

Magazine for customers, employees and partners



Our trainees were clearly having fun at our photo shoot for the company's marketing activities.

Photo: BBG

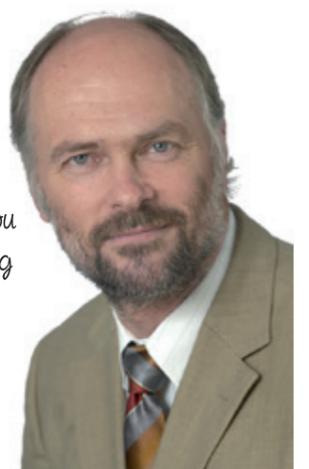
Dear readers,
 As a team, we are strong – not just in terms of our day-to-day work, but also as part of the BBG group of companies. Our recent international successes bear clear testimony to this. We want to celebrate two of these successes with you in this issue. Our high-growth BBG Asia subsidiary, formerly P-PEQ, is celebrating its tenth anniversary with a new record in terms of turnover. And our second subsidiary, BBG North America, which was only founded in 2014, has also already been awarded Best Supplier status in the USA by Webasto. We plan to show you various examples that will improve our work in the future in this issue. "Variable feature technology", which accelerates and optimizes the NC programming for component processing on our milling machinery, has already been introduced. The BBgo project, which launched last year, is nearing completion. With a variant configurator for the BFT - P V2 mold carrier system, it promises to make work considerably easier for various departments.

The participation of 16 BBG'ers in the Germany-wide "Cycle to work" campaign, organized again by the AOK and ADFC, is new. The event organizers may be attracting participants with a range of prizes, but the emphasis is on enjoyment, as the cyclists from Mindelheim confirm.

Continued on Page 2

We hope you enjoy reading this issue

Yours,
 Hans Brandner



In this edition

Ten Years of BBG Asia

- A visit to Changchun and Shanghai
- New Operations Manager Ronald Blach

BBG'ers getting involved with the "Cycle to work" campaign

Fully automatic drilling operations thanks to "variable feature technology"

New staff in Mindelheim

And the winner is... Award for BBG North America

BBgo: Relief for all areas of work

Ten Years of BBG Asia

BBG's oldest subsidiary is celebrating its tenth anniversary. In 2006, BBG Asia was founded in the north Chinese city of Changchun, with the aim of producing tools for the Asian market that met German quality standards. The team has since grown from seven to just under forty, and sixteen members of staff are also employed at the new branch office in Shanghai. Together, the two sites look after one of the most important markets for BBG products: China, where the BBG Group achieved a turnover of around Euro 9 million over the past year. The fully-owned subsidiary's machine fleet is comparable with the one used in Mindelheim and encompasses, among others, nine milling machines, including

5-axis machines. The plant primarily produces foam tools for the automotive supply industry.

A sample production facility opened in 2015, which features an extended hydraulic BFT-G mold carrier and Glassline high-pressure metering machine, allows customers to have prototypes produced directly in Changchun. In the same year, a design department was also established to carry out design modifications to tools and complete tool constructions.

New Composites Sector

While tool production is based at the original site in Changchun,



Production in Changchun

Photo: BBG



Company headquarters of BBG Asia Ltd. in Changchun

Photo: BBG

the branch in Shanghai, founded in 2013, carries out the majority of repairs and tool modifications. The Composites unit, with manufacturing technologies for series production, is also based in Shanghai, having been opened there just two years ago.

BBG Asia's main area of business remains the sale of our own foam tools, although mold carrier systems and all-in-one solutions for PUR processing are also in high demand.

Significant shortening of delivery deadlines

Over the last three years, the Asian subsidiary has managed to tangibly reduce

its delivery deadlines. This major success in the competition for Chinese customers has been made possible by a warehouse extended with key components in Changchun, as well as the creation of a reliable network of local suppliers. In the past year, for example, 99 percent of all parts required for the production of foam tools have been produced in China.

The relocation of the Changchun production facility to a new, larger facility in 2011, an expansion of the machine fleet with two milling machines in 2014 and a workshop for the optimized use of CAD/CAM software from Trebis have also played their part in shortening delivery times. At the same time, the company has also managed to increase production capacity to five tools a month.

Field sales as a guarantor for sales

The field sales team is crucial for success when it comes to selling in China, explains Managing Director Christian Fritz. "Companies in the glass foam with polyurethane sector are few and far between, and they are all familiar with each other and even share their expertise with one another. In addition to the essentials - good prices, quality and on-deadline delivery - excellent service and regular customer contact are the best advertising you can have."

Christian Fritz predicts considerable potential for mold carrier systems in particular. More familiar competitors are often sought out first. Fritz wants

to change this by beefing up the field sales team and stepping up marketing in China.

Turnover almost doubled since 2012

Despite a few missed contracts, sales have grown constantly since the subsidiary was first founded. "In recent years, we have managed to win a number of new customers," says Fritz delightedly. Since he took over as Managing Director in September 2012, turnover has almost doubled - from around CNY 22 million to CNY 42.5 million in 2015.

For the immediate future, his goal is to develop more areas of business. "We

are currently in the process of analyzing various possibilities. These include handling, automation and switching cabinet construction, for instance."

Transfer with the shuttle bus

Fritz vividly describes his working day in China. A lot runs the same way as it does in Mindelheim, but two things stand out: "Firstly, we bring our staff to work on a shuttle bus and we also provide them with food and drink. Otherwise, it would be dif-

icult to find workers - in Changchun especially. This is because having your own car is still an un-affordable luxury for many."

In addition to this, Chinese expectations of an office outing are very different. "Drawing the evening to a close with a nice meal and relaxed entertainment is unimaginable. Evenings are for partying. You might go playing laser tag, or to a karaoke bar, for example, with your colleagues. It doesn't matter if you have a good or a bad voice, everyone has a go. This type of thing is essential for team cohesion in China, and it really shouldn't be under-estimated."



Branch office of BBG Asia in Shanghai

Photo: BBG



Christian Fritz, Managing Director of BBG Asia Ltd. Photo: BBG

New Operations Manager Ronald Blach



BBG Asia also has a new Operations Manager, Ronald Blach, who will in future be in charge of Production, Service, Purchasing and Sales.

The 51-year-old brings with him eighteen years of experience in project management, including special machinery construction and the rationalization of production lines. The father-of-two has called China home since 2011. He moved to China with the Schaeffler Group to set up and lead a new project management department. At home, he enjoys cooking and is a passionate yachtsman and diver. He says that he rarely has enough time to pursue the latter two interests, however.

Ronald Blach, Operations Manager at BBG Asia. Photo: private

A visit to Changchun and Shanghai



A warm welcome for Christina Hartung and Madeleine Mayer at BBG Asia

Photo: BBGgg

After completing their training, Christina Hartung and Madeleine Mayer were keen to get to know BBG Asia for themselves. And in June of this year, they were given the opportunity to do just that.

On their two-week visit to China, they were tasked with carrying out a 6S analysis of the workstation layout. "This comprises six strategies for systematically organizing workstations and being able to work more effectively and in a more focused manner," explains Christina Hartung. "S6 in German stands for sort, tidy away, clean, standardize, maintain self-discipline and ensure safety." The pair presented their results in Changchun and Shanghai to representatives of the individual departments.

"Our Chinese colleagues were very receptive and interested in the suggestions for improvements," recalls Christina. "We found barely any pos-

sibilities for improvement in Changchun, where the method is already in use and known as the 5S analysis. We simply presented and explained the final point, 'Ensure safety'."

At the plant in Shanghai, the six strategies have been introduced for the first time. "Here, we have also come up with and introduced a checklist for staff and an organization system for the warehouse," explains Madeleine. Madeleine and Christina also found the friendly assistance from Managing Director Christian Fritz and his team very encouraging. "We felt thoroughly looked after and have brought back happy memories with us. We especially loved China's diverse food and the many noteworthy attractions that we went to visit together at the weekend. The Yu Garden especially and the Bund promenade were particularly impressive."

BBG'ers getting involved with the "Cycle to work" campaign

Cycling is good for you: It strengthens the muscles as well as the cardiovascular system, and it helps to reduce your risk of lifestyle-related illnesses such as high blood pressure and obesity. Leaving the car at home in a morning and instead climbing on your bike is an easy way to pack more exercise into your day. According to an online survey by the market research institute INSA-Consulere, one in six people in Germany cycles to work.

To encourage more people to take up cycling, the AOK and ADFC have again this year organized the Germany-wide campaign entitled "Cycle to work". Anyone choosing the healthy alternative from May to the end of August on at least 20 working days will not only be doing their own body good, but they can also win prizes, such as a city break or a high-quality bicycle saddle.

This year, BBG is entering the campaign for the first time - with 16 riders. "The feedback has been fantastic," says Katja Kohlscheen, who is organizing the campaign with Madeleine Mayer. "The AOK asked us directly whether we wanted to take part. We looked into it in more detail and realized it's a great idea."

As additional motivation for BBG employees, every participant has been given a water bottle, and the company is also raffling more prizes too. For most riders, however, the emphasis is more on enjoying the exercise rather than winning prizes.

Thick trousers for below-zero temperatures

Markus Richter has long since clocked up the required number of days on his bike. He actually comes to work on his bike every day. "It's not far, only about one and a half kilometers," he says. Even below-zero temperatures do not discourage him. "If I need to, I'll put thicker trousers on," he admits. For Richter, cycling is a good balance for office work: In his free time, he likes to go mountain-biking, plays basketball and enjoys swimming.

Just as fast as the car

Seasoned cyclist Thomas Schuster is also unperturbed by the weather. He travels a distance of around three and a half kilometers usually four times a day and takes his lunch break at home. It takes him about eight minutes each time, he reckons. "By car, I'd be on the road just as long, because I'd have to take a different route and then I'd run into considerably more traffic lights." Through his involvement with the campaign, he wants to show "that cycling is an option too" - and just takes a little bit of effort.

Missing the bike

Katja Kohlscheen also cycles, as part of team including Gerhard Hörtrich, Julia Feichtmeier, and Madeleine Mayer. "A maximum of four people can pool their

resources and share the 20 days between them," she explains. "I bought a second-hand bike especially for the campaign. Mine was stolen two years ago. It's only now that I'm realizing how much I've missed cycling."

16-kilometer trip

Walter Epple makes the longest journey by any of the BBG participants. He

covers 16 kilometers per trip, some of it on tarmacked roads and cycle paths, some of it through the woods. "The route is really lovely, and varied, with hills and valleys," he says. Around 30 years ago, it became his custom to cycle to work. "I really love it, and it keeps me fit." And when the roads are too icy in winter, he goes to the gym and uses the exercise bike. "I want to keep myself in shape."



The participants of the "Cycle to work" campaign

Photo: BBG

Fully automatic drilling operations thanks to "variable feature technology"

Each half of the mold of a foam tool can have between thirty and two hundred holes. In the past, all of the drill holes were programmed into the milling machine according to the drawing and the tools used for it were chosen manually. The disadvantages of this were the long machine downtimes and the high defect rate due to input errors. The introduction of the 2.5D module in the NC programming software from Tebis around six years ago was already a major leap, since it meant that the drawing stage and programming of the machine could be dispensed with. A reverse side, which previously took up to a week to process on the milling machine, has since been processed in around one and a half days, and without any errors.

Now there is a further new function, the "variable feature technology". Previously, each type of hole corresponded to an NC set with defined drilling tools. This led to problems if a particular type of drilling tool was not completely right for the job. If the hole was a little bit deeper than usual, for example, then the assigned drilling tool was too short and had to be replaced with a more suitable one. With the introduction of "variable feature technology", the software has been taking care of this on its own since February 2016 and uses a "variable" approach to determine the correct tool for a processing step every time. "With the new software extension, we are saving a huge amount of time," says Wolfgang Fleschhut delightedly.

Together with his colleagues Walter Epple and Kevin Brunner, he is responsible for the NC programming of component processing on the toolmaking machines. "For a complete upper or lower section, this can easily take

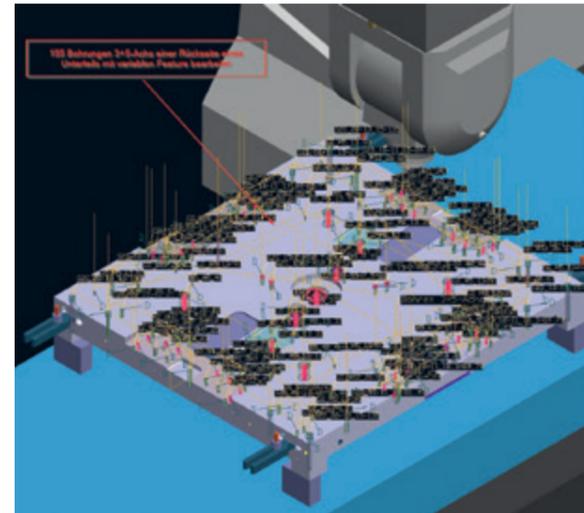
between two and five days," explains Fleschhut.

The reasons for procuring this software included not only the time savings, but also most importantly the automation and standardization of programming sequences for drill hole processing, which are a major help. Wolfgang Fleschhut and his colleagues are very happy with the results: "Since the reverse sides of components are primarily made up of simple pockets and lots of drill holes, we no longer need to get involved with them at all. The software does it all itself!"

The design department supplies the NC programming department with the CAD data sets for the component, which it must then program in for the component to be processed. The Tebis software then scans this, automatically capturing around ninety percent

of all drill holes. The "variable feature technology" recognizes their diameter, depth, and the color designating the drill hole's function. The blue color stands for fits, the yellow one stands for metric threads and the dark-brown one stands for inch threads. The program then independently calculates which processing sequences are best performed by which tool.

Up until January, all of the calculations had to be made by the programmer and the choice of tools had to be made by hand. Potential tool collisions also then had to be ruled out using simulations, which could be a laborious process. The software now takes care of this collision check entirely automatically. "It gives us the certainty we need to be able to process components without any risk of collision ever," explains Wolfgang Fleschhut.



Reverse of a mold half with up to two hundred drill holes

Photo: BBG



Wolfgang Fleschhut talks enthusiastically about the introduction of "variable feature technology"

Photo: BBG

Tools in the pool

The software now also optimizes tool use during processing, so that production can take place more quickly. The 900 or so tools are divided up into three groups, also known as pools. The most important forty tools belong to pool 1 and are available at all of BBG's 3 and 5-axis milling centers. The tools from pool 2 are not available at every machine, but are instead stored centrally in the tool cabinet. The largest group, comprising around 700 tools, is pool 3. These are kept in the same location and must also be put together from multiple parts. "Creating the pools was another part of the preparations which took up the most time," recalls Wolfgang. He spent a week with an employee from Tebis and then spent the same amount of time setting up the variable features and NC sets, adapting them and uploading them to the system. His efforts paid off, however: "The hard work was worth it."

New staff in Mindelheim

BBG idea is welcoming no fewer than five new members of staff this summer.

The new Sales and Project Manager **Heiko Kunze**, who lists sailing and gliding as his hobbies, joins us from Mauerstetten. The 37-year-old most enjoys spending time with his family and his one-year-old daughter, however.

The milling shop has two new employees: **Christian Reiber** from Eppishausen and **Peter Beckenbauer**.



Christian Reiber

Photo: BBG



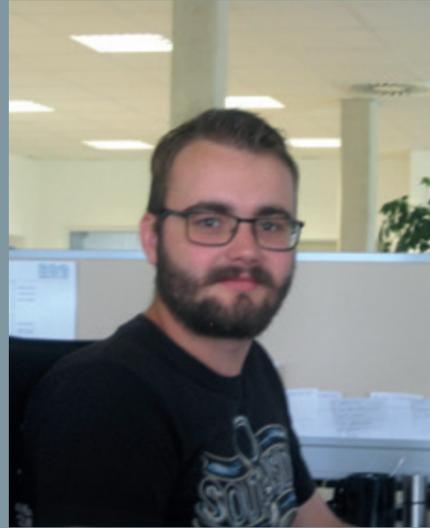
Peter Beckenbauer

Photo: BBG

27-year-old Christian is a trained precision engineer and is attending master school alongside his work. In his free time, he does double duty, working both with the fire department and the gun club.

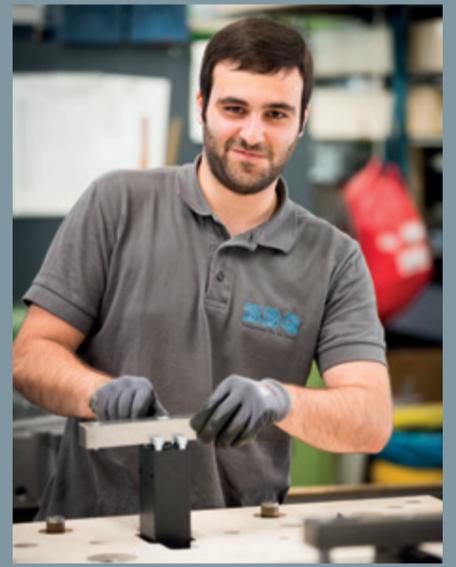
Machine construction engineer Peter Beckenbauer has already traveled to 43 countries on his motorbike. The 31-year-old always documents his journeys with his camera and is now the proud owner of an NSU Max vintage model. His wife shares his passion for motorbikes.

Florian Vater is almost an old hand at BBG, having already worked as a graduate student on the BBgo project. The 23-year-old has now been taken on permanently. Since completing his trainee program in tool assembly, the graduate in machine construction engineering has been working in tool construction.



Florian Vater

Photo: BBG



Dominik Sontheimer

Photo: BBG

24-year-old **Dominik Sontheimer**, from Mindelheim, was recently appointed as a specialist in tool construction. The trained cutting tool engineer has a passion for fast cars. In his spare time, he loves working on old cars.

BBgo: Relief for all areas of work

After just over a year, the BBgo project is now nearing completion. During this time, the team led by Richard Ortloff, Head of the Machine Construction Center of Excellence, has established a new configuration and assembly concept for the BFT-P V2. The implementation of this concept is intended to make the production of the variable mold carrier system more economical and efficient. A clearly laid-out variant configurator with automatic bill of materials generation and consideration of pre-fabricated assemblies makes the work of everyone involved easier and improves the flow of information. "The final tests will continue until the end of September," explains designer Florian Vater. From October onwards, all of the orders for the BFT-P V2 will run via the new system, which he has developed in collaboration with the project team led by Richard Ortloff.

Offer and order bill of materials created automatically

At the heart of BBgo is the configurator in the ERP system already mentioned, which Sales can use to enter and save all of the key customer requirements and information in a straightforward manner. Around 90 questions guide users through the selection process, with all answer options being listed and conveniently available to click. "It may sound very extensive, but in practice not all of the points ever actually need to be worked through," explains Vater. This is because

he has programmed the configurator so that the default values for the order of a BFT-P V2 are already pre-set. Only variables that differ need to be selected and modified by Sales. Using the information provided, the program then generates the offer and bill of materials automatically.

130 created assemblies

Over 130 partially pre-fabricated assemblies, which the project team has developed especially for the various variations of the mold carrier, also provide a better structure. Creating these from the various components and elements was one of the most laborious tasks, says the designer, who already began working on the project when he was a graduate student and who has now been taken on permanently at BBG. "We also hope to reduce the amount of storage space we needed because the relevant individual parts can be ordered just in time for the start of construction of the individual assemblies. This means that parts that are not required until later do not take up any room and the space available can be used for other things."

More time for new developments and optimizations

Around 20 to 25 mold carrier systems of the BFT-P V2 type are sold each year. "The aim is to capture more than 80 percent of it via the configuration system," says Vater, with the rest being special models. For the design department, this means that, instead of processing all orders like previously and preparing the requirements and data for the individual sectors, the design department will in future only get involved with special equipment requests from the customer. This gives the design department more time for new developments and optimizations.

"Just how sizable the time and cost savings will be, we will only find out in a few months," says the designer cautiously. And even the follow-on project that has already kicked off will be able to make use of the information gathered: A similar configuration system is being created for the BFT-P V7, he announces. Working student Stephan Barton has been assigned to this role and is actively involved with the project. "He can adopt parts of the configurator and assemblies and thereby build on our work," reports Vater.

And the winner is... Webasto Supplier Award for BBG North America

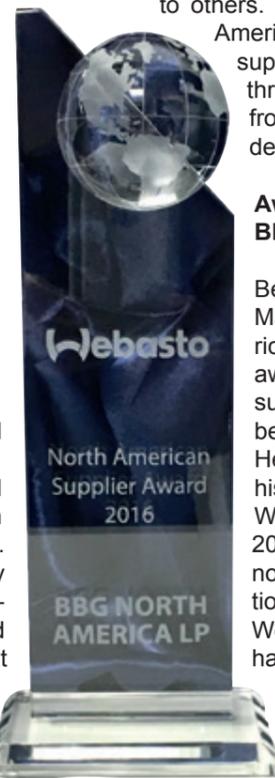
BBG North America has won the North America Supplier Award 2016 from the automotive supplier firm Webasto. The ceremony was held at the start of July on Suppliers Day at Meadow Brook Hall at Webasto Roof Systems' site in Rochester Hills, Michigan. Around 200 suppliers of series parts, tools, machinery and systems were invited. Two of them received the award. BBG supplies to numerous international production sites owned by the Webasto Group, including tools for encapsulating glass car roofs with polyurethane foam (PUR) and mold carrier systems. General Manager Bernhard Satzger accepted the award on behalf of BBG North America. The award was presented by Marc Majors, Purchasing Manager at Webasto. In his award speech, he explained that Webasto especially values BBG's innovative products and expertise that the PUR and composites specialist provides in the development of sliding glass roofs. He also praised the BBG Group's international presence and comprehensive service and high-

lighted the two companies' longstanding global partnership as an example to others. Before founding its North America subsidiary, BBG had supplied its client Webasto through a local sales partner from its headquarters in Mindelheim.

Award for all BBG'ers

Bernhard Satzger, General Manager of BBG North America, had not expected the award: "It comes as a huge surprise, since we have only been here for two years." He passed on the praise to his BBG colleagues: "The Webasto Supplier Award 2016 is a very special acknowledgment and recognition of BBG's status as a Webasto partner. This award has been earned by all of the group's employees. It serves both as motivation for our future collaboration and as an incentive for us to continue

giving our best, consolidating the USA as a production location and expanding it further."



(From left to right) Jan Henning Mehlfeldt (Executive Vice President Purchasing, Webasto Group), Christine Cheminay (Director Global Indirect Purchasing, Webasto Group), Bernhard Satzger (General Manager, BBG North America LP), Alan Ross (Production Coordinator, BBG North America LP) Jürgen Viereck (Vice President Purchasing & Supplier Quality North America, Webasto Group), Marc Majors (Purchasing Manager, Webasto Group) Photo: BBG

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