



**INTERNATIONAL**

**2020**

**WITH INNOVATIVE TECHNOLOGIES  
IN MECHANICAL ENGINEERING AND ELECTROMOBILITY,  
GROB RESOLUTELY CONTINUES ON ITS PATH EVEN  
IN TIMES OF CRISIS**

# DEAR EMPLOYEES, DEAR BUSINESS PARTNERS, DEAR FRIENDS OF THE GROB COMPANY,

A very turbulent year is coming to an end. When we reported a year ago on the transformation of the automotive industry within a weakening global economy, it was characterized by trade conflicts, political imponderables and global trouble spots. An immense challenge for all of us. At the beginning of this year, with the start of the Corona pandemic and the global shutdown, we were faced with completely new, additional demands. The associated challenges became a mammoth task, as the health of our workforce was also affected in addition to the economic and technological challenges. An immediately established Corona crisis management team took special care of the health protection measures within the GROB Group. This team has proven itself very well to date and with the support of this team, we have been able to keep infection rates in the company at a very low level. Nevertheless, we too have not been spared from cases of infection, which usually originated outside our company. We would like to



Florian Grob and Christian Grob

take this opportunity to thank our entire company medical team with all its supporters and helpers, who have managed the situation in an outstanding manner and with full commitment. Looking back, we made it through the year well in terms of the pandemic. However, we were aware from the outset that such a crisis would also leave its mark on GROB and led to a drop in

sales and profitability. As a consequence, we have increased our investments in new technologies in order to offer our company a long-term perspective. These include further developments in electromobility, battery module assembly, and new developments in the field of battery cells, but also in machining technology. All in all, we used the time intensively to further advance and secure the transfor-

mation process in the company through innovations and new technologies. And yet there is still a huge mountain of tasks and challenges ahead of us that need to be overcome. The new year will not be easy. Characterized by uncertainty due to the Corona virus and de-globalization, the fight for survival will become increasingly fierce. For this reason alone, we are strongly called upon to take further measures to secure our company in such difficult times. And yet: A trademark of GROB as a family business was and is its sustainable, long-term company philosophy for the best possible protection of jobs and thus of its employees. Thus we remain confident and optimistic that we will survive this difficult time together with you.

We thank you for your dedication and commitment to the well-being of our company and wish you and your family a Merry Christmas, all the best and, above all, good health for the coming year 2021.

**Your Grob Family**

## DEAR EMPLOYEES,

The COVID-19 pandemic has confronted our company with unprecedented challenges and is currently leading to one of the biggest economic crises in Germany's post-war history. And yet climate protection is one of the most pressing challenges of our time, allowing the transformation of the automotive industry towards new drive technologies to proceed unchecked and with determination. Car manufacturers in Germany alone will invest around 50 billion euros in machinery and equipment for the new electric drives and battery storage technologies by 2024 and will double their range of e-models from the current 70 to 150 by the end of 2023. In China in particular, German car manufacturers are investing in these technologies in a second expansion phase. The same applies to the Chinese joint venture companies.

For the GROB Group, this change is an ongoing challenge. What we have is the certainty that GROB has proven over decades that it can break new ground. We know which changes we are able to master and therefore we are vehemently pushing the developments into new

machines and plants in the field of new technologies. We are traditionally the technology market leader in the machining industry and have already made an excellent name for ourselves in the field of electromobility. Now we are taking the next important step with our fact-based entry into battery cell technology, in line with further developments in the automotive industry. In machining technologies, against the backdrop of the sharp drop in demand for machines for machining cylinder heads and crankcases, we intensively

pushed ahead with new developments in the F-series of G-modules. A range designed and conceived above all to handle frame and structural components, but also battery cases. In the field of universal machines, the completely new series of 4-axis machines will provide us with further, additional potential. They will be launched in the first quarter of 2021. With the G150, our 5-axis machining series has also been rounded at the lower end. To survive in a crisis like this, however, it is not enough to serve the market with new

technologies and products. Rather, the question arises as to the premises according to which a company must be managed in order to lead it back on the path to growth and normality. We have also put numerous projects and processes to the test. Now the processes in our operations and the dynamic project management with our customers are characterized by improved working methods with closely timed shop floor meetings and daily and weekly targets, whereby the dynamics of the entire processes have increased enormously. Since we recognized the current changes years ago and reacted very quickly, all these extensive innovations in our products and processes mean that we are very well prepared for future challenges, are in exactly the right position and can continue to shape our path into the future in a positive way.

We would like to thank you all for the good cooperation, your dedication and motivation, and we wish you and your families a blessed Christmas and hope you stay healthy.

**Your Management**



CFO Wolfram Weber, CEO German Wankmiller, CSO Christian Müller (from left to right)

# REVIEW

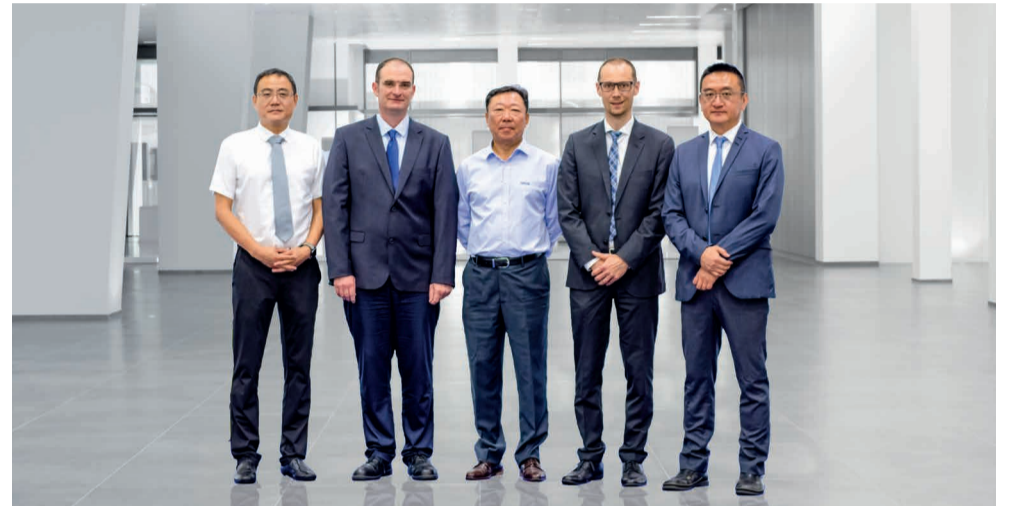
As for all companies, the year 2020 was dominated by the Corona virus for GROB as well. A year characterized by video and telephone conferences, with contact reduced to almost zero and if then at a distance. And yet, the photos show that GROB continues to be a future-oriented company.

This certainly includes the generational change in the management of GROB China, the awards received from our customers or our 56 new trainees who have decided on a professional future with GROB-WERKE. Not least due to the social responsibility of our company towards the region, as well as our standing in the economic-political environment: GROB has again met all challenges in 2020.

# 2020

## GENERATION CHANGE AT THE TOP OF GROB CHINA

Marcus Ostler (2nd from left) is appointed new General Manager of GROB China effective July 1, 2020, taking over the operational tasks of his predecessor Hongzhi Ren (3rd from left), who is moving to the Supervisory Board of GROB Machine Tools (China).



**January** – GROB was honored to receive SAIC-GM's Special Contribution Supplier Award for the second time.



**July** – GROB becomes a pioneering partner of Volkswagen's new Industrial Cloud.



**August** – E-mobility has established itself as an integral part of the working world at GROB-WERKE in 2020.



**September** – Elisabeth Winkelmeier-Becker (3rd from left) and Stephan Stracke (2nd from left) visit GROB-WERKE.



**September** – A sign of hope for better times: New training year started at GROB.



**October** – Ford presents GROB with the Fitness-Indirect World Excellence Award for the first time.



**November** – Restructuring and adapted processes, e.g. in halls 6 & 8, lead to optimized workflows throughout the GROB plant.



## COMPLETE SUCCESS OF THE FIRST DIGITAL IN-HOUSE EXHIBITION

The first GROB Virtual Open House in October 2020 was quite a success with a high customer response. For GROB, this is another milestone in its significantly expanded digital presence.

# UNIVERSAL MACHINING CENTER G150

Our New Universal Machining Center – Small but Powerful



The new G150 universal machining center features maximum precision combined with highly dynamic machining and supreme productivity, even for unmanned operation. Its pallet size of 320 x 320 mm is the perfect entry-level addition to GROB's unique G-series machine concept, opening up new market segments for GROB.

The G150 extends the production range of universal machining centers towards the entry level, completing the G350, G550, and G750 at the bottom of the area of conventional machining. Despite its compact size, the G150 features the same solid, stiff, and yet highly dynamic material pair. Active cooling of heat-generating components and assemblies make the G150 a consistently precise machine. The optimally designed machining

point (TCP) ensures extreme rigidity with optimal accessibility for the tool to the part. The G150's horizontal tunnel design with its long Z-travel path – the longest in

this machine class worldwide – permits the use of maximum tool lengths. Whether the part is short or long, the Z-axis, guided by six roller shoes, ensures

consistent travel and milling behavior in all axis positions. The solid G150 can be used to mill all materials powerfully, supported by GROB's proprietary spindle technology and an enormous selection of different spindle types.

## Wide Range of Applications for the Most Diverse Industries

Due to the constantly increasing competition in the medical industry, the G150 is a convincing option thanks to its accuracy and flexibility.



### MAXIMUM PROCESS RELIABILITY WITH TOP FLEXIBILITY

Whether job shopper or series production: GROB offers a perfect choice of functional components for the G150. The HSK E-40 spindle type with a thermally stable design for up to 42,000 rpm is particularly noteworthy. It is ideally suited for the machining of delicate components made of titanium, stainless steel, and aluminum. Compact precision tables combined with high speed guarantee the highest possible flexibility for our GROB customers.

## OUTLOOK – 4-Axis Machine Series & Liquid Metal Printing

### IT DOES NOT ALWAYS HAVE TO BE 5-AXIS MACHINING

GROB is expanding its G-series product range by adding a new 4-axis series with the machine versions G440, G640, and G840 for universal machining applications where no 5-axis machining

is needed. This series meets all 4-axis horizontal machining requirements for the global market and offers GROB's renowned quality in stability, reliability, and precision as a matter of course. The launch is planned for Germany in spring 2021 and globally in September 2021.

### NOVEL ADDITIVE MANUFACTURING PROCESS

The last few years have seen a continuous increase in the industrial use of metal additive manufacturing processes. GROB is also active in this emerging market, developing Liquid

Metal Printing (LMP), a novel additive manufacturing process. Unlike most established metal AM processes, LMP uses wire as a raw material. This offers significant economic and occupational safety advantages compared to state of the art technology – especially for industrial series production.

# G700F & G720F

## Expanded F-Series Machine Range

The new introduction of the G700F and the two-spindle machining center G720F expands the successful F-series consisting of the G500F, G520F, and G600F up-market in order to meet the requirements primarily of the electromobility sector and automotive industry.

Three years ago, the F-series was launched for the machining of frame structure parts with the G600F. E-mobility put new components with different requirements than frame structure parts on the market, such as subframes or battery trays. The larger, top-of-the-line G700F was added to the G500F to meet the demands for high milling forces and volumes as well as large components. An innovative pallet changer was developed exclusively for the G700F, which can be installed retroactively and flexibly after machine delivery. The G700F size is also available as a G720F two-spindle machining center for highly productive series production. We might develop

an even larger machine if the need arises in the passenger car industry.

The G520F is also getting a facelift. It will be designed to be even more dynamic and feature an option to expand the magazine to three discs to satisfy market demands. It is used primarily for machining frame structure parts, but also for transmission and stator housings as well as battery trays. The components are machined in fewer clamping positions. Machines with pallet changers can carry out complete machining on a single machine.



The F-series is used primarily for machining subframes and battery trays.



# AUTOMATION

## New automation solutions in the GROB portfolio

The PSS-R light and the GROB robot cell (GRC) once again demonstrate the long tradition of automation solutions at GROB. They offer a new demand-oriented and most economical applications for our customers, even with small lot sizes and quantities.

### PSS-R LIGHT: ENTRY LEVEL SOLUTION FOR SIMPLE AUTOMATION

The rotary pallet storage system PSS-R light is lower in function and price than the well-known PSS-R and rounds off the lower end of the GROB automation portfolio. The "large" pallet storage systems known up to now are not always required for the smaller machine variants of the access-series and the G-series, as the ratio of investment volume to value added is not always given. This means the PSS-R light is suitable as an entry-level solution for

simple automation with low complexity for light components up to 240 kg. It is characterized by simple set-up and is ideal for longer running times. A perfect automation solution for the new G150, G350 and G350a. Delivery of the PSS-R light is scheduled for January 2021.

### GROB ROBOT CELL: PALLET AND PART HANDLING IN ONE SYSTEM

The newly developed GROB Robotic Cell (GRC) ideally complements the GROB automation solutions and, in combination with the G-modules, stands for highest flexibility and individualization in production. Its compact design on one platform allows easy transport and fast commissioning.

An automatic gripper change is available for different clamping fixtures and part types. Freely selectable part geometries ensure short

set-up times. In addition, the innovative drawer system offers a space-saving solution for feeding and removing parts or clamping fixtures. The GROB<sup>4</sup>Automation

control software completes the robotic cell with its intuitive programming and order management for an optimal automation solution.



# GROB ELECTROMOBILITY

## "Fully Electrified" – Expertise and Experience for an Electrical Future

GROB has established itself firmly as an innovative supplier for e-mobility and supports its client's technological shift from combustion engines to electrical drives. GROB has positioned itself as a powerful and reliable partner providing top quality as usual for over twenty successfully delivered assembly lines and approximately twenty additional orders.

GROB's product range for new technologies includes customized solutions for the production of electric motors and energy storage systems. This helps GROB go beyond the most diverse requests and technical parameter requirements. We support our customers at every stage of the product development process. GROB contributes its experience and develops the desired results with its customers, starting from the first joint prototype design to the specific requirements of large series. GROB is one of the few

manufacturers that can supply everything, from engineering to complete turnkey systems. In addition to almost all major automotive manufacturers in Germany, U.S. car manufacturers and other companies

in Europe and Asia already rely on e-mobility made by GROB. GROB's electromobility solutions are also used by automotive suppliers. We can now see how important it was to hit the ground running and to strategically

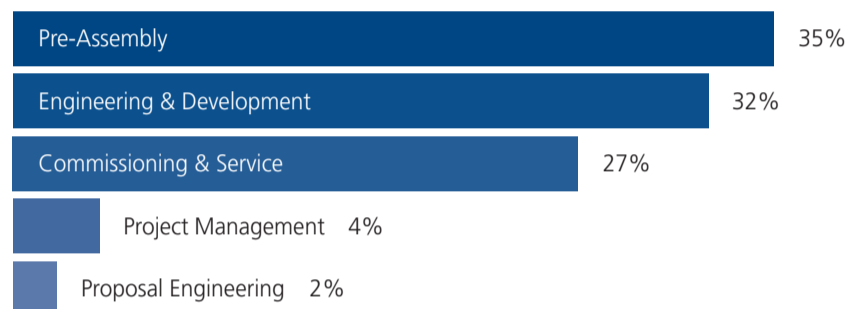
develop the new electromobility business segment early, four years ago, so we are perfectly positioned to grasp the opportunities ahead.

### HIGH INVESTMENT LEADING TO HIGH OUTPUT

GROB is investing significantly in new jobs and in further training and qualification of its employees to safeguard and expand our technological success even further. It is only with concerted expertise, thinking outside the box, and a consistent drive for optimization that we can shine when overcoming new challenges. For this reason, we quadrupled the number of employees in the new technologies division to over 1,600 people in the past three years alone. About one third works in pre-assembly, another third in engineering & development, and the last third in commissioning & service as well as project management.

### At a Glance

Since 2017, the GROB Business Unit "New Technologies" has quadrupled, from 415 to about 1,600 employees currently. The employees work in the following departments:



## GROB convinces as a supplier for customized turnkey projects

Today, GROB is a widely recognized development partner for sustainable complete solutions in the field of electromobility.



# GROB's E-Mobility Solutions: Used Globally

## IN NORTH AMERICA

customers like Ford, General Motors, Hitachi, and Dana rely on GROB technology.

## IN EUROPE

automotive manufacturers such as BMW, the Volkswagen Group, Daimler, Audi, and Jaguar Land Rover, as well as suppliers such as Continental, Valeo Siemens, Marelli, and Mahle number among GROB's customers.

## IN ASIA

GROB supplies products to customers like Nidec, Valeo Siemens, ZF, Huayu, and Korens, among others.

## At a Glance

Within just a few short years, GROB has firmly established itself as a trailblazer and pioneer in the global electromobility market. Demand for GROB's e-mobility technologies is increasing, especially in China, Asia's core market, and in Germany as well.



## Third-Generation Hairpin Technology

**Our successes show that GROB has established itself as a reliable partner for the automotive industry, offering versatile solutions in e-mobility. Our production system for hairpin stator manufacture in various sizes is a key component of our comprehensive product range and proof of the continuous further development in electromobility by GROB.**

GROB has assigned its capacities sustainably, so that our expertise can be used both for current project management and for the further development of our projects that we are focusing on. Against this background,



HAIRPIN TECHNOLOGY REMAINS THE CURRENT CUSTOMER TREND

it is no surprise that many hairpin technology process steps are already in the third generation of development.

### TECHNICAL APPLICATIONS CENTER MAKES E-MOBILITY TANGIBLE

The results of our development efforts are reflected not only in successfully carried out customer projects. All equipment needed for stator prototype production is set up on-site in our Technical Applications Center for e-Mobility (TAE) in Mindelheim, which was established early on. This makes individual design steps tangible for our customers, even during product design.

# GROB ELECTROMOBILITY

## Innovative System Concepts for Battery Module Assembly

In addition to electric motors, energy storage systems are the second important pillar for the electrification of the automotive drivetrain.

### MASTERING THE CHALLENGES

The high requirements for the quality and safety of the design, engineering, and production of our customers' battery module assembly projects intensify the technically demanding conditions of the individual production steps. The largest challenges are the increasingly shorter innovation cycles. In response, GROB developed a modular, scalable system that satisfies our customers' individual requirements on cycle time, technical objectives, and cost.

### COMPREHENSIVE BATTERY MODULE ASSEMBLY PORTFOLIO

The creative, innovative and sustained cooperation of GROB experts – from engineering to commissioning – has resulted in sustainable production processes and intelligent concepts, and has always generated customer-oriented solutions, from the initial idea to customized series production. For example, high-quality prismatic cells and pouch cells are processed and combined with advanced equipment in fully automatic and interlinked GROB production

### GROB's battery module assembly portfolio:

- Pouch cell assembly
- Prismatic cell assembly
- Development of end-of-line (EOL) test

Customers like Daimler/Valmet or BMW rely on GROB's expertise in battery module assembly.



lines for battery modules. Depending on the specific customer requirements, various cell sizes are stacked and connected to each other. Subsequent processing of battery modules is carried out in battery pack assembly machines, where the modules are connected fully automatically in their preset positions. Already GROB can implement in-house developments for this process and therefore offer a comprehensive battery production process as an equal, competent partner, from machines for single battery cells to complex battery packs.



## Battery production process and services in the battery technology sector



\* Current status: In pre-development | \*\* Current status: In-house developments implemented



# Innovative Machine Concepts for Battery Cell Assembly

GROB provides innovative production solutions for large-series production in electromobility with a focus on the mechanical assembly of prismatic cells as well as pouch cells. At GROB Mindelheim, manufacturing processes can be developed from scratch and verified in our own application laboratory for process development.

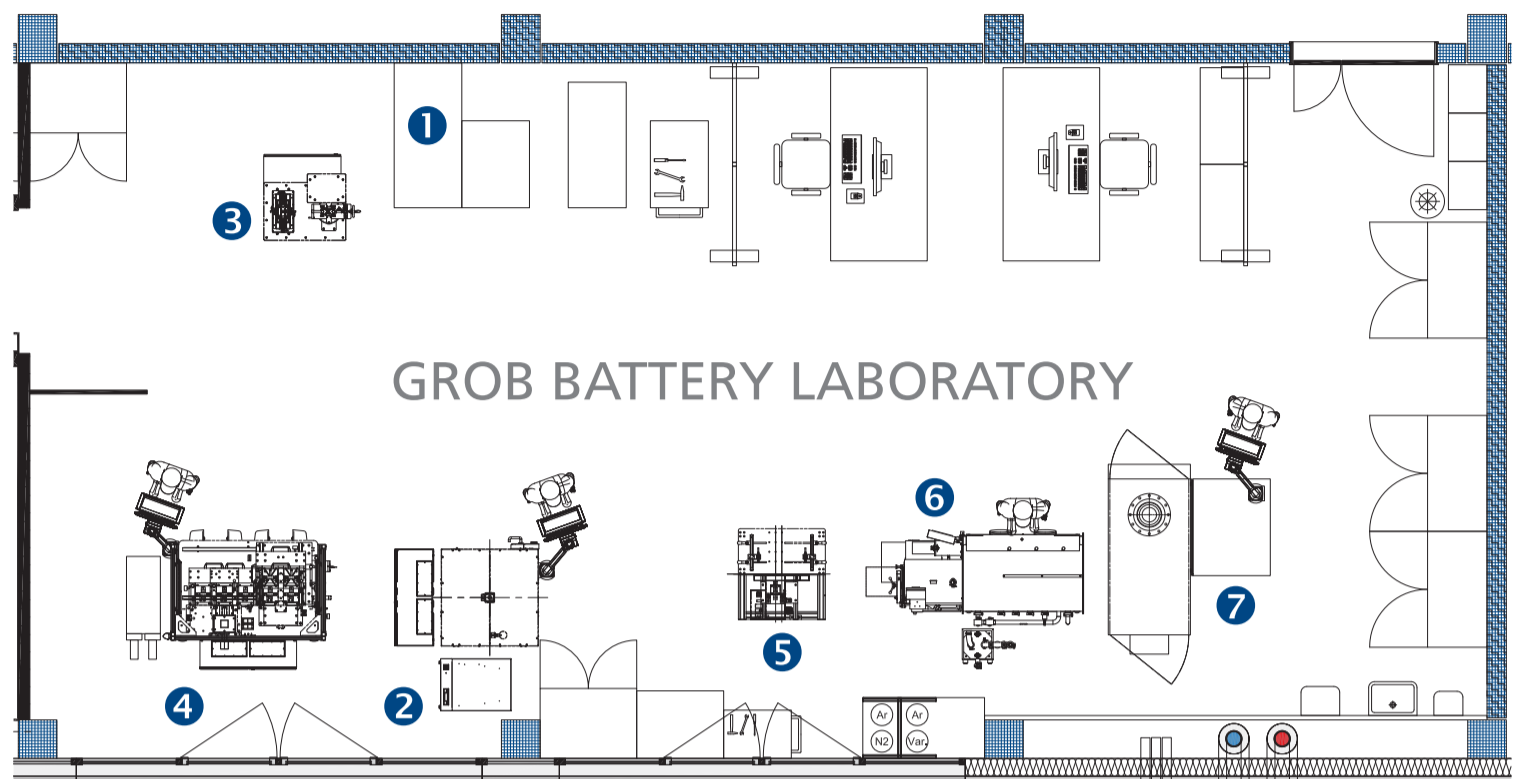
GROB offers a complete range of solutions for battery technology, from cell production to module and pack assembly. At GROB, we fulfill our customer's requirements and needs concerning the mechanical assembly of prismatic cells and pouch cells for cell assembly.

## APPLICATION LABORATORY FOR PROCESS DEVELOPMENT

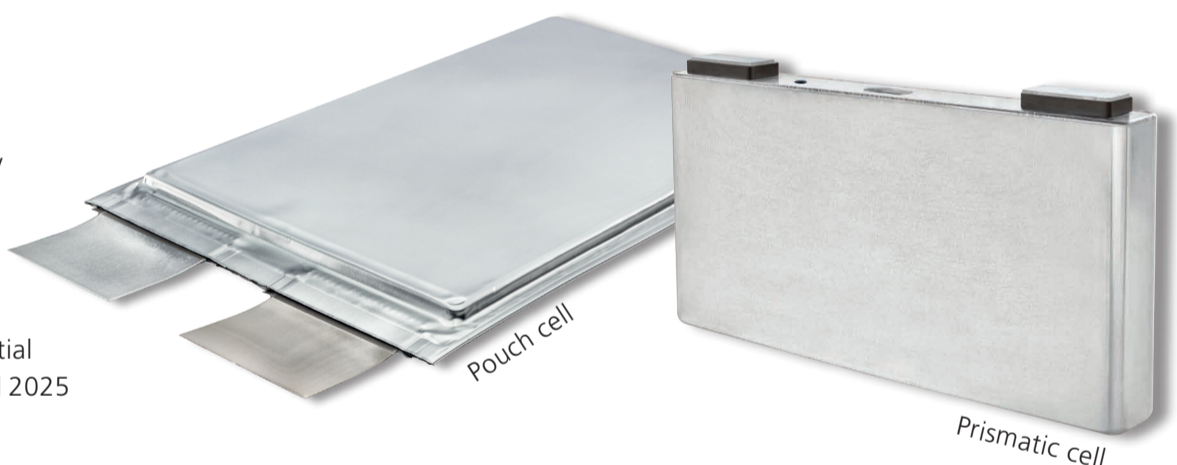
GROB owns a 2,400 sq. ft. Application Laboratory in Mindelheim (see image) for in-depth analysis and verification of the manufacturing steps of lithium ion cells. This lab researches and develops new processes that are suitable for large-series battery production. This way, GROB can carry out the complete manufacturing process for pouch cells, from rolls to completely assembled cells. The process steps are implemented either manually or semi-automatically.

## TOUGH GLOBAL COMPETITION

Battery assembly is promoted considerably throughout the world in Canada,



the U.S., Italy, and especially in the Asian countries of China, Korea, Japan, as well as India. This is no surprise, since market analyses show enormous sales potential for battery cell assembly until 2025 and beyond.



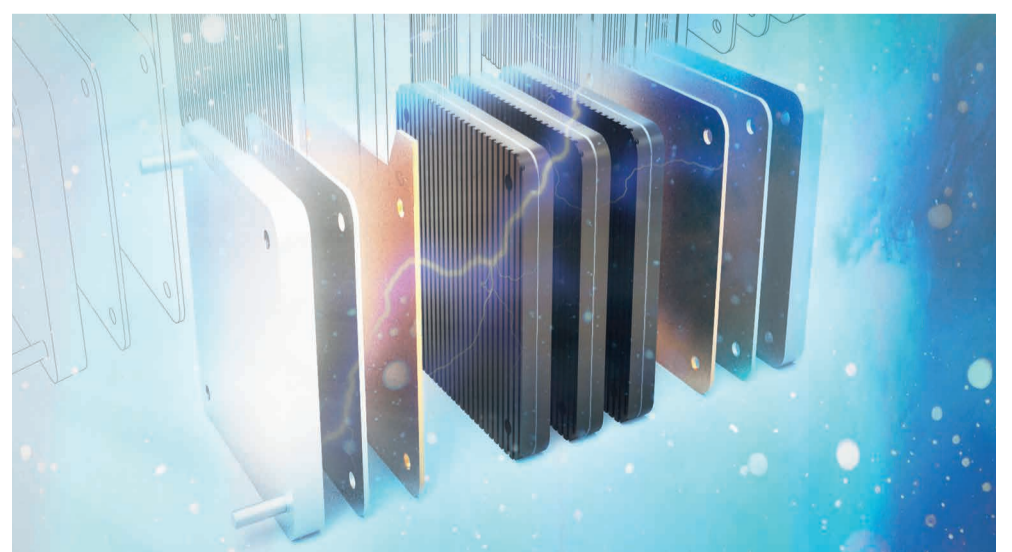
## Focus on Fuel Cell Stack Assembly

In fuel cell technology, GROB focuses on the heart of the fuel cell, the stack, as well as on neighboring processes, such as downstream pressing.

The most promising electromobility technology is fuel cells, a technology that GROB is researching and developing intensively. For the assembly of components in the vehicle fuel cell drive, GROB offers innovative and automatable manufacturing and assembly lines that guarantee a high degree of flexibility, precision and reliability.

GROB is perfectly positioned thanks to its sophisticated overall concept that was coordinated in close cooperation with customers and research institutes, and whose future requirements were discussed in depth.

In stack production, precise and fast stacking of the two components, the bipolar plate (BPP) and the membrane electrode assembly (MEA) is crucial to attain the predefined requirements for stack quality. In addition to careful part transport, the requirements of a pure environment are also key.



# GROB MINDELHEIM

## With Express Production on the Fast Lane

**GROB is offering a new, exclusive service in its newly founded Competence Center: Replacement and wear parts are manufactured as top-priority at top speed and shipped immediately. To do this, GROB Mindelheim owns separate machinery in Hall 7, putting GROB Service on the fast lane.**

Everything must go quickly in the case of a machine outage. In early October, GROB set up flexible express production in order to provide urgently needed spare parts to our customers as soon as possible and at top GROB quality. After production, the spare parts are immediately delivered in close cooperation with Logistics. The

customer's benefits are clear: They not only profit from a significant reduction of machine downtime, but also minimize their spare parts inventory and therefore capital formation, thanks

to this service. Express production is based on decades of experience in manufacturing special components, which is now combined with maximum speed at GROB. Furthermore, ad-

ditional manufacturing capacities are available. A total of seven machines are available for express production only in Hall 7, among them a G350 and a G550 with excellent milling performance. Component production is divided into different categories depending on their planned maximum throughput times. No more than one day is planned for the production of sheet metal, manufacture, turning, and milling parts. More complex components, such as parts requiring heat treatment, are to be ready for shipment within three days at the latest. An express fee is charged for express production. If delivery is delayed for more than 24 hours, the customer will receive a 50% discount on the express order price.



## Exemplary paradigm shift in sheet metal processing

**By relocating the production of sophisticated and complex assemblies to our own production facilities, we have not only increased the vertical range of manufacture, but also improved quality and massively reduced costs. A paradigm shift in sheet metal production in which no stone was left unturned, and at the same time a development that is symbolic of the entire GROB Group.**

Due to the increased demand for quality and delivery reliability in paneling construction, the production structure in GROB's sheet metal production was changed, whereupon complex assemblies (such as sliding cabinets) were manufactured in-house. However, in order to become competitive within GROB, a complete change in the process

organization was required, including an optimization of the material flow and a restructuring of Hall 3. In order to counter the resulting problems of massive bottlenecks in welding and pre-assembly, a whole package of measures had to be implemented:

- **Adaptation of the workstations to the part sizes**
- **Separation and specialization of set-up and grinding processes and standardization of production**
- **Installation of a clocked production line for welding assemblies and digitalization of the processes**

These measures have made it possible to reduce welding costs by up to 70 percent, thus halving the costs for the entire sheet metal product (from

prototype to series). In the case of a welding job for a base frame of a universal machine, this meant a reduction in working time from 51 to 15 hours and a reduction in throughput time from eight to three weeks. If, as planned,

production is then switched to a pull system based on the just-in-time principle at a later date, the final assembly department even has the complete kit for machine enclosure available within two weeks.



## At the Right Place at the Right Time – A Breakthrough for Lean Assembly Processes



**A new, integrated pre-assembly concept for the New Technologies Business Unit creates ideal conditions for implementing our customer's projects with the required efficiency and quality. With its newly defined processes in halls 6 and 8, the location is perfectly positioned, reducing door-to-door times by up to 40 percent.**

The Assembly Department has grown dynamically throughout its history, just like the complete product range of the

Business Unit itself. Until 2015, pre-assembly could be covered in a single hall in Mindelheim. However, this became logistically impossible in late 2015 and external locations had to be leased. Nonetheless, a return to Mindelheim became inevitable by the turn of 2019/2020 due to increasing order volume. Meanwhile, the necessary capacity had been created with the construction of an additional hall. After the successful move, the goals were clear: efficient line assembly thanks to maximum material flow transparency and perfectly interlinked

workflows. Together with a large team of specialists and external expertise, we are developing solutions to create ideal conditions for efficient assembly optimization and to achieve significant amounts of time and money. Provisioning of material and information is becoming more efficient, because logistics is now separate from assembly, and a fixed assembly sequence has been set up. Daily shop floor meetings of the teams and efficient change and missing part management now ensure optimal communication among the different departments.

# GROB BRANCHES

## New impulses for GROB sales worldwide

### MECHANICAL ENGINEERING MARKET IN THE NETHERLANDS ON HOLD

**Deferred or postponed investments: The mechanical engineering market in the Netherlands is at a complete stop. Things could not have been worse for the new Branch Manager Mark Schoofs' start for GROB in the Netherlands.**

The new GROB Benelux Branch Manager, Mark Schoofs, certainly expected a more pleasant start with GROB. The mechanical engineering market in the Netherlands, especially conventional machining, is currently on hold due to COVID-19: Investments are canceled or postponed. Technishow 2020, the most important industrial trade fair in the Netherlands, was first postponed to September, and then completely canceled due to the ongoing pandemic. Aside from DAF (Doorne's Automobiël Fabriek) with plants in Eindhoven (Netherlands) and Westerlo (Belgium), there is practically no automotive industry in the Benelux. Our target group is therefore in the fragmented universal machining center sector of the aerospace industry and the die and mold industries. "This industry is slowly recovering, especially since the effects of the second COVID-19 wave are not fully felt yet," says Mark Schoofs, seeing light at the end of the tunnel. He expects a recovery of the universal machining center market in the next six months and is delighted about the new G150, which he believes fits the Dutch market perfectly. "Now we can also convince small and medium-sized companies of the technological possibilities of GROB's 5-axis machining centers."

### NEW SALES ORGANIZATION FOR SOUTHEAST ASIA

**The GROB Asia Pacific Sales Center was founded in September 2020 to intensify sales activities in Southeast Asia. It is based in Haiphong, Vietnam, and is responsible for the core markets of Vietnam, Singapore, Indonesia, Malaysia, Thailand, the Philippines, and Taiwan.**

After China, South Korea, and Japan, GROB's fourth branch in Asia was established in Haiphong, Vietnam, in 2018. First, the new branch organized the delivery of a complete cylinder head and cylinder block line to Vietnam's first automotive manufacturer VinFast. Even then, it was obvious that the GROB Sales Center for the core markets in Southeast Asia would be developed in Haiphong. "Since



GROB Benelux Branch Manager Mark Schoofs (left) with his team



Purita and Uwe Wedler from GROB Asia Pacific

it makes no sense to work the Asian markets with direct sales alone, we decided for a mix of direct sales and sales with distribution partners," says GROB CSO Christian Müller of the strategy.

Uwe Wedler is the new Branch Manager of GROB Asia Pacific and GROB Vietnam, managing GROB's strategic development in the region from his branch office in Bangkok, Thailand. Uwe Wedler focuses directly on the Vietnamese and Thai markets. Thomas Grabe, CEO of GraBaTech Asia Pacific, headquartered in Singapore,



Wolfgang Ulmer from GROB Switzerland

provides support for the countries of Singapore, Indonesia, and Malaysia. Final contract negotiations are currently underway for the Filipino and Taiwanese markets. "Since almost all investments in the systems business, universal machining centers, and electromobility have been postponed to next year, we use our time to build and expand our sales organization further," says Uwe Wedler. "Nevertheless, we are already working on several important projects. We are convinced that we will continuously expand the important Southeast Asian market with our various GROB products."

### WOLFGANG ULMER: NEW SALES MANAGER FOR SWITZERLAND

**Wolfgang Ulmer has been the new Sales Manager for the GROB branch in Switzerland since March of this year. The Swiss market has great potential, especially for universal machining centers with a focus on 5-axis universal machining centers.**

Switzerland has been hit hard by COVID-19. Since March 16, 2020, a state of emergency has been in force in Switzerland with massive restrictions on public life and extensive hygiene regulations, similar to the situation in Germany. Fortunately, the GROB branch has been able to work unhindered and is limited neither by short term work nor in any other way. Furthermore, we have had zero infections among our relatively small team of three employees. Unfortunately, customer visits to Mindelheim cannot be made from Switzerland at this time, so online meetings and phone calls are conducted instead. We are happy that GROB Service can continue despite the difficult situation.

"The economic sentiment is not bad given the circumstances," reports Wolfgang Ulmer. "The Swiss economy is slowly improving. We notice that because we are invited to final negotiations and starting new projects again for our customers in the die and mold industries, energy technology, and aerospace industry." The Swiss mechanical engineering market is primarily composed of many small companies with about 10 to 50 employees. There is practically no automotive industry or Tier 1 suppliers in Switzerland.

# GROB USA

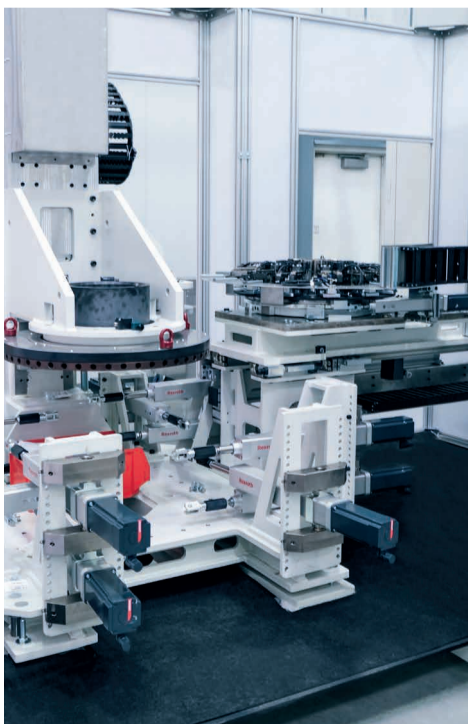
## GROB Bluffton Braves COVID-19 and a Difficult Economy

**COVID-19 has hit the U.S. hard, leading to the highest government deficit since World War II. Reputable economists are no longer excluding a recession in the coming months. Nevertheless, GROB Bluffton is well-positioned with orders on hand until September 2021. With all the uncertainties, it remains a delicate balancing act.**

Since March, COVID-19 has impacted the U.S. more than most other countries in the world. The U.S. has the largest number of deaths, one of the highest infection rates and no national strategy on how to deal with this virus. Of course, Americans would have rather done without this development.

### THE U.S. AUTOMOTIVE INDUSTRY IS CHANGING

The U.S. automotive industry is affected by these developments as well. After automotive production had to be temporarily shut down in the spring, sales initially decreased as well. While in February 17.2 million new vehicles were expected to be sold this year, it dropped to 9.1 million in April, before stabilizing in September with 16.8 million units. The same now applies to investments in the medical, automotive, and aircraft industries, though very cautiously. The low willingness to invest in the automotive industry is due to the fact that its production capacities are absolutely sufficient for selling 17.5 million vehicles annually. This is one main reason why investment in production systems for combustion engines is almost zero, with few exceptions.



E-Mobility solutions made by GROB Bluffton

Investments in new technologies and e-mobility were made much later in the U.S. than in Europe and China, but caught up significantly last year. Not only traditional customers like General Motors and Ford make investments, but also numerous new companies that want to start production in approximately two years. This development has gained momentum, even without government support. In the past, alternative drives

Titan, Lordstown, Faraday, Lucid and Cummins.

### PREPARED FOR THE PARADIGM SHIFT IN DRIVE TECHNOLOGY

Thanks to our innovative electromobility technologies, GROB Bluffton achieved an excellent reputation in the American market and has already secured several orders from longstanding customers



Distance and protection – Corona-compliant work in the new GROB USA office building

were only a topic in California – where registration of new cars with combustion engines will be prohibited from 2035 on. Michael Hutecker, President of GROB Bluffton, sees great opportunities in the American electromobility segment: "We expect that many other states will follow California's example." In fact, more and more companies are exploring e-mobility, such as Rivian, Canoo, Nikola, Karma,

such as Ford and General Motors. We have had a close cooperation for months with other new customers, such as Dana, Rivian or Borg Warner, and have started initial discussions with Canoo, Faraday, and Lucid. GROB actively supports the progress of electromobility in the U.S. with its new technologies, and is fostering even more acceptance for the paradigm shift in the automotive industry.

### FAR-REACHING CONSEQUENCES FOR PRODUCTION

The evolution from conventional machining to electromobility has far-reaching consequences for GROB Bluffton. Almost the complete production had to be modified to follow this path. Not only do we need completely new production systems. But also the new e-mobility machines and systems require more space

in the assembly shop than the compact machines for conventional machining. Another challenge for GROB Bluffton was finding highly-trained employees. The U.S. plant has been hiring electrical engineers for a while and instructing and training its own personnel in new technologies with Mindelheim's expertise. "At GROB Bluffton, we have proven time and again our capability to develop and produce complex systems with automation," explains Michael Hutecker. "We were successful again this time, and therefore, our success in the new electromobility business segment is no surprise."

## GREAT CHALLENGES FOR 2021

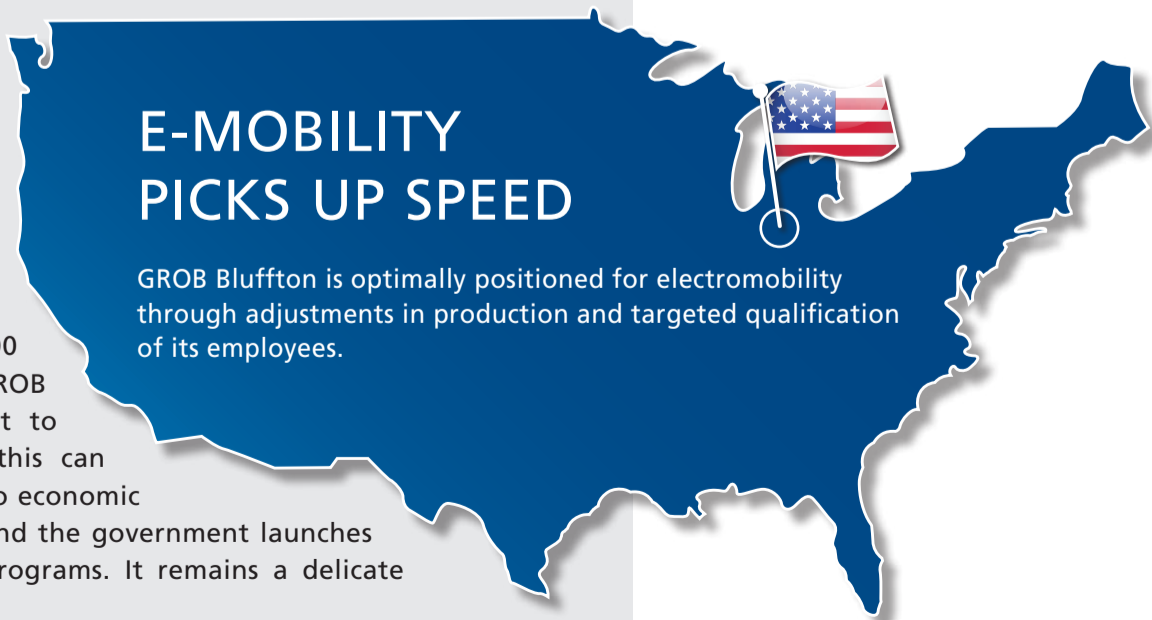
GROB Bluffton's future lies not only in the hands of our American colleagues.

They too are hoping for a quick vaccine for COVID-19, so they can hold exhibitions and trade fairs again and finally maintain personal contact with their customers.

Our approximately 600 employees at GROB Bluffton can do a lot to achieve success. But this can only work if there is no economic recession in the U.S. and the government launches stimulating funding programs. It remains a delicate balancing act for all.

## E-MOBILITY PICKS UP SPEED

GROB Bluffton is optimally positioned for electromobility through adjustments in production and targeted qualification of its employees.



# GROB BRAZIL

## Light at the End of the Tunnel for GROB in Brazil



**Despite rising Corona cases, Brazil's economy is slowly recovering. And the new 4-axis generation G-module gives B. GROB do Brasil hope to penetrate new markets. Although some uncertainty is still affecting investment in the country, there is light at the end of the tunnel. So the tense situation in Brazil is characterized by hope and cautious optimism.**

Although daily new COVID-19 infections and the number of deaths in Brazil fell by half in September, new infections, and therefore deaths, have increased again over the past few weeks. It is currently unclear, however, what effect this new rise in the infection rate will have on Brazil's recovering economy. Only 44 employees of B. GROB do Brasil were infected, two of whom required intensive care. At this time, sixty employees are still working from home. This situation must be re-evaluated depending on the development of the infection rate.

### THE BRAZILIAN AUTOMOTIVE INDUSTRY IS RECOVERING

Almost all economic indicators, including the number of vehicle registrations, are trending upwards, and automotive production is now only 15% below the comparable previous-year period. "Most automotive manufacturers are working in three-shift operation again. This gives us hope that the projects that are so important for B. GROB do Brasil and that were either delayed or temporarily halted will be re-activated this coming year," says Michael Bauer, President of B. GROB do Brasil. Especially since the prime rate was lowered from 6.5% to 2.0% in the past six months, which provided

outstanding financing opportunities for further growth. This growth is reflected in automotive sales. However, electromobility is still insignificant in Brazil.

### FLUCTUATIONS AS DURING THE FINANCIAL CRISIS OF 1999

The current situation of the Brazilian Real is reminiscent of the currency crisis twenty years ago, when the Real was drastically devalued by about 50% in January 1999 – despite an international aid package of \$40 billion put together under the leadership of the International Monetary Fund. Even in the current fiscal year, GROB Brazil is battling the enormous currency fluctuations of the Brazilian Real to the Euro and the Dollar. Within one year, the Real was devalued almost 30% towards the Euro. This may provide B. GROB do Brasil a minor business advantage for the GROB plant network (exports), but it already has massive negative effects on ongoing projects and national projects, which are invoiced in Brazilian Reals. So things are the way they have always been: Work in Brazil requires strong nerves.

### B. GROB DO BRASIL IS READY TO MEET NEW CHALLENGES

Since the beginning of this year, the number of employees at B. GROB do Brasil was reduced by 7% to 550 staff. Unfortunately, the decrease in GROB Group's sales has significant effects on the GROB plant network business and consequently on GROB Brazil's sales. The orders on hand of B. GROB do Brasil were reduced to one year because an order was canceled. Due to the current situation and market insecurities, no

further investments are currently planned, except the renovation of the Fris MolduCar hall's roof.

As a part of GROB Group, B. GROB do Brasil will continue to prove itself a competent partner for the delivery of motorized spindles, pallet conveyors, blow-off cabinets, and possibly 4-axis machines.

## CAUTIOUSLY OPTIMISTIC BUT CRITICAL OUTLOOK FOR B. GROB DO BRASIL

Despite the tense economic situation, we can feel cautious optimism in the Brazilian industry with positive effects, as was the case before the Corona crisis.

"Since the GROB plant network business is very important for B. GROB do Brasil, we strongly depend on the development of GROB Group and global markets," says Michael Bauer about the future. "Therefore, we must continue to coordinate closely with GROB Mindelheim and carefully adjust our product portfolio to be perfectly positioned for the future!"



Well prepared for future challenges – The GROB plant in São Paulo

# GROB CHINA

## Overcoming the Crisis with Only a Black Eye

**The market in China is stabilizing, but the situation remains tense due to GROB China's loss of large-scale automotive orders that cannot be compensated. Yet, the outlook is positive. GROB China's perspectives are better than expected thanks to our expanded GROB product range in almost all areas, increased investment in e-mobility and in the commercial vehicle industry, and growth primarily in the aerospace industry.**

The good news first: The Corona Crisis Team's outstanding work with the safety procedures taken for the plant and our employee's high discipline have helped GROB China consistently fulfill the high requirements of the Chinese authorities and only had to close once for seven days in February. This way, GROB China has gone through the ongoing pandemic without any major project delays and was able to prove itself a reliable partner even in times of crisis. "We would like to sincerely thank all our employees," says GROB China Plant Manager Marcus Ostler.

### DIFFERENT MARKET DEVELOPMENTS IN DIFFERENT INDUSTRIES

After the economy experienced a setback due to the COVID-19 lockdown at the beginning of this year, the market conditions in China have stabilized again. Although investment of the passenger car sector in combustion engines is weak, almost all reputable commercial vehicle manufacturers in China are investing in larger new manufacturing lines and/or expansion stages. GROB China is currently negotiating several such large-scale projects and is on its way to secure truck manufacturer sub-suppliers as new customers.

Increased growth is beginning to show in the aerospace industry as well. Since linked systems with integrated Industry 4.0 applications are in particularly high demand in this industry, GROB is perfectly positioned with its Generation 2 products combined with the PSS-R and PSS-L automation solutions as well as the GROB-NET<sup>4</sup> Industry software solutions. "Thanks to targeted activities of the sales team and strong marketing in the form of roadshows and webinars, as well as international cooperation with other GROB plants, we are on a good path compared to established competitors," says Marcus Ostler confidently. And the best part is: "We expect to secure additional market segments with the introduction of the G150 and 4-axis machining centers next year."

Significant investment is planned in e-mobility as well, especially by global manufacturers. GROB China won the first local large-scale order for hairpin stator assembly. At this time, we are leading additional, intensive discussions about more deliveries of large-series systems for hairpin stator lines as well as battery module and conventional assembly systems.

### EXPANDED PRODUCT PORTFOLIO FOR NEW MARKET SEGMENTS

Great opportunities for growth exist not only in the aerospace and commercial vehicle sectors, but also in several other industries, for example the medical industry. Against this background, we greatly expanded GROB China's product portfolio, adding machine models G500F, G520F, G700F, and G720F, that are used especially in the highly competitive frame structure parts market. The universal machining centers G350, G550, and



Further education in the field of new technologies

G150 are built locally in our Dalian plant to complete our portfolio and to offer the whole 5-axis machining center product range "Made in China" in addition to the G350a and G550a.

In the area of new technologies, GROB China invested in a prototype system for stators to support development of A, B, and C-model stators for its customers

and to be able to manufacture them at the Dalian site. They can finally be integrated into the customers' test series, and GROB will be able to strengthen its starting position for awards of series systems.

GROB China developed a stator and successfully manufactured it in order to demonstrate the system's performance to our customers and train staff for the new e-mobility segment. The system comprises ten stations with a capacity of six to eight stators per day, and has been in operation since July 2020. In addition, the sales, engineering, and assembly teams were expanded, and an international team was created to advance the regionalization of new technologies for China. A 8.6 acre (35,000 m<sup>2</sup>) property was purchased to build an additional approx. 260,000 sq. ft. (24,000 m<sup>2</sup>) production hall in the next two to three years due to the increased space requirements for new technologies. With their expanded product portfolio, the systems can be produced locally in China, allowing for shorter delivery times. This also allows GROB China to offer a complete package to its customers.



The new Technical Application Center for E-Mobility at GROB China

## HOPE FOR THE FUTURE

The outlook remains tense in China, too. The pandemic has largely abated and travel and events are possible with almost no restrictions, yet the economy remains somewhat slow. However, the commercial vehicle industry with its high investments offers a ray of hope. GROB is negotiating several large-scale projects here. The e-mobility market keeps growing. We are negotiating several large e-mobility projects, mainly with international automotive manufacturers.



# GROB ITALY

## New Electromobility Plant Opened in Pianezza

Twenty months after breaking ground, GROB Italy moved to the new plant in November of this year. This is a special highlight, not only for our Italian colleagues. The opening of the electromobility plant in Pianezza creates new, expanded capacities, boosting GROB's e-mobility and its capability to satisfy the demand in this drive segment.

Our colleagues in Pianezza, Italy probably expected things to go differently: First, completion of the plant was delayed due to COVID-19, and then, no official opening ceremony could be held in November for the same reason. The ceremony was postponed to next year, when we will hopefully be over the

the automotive industry is the driving force of a small, weak economic recovery. This shows the strength of Italy's automotive supplier industry with its small and medium-sized companies.

### NEW SALES STRUCTURE IMPLEMENTED AT GROB ITALY

In the past months, the GROB Italy's Sales Department was integrated into GROB's global sales network in close cooperation with Mindelheim. The goal is to open up new markets and clients for Italy that reach far beyond its traditional markets. For this purpose, a new Sales Department was created with two employees, whose task is the acquisition of new customers in the



## A MILESTONE IN GROB'S GLOBAL ELECTROMOBILITY STRATEGY

The new production plant in Italy creates new capacities and answers the increasing demand for electric drives.



COVID-19 pandemic. And yet, we are delighted about this new GROB plant, which will play an integral part in GROB Group's global electromobility strategy. The 52,000 sq. ft. (4,800 m<sup>2</sup>) of production space and a 35,500 sq. ft. (3,300 m<sup>2</sup>) office and social building now offer more than three times the surface area of the previous factory building.

### MECHANICAL ENGINEERING SECTOR HIT HARD BY COVID-19

Italy's mechanical engineering market contracted by almost half last year, with the exception of aerospace engineering. Therefore, new investments were either canceled or postponed to next year. Nevertheless, GROB Italy could mostly work uninterrupted thanks to its excellent number of orders on hand, with the exception of a four-week lockdown in spring. Only on-site customer service was highly problematic due to travel restrictions. Fortunately, the Italian Service Teams received optimal support from their global GROB Service colleagues for bottlenecks.

The situation has somewhat normalized again, now that the first wave of the pandemic is over. Despite its plunge at the beginning of this year,

universal machining centers sector. The Service Department added two more engineers, ensuring faster and better service along with higher market penetration. The team in the traditional electromobility sector has been expanding for months. New staff were employed in the design, software, and quality assurance areas.



Visitor-friendly – The reception in the new office building of GROB Italy

## GOOD PERSPECTIVES FOR THE EMERGING ELECTROMOBILITY MARKET

Despite this year's challenges, our Italian colleagues have the current situation fully under control. Large-scale projects, for example, for Valeo Siemens, Magna, Mahle, Renault, and Nissan can be processed again. Opening the new plant not only created new capacities, but also laid the foundation for improved workflows and operational structures.



Opened its doors in November 2020 – The new GROB production plant in Pianezza



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Bluffton, Ohio, USA  
Detroit, Michigan, USA  
Querétaro, Mexico

### SOUTH AMERICA

São Paulo, Brazil

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Birmingham, Great Britain  
Hengelo, Netherlands  
Senlis, France  
Baar, Switzerland  
Poznań, Poland  
Győr, Hungary  
Moscow, Russia

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