board of Miba AG since June 27, 2008

DIPL. BW. ALFRED HEINZEL
Vice Chairman
Independent, Member of the Supervisory Board of Miba AG since June 4, 2003

PROF. KR ING. SIEGFRIED WOLF
Independent, Member of the Supervisory Board of Miba AG since June 25, 2015

DR. THERESE NISS
Independent, Member of the Supervisory Board of Miba AG since July 17, 2018

JOHANN FORSTNER
Delegated Member
Member of the Supervisory Board of Miba AG since 2009

ELFRIEDE SCHOBER
Delegated Member
Member of the Supervisory Board of Miba AG since 2016, Member of the Financial Committee

DI DR. HC. MULT. PETER MITTERBAUER
Honorary Chairman

***Management Board responsibilities from July 1, 2021**

During the business year 2020/21, the following responsibilities applied:

F. Peter Mitterbauer: CEO of Miba AG, also responsible for the Miba Power Electronics Group, Strategic Unit eMobility, Communications, Human Capital, Strategy, Innovation & Technology, Digital Business Development and Internal Audit

Wolfgang Litzlbauer: Deputy CEO of Miba AG, also responsible for the Miba Bearing Group, the Miba Strategic Unit Coating and Purchasing – until June 30, 2021

Markus Hofer: CFO of Miba AG, also responsible for Corporate Finance, Controlling, IT, Legal and Compliance, and the Lean 2020+ Initiative

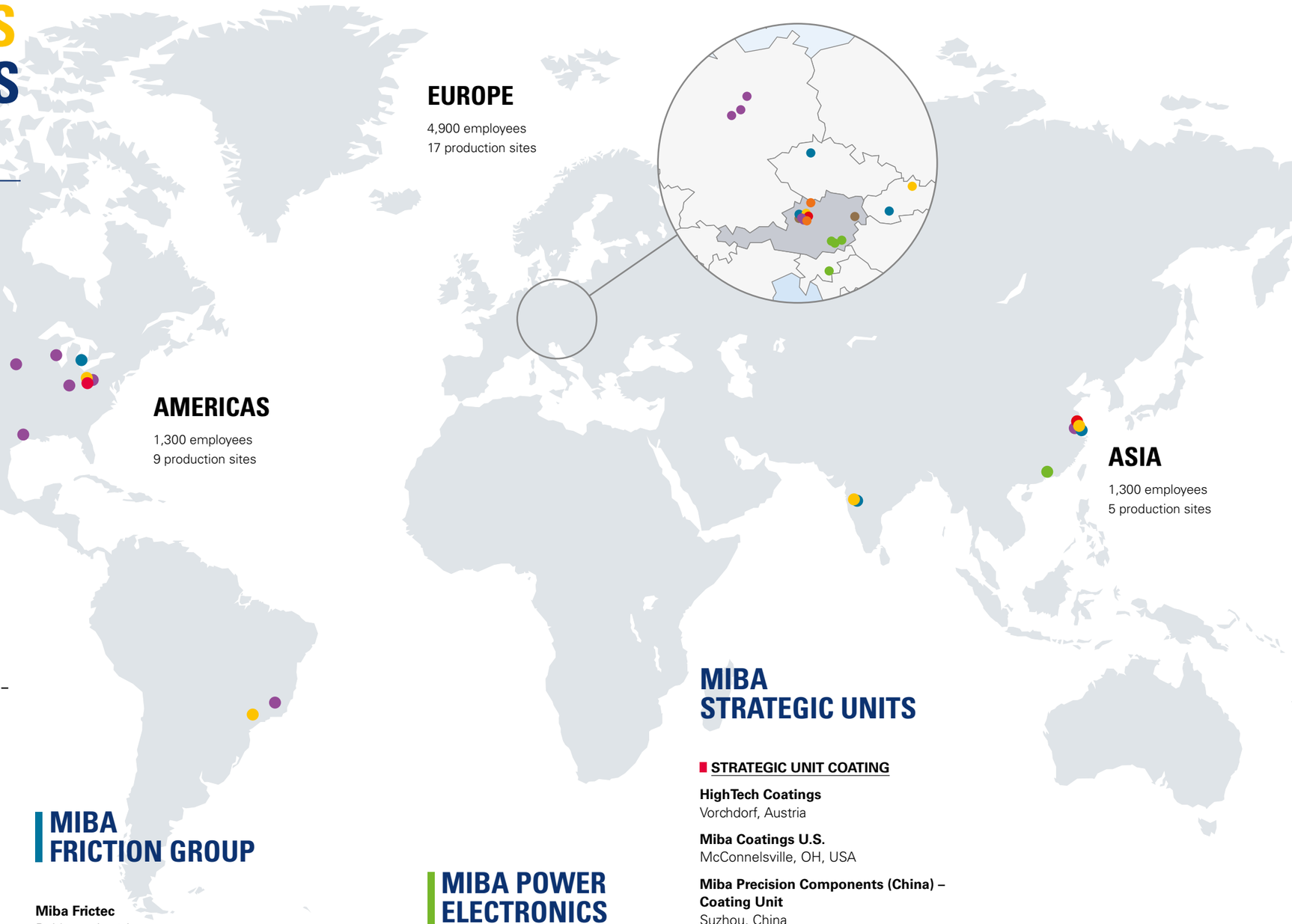
Martin Liebl: Member of the Board of Management of Miba AG, also responsible for the Miba Friction Group

Harald Neubert: Member of the Board of Management of Miba AG, also responsible for the Miba Sinter Group, the Strategic Unit Miba Automation Systems and Quality – in retirement since February 1, 2021

31 PRODUCTION SITES AND 7,500 EMPLOYEES WORLDWIDE

WE DEVELOP AND PRODUCE IN ALL THE IMPORTANT MARKETS OF OUR CUSTOMERS

As of: January 31, 2021, employee figures rounded



EUROPE

4,900 employees
17 production sites

AMERICAS

1,300 employees
9 production sites

ASIA

1,300 employees
5 production sites

MIBA BEARING GROUP*

ENGINE BEARING BRANCH

Miba Gleitlager Austria
Laakirchen, Austria

Miba Bearings US
McConnelsville, OH, USA

Miba Precision Components (China) – Bearing Branch
Suzhou, China

Miba Bearings Materials
Aurachkirchen, Austria

ABM Advanced Bearing Materials**
Greensburg, IN, USA

BHW Plain Bearings
Braunschweig, Germany

INDUSTRIAL BEARING BRANCH

Miba Industrial Bearings Germany
Göttingen, Germany

Miba Industrial Bearings U.S.
Grafton, WI, USA

Miba Industrial Bearings U.S.
Columbus, NE, USA

Miba Industrial Bearings U.S. (Houston)
Deer Park, TX, USA

Miba Industrial Bearings Germany (Osterode)
Osterode, Germany

Miba Industrial Bearings Brasil
Cataguases, Brazil

MIBA SINTER GROUP

Miba Sinter Austria
Vorchdorf, Austria

Miba Sinter Slovakia
Dolný Kubín, Slovakia

Miba Sinter USA
McConnelsville, OH, USA

Miba Precision Components (China) – Sinter Branch
Suzhou, China

Miba Sinter Brasil
Indaiatuba, Brazil

Sintercom India**
Pune, India

MIBA FRICTION GROUP

Miba Frictec
Roitham, Austria

Miba Steeltec
Vráble, Slovakia

Miba HydraMechanica
Sterling Heights, MI, USA

Miba Drivetec India
Pune, India

Miba Precision Components (China) – Friction Branch
Suzhou, China

Fibertec Štětí
Štětí, Czech Republic

MIBA POWER ELECTRONICS GROUP

EBG Electronic Components
Kirchbach, Austria
St. Stefan, Austria

DAU
Ligist, Austria

EBG China**
Qinqxi, China

EDMS
Šentjernej, Slovenia

MIBA STRATEGIC UNITS

STRATEGIC UNIT COATING

HighTech Coatings
Vorchdorf, Austria

Miba Coatings U.S.
McConnelsville, OH, USA

Miba Precision Components (China) – Coating Unit
Suzhou, China

STRATEGIC UNIT MIBA AUTOMATION SYSTEMS

Miba Automation Systems
Aurachkirchen, Austria

SEP Automation**
Hornstein, Austria

STRATEGIC UNIT eMOBILITY

Miba eMobility GmbH
Laakirchen, Austria

Voltlabor**
Bad Leonfelden, Austria

* Miba holds a 74.9 percent stake and has industrial leadership in the joint venture

** Companies in which Miba has shareholdings: Advanced Bearing Materials (75%), Sintercom (26%), EBG Shenzhen (55%), Voltlabor (25.1%) and SEP (49%)

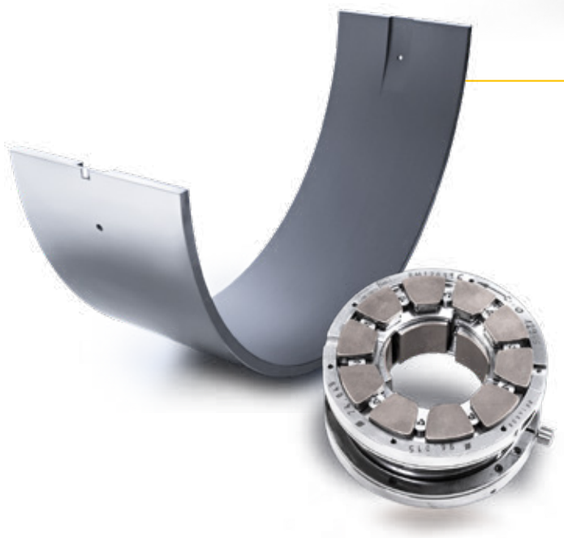
PRODUCT PORTFOLIO

OUR TECHNOLOGIES FOR A CLEANER PLANET

SINTERED COMPONENTS

Miba's sintering technology is characterized by a complex design that integrates several functions in one component – high precision and strength, as well as low weight. Our powder metallurgical components are used in engines, transmissions and the electric steering systems of passenger cars. There they make an important contribution to increasing efficiency and saving fuel. In addition, there are many uses for Miba sintered components in industrial applications, such as household appliances or air-conditioning equipment, recreation equipment (fitness equipment, e-bikes) conveyor technology, medical technology or trucks.

BEARINGS

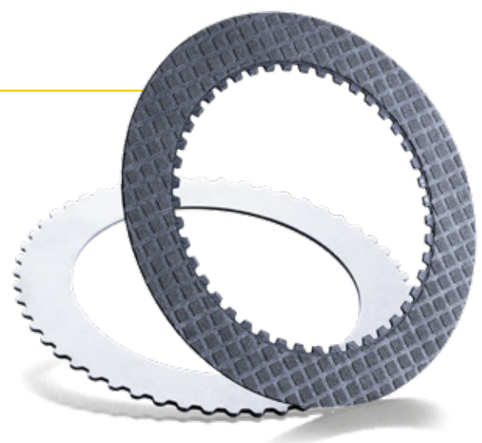


Engine bearings are components in internal combustion engines which play a role in determining the function and service life of the engine. They serve to support crankshafts and camshafts, minimize friction during operation, and protect the engine from damage or failure. Bearings from the Miba Bearing Group increase efficiency by withstanding higher ignition pressure and thus bringing about efficiency gains in the engine. They are used in the diesel and gas engines of ships, heavy-duty vehicles, locomotives and power plants.

Industrial bearings: Miba produces hydrodynamic bearings. These are used in large-scale equipment and are a critical part of the machine in maintaining the radial position and alignment. In compressors, they support the rotating shaft of turbo machines. Hydrodynamic bearings are also used in high-energy pumps, generators and transmissions, where they bear the load of rotating components.

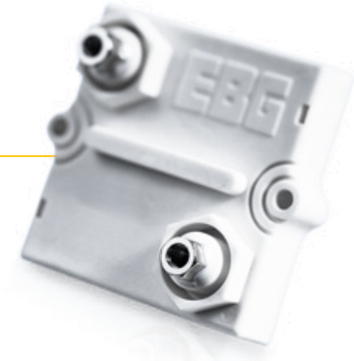
FRICTION LININGS

Friction materials are crucial to the performance of clutches and brakes, where they serve to optimize speed and power. On the one hand components from the Miba Friction Group reduce the weight of transmissions and axles, and on the other hand their size. Miba friction materials are used in tractors, construction machinery, trucks, passenger cars, high-speed trains, motorcycles, aircraft, and also in wind turbines.



POWER ELECTRONICS COMPONENTS

The Miba Power Electronics Group is continuously working on solutions for power electronics which are tailored directly to the respective customer. DAU heat sinks and EBG resistors contribute to the efficient generation, transmission and use of electrical energy. In addition, EBG's high-performance resistors are used in electric vehicles.



COATINGS

Miba develops individual coating solutions for finishing functional surfaces. The core technologies are polymer and anti-friction coatings, electroplated coatings and PVD coatings. Our coatings are distinguished by the maximum functionality and longest service life. They are used in components for engines and transmissions, as well as for industrial applications.

SPECIAL MACHINERY

Special machinery from Miba is used for high-precision and high-speed machining of small to very large components. Miba Automation Systems is a leader in bearing technology, robotics and automation, as well as in both mobile and stationary special machinery. In addition, the wind power industry is one of the company's most important markets. The extensive product portfolio also includes prototype design and development, as well as the construction of production facilities for electric motor stators.

SOLUTIONS FOR e-MOBILITY

We develop and produce a multitude of solutions for e-mobility. In this way we aim to proactively help shape the market. Resistors from the Miba Group can be found in many series-produced electric vehicles. In addition, Miba builds manufacturing plants for electric motor stators in the automotive industry, and also offers the complete production of stators. We also produce a range of solutions for hybrid vehicles, such as sintered components and friction linings. Furthermore, Miba is actively working on many development projects for electric vehicles – including a flexible, digital, and thus intelligent cooling solution for batteries, power fuse systems for high-voltage batteries, an axial flux motor as a novel electric motor concept, coating solutions for fuel cells, or cooling solutions for power electronics in electric cars.

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