

## Magazine for customers, employees and partners



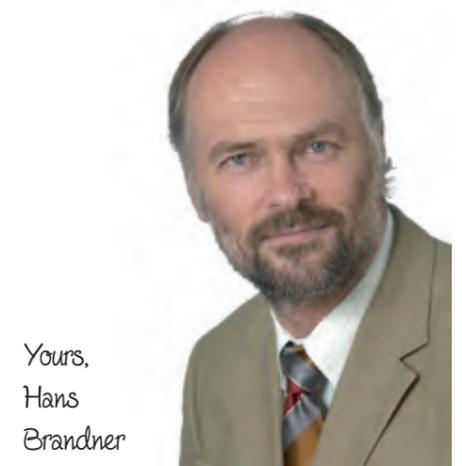
From apprentice to boss - everyone celebrating the completion of the 100th BFT-P V2

Photo: BBG

Dear readers,  
I would like to thank all employees for their tireless efforts and all the overtime that they have worked. We were able to win several major contracts in 2015 and, hopefully, we were also able to meet the high expectations of our customers.  
This satisfying development should enable us to significantly exceed our rather modest sales target for this year. And the order situation for the first quarter of 2016 is very positive indeed. However, there is another piece of good news to relate: Our major customer Webasto has extended the framework contract for the exclusive delivery of mold carriers until 2018.  
I would also like to extend my special thanks to our trainees whose self-constructed model of a production facility for the manufacture of composite components contributed to the success of our trade show appearance at Composites in Stuttgart.

The article „From the age pyramid to a top-heavy trapezoid“ attempts to explain the changes in the age structure that are affecting our daily work routine. A means to mitigate the consequence of this demographic change is the assumption of responsibility by young employees. This edition contains three examples.  
I wish you all Happy Holidays and have fun reading the BBG idea.

I wish you all the best.



Yours,  
Hans  
Brandner

### In this edition

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### The 100th BFT-P V2: Anniversary and contract extension

At the beginning of November, BBG delivered its 100th BFT-P V2 high speed mold carrier system. And almost at the same time, we extended our contract with our long-term partner Webasto, which is the world leader for convertible roof systems, sunroofs and panorama sunroofs, as well as parking heaters. This exclusive contract, which was originally signed in 2011, deals with the configured variant specially for the encapsulation of car windows with polyurethane in the mold carrier system and has been extended until 2018. Webasto uses the electrically-powered BFT-P V2 in all European, Asian and American plants.  
This sales hit is a customer-specific variant of the BFT-P standard model introduced in 2008. BBG has made a number of customer-specific modifications in cooperation with Webasto and thus this mold carrier system is optimized for the encapsulation of glass roofs for sunroofs with polyurethane.

#### High speed: New best time for the drying cycle

The BFT-P V2 is, above all, characterized by its robust, reliable and low-maintenance drive units, which help to achieve high production speeds. An example of the wide dynamic range: The entire process of opening and closing, including the pivoting of the upper and lower mold carrier plates takes less than fifteen seconds. Thus BBG has set a new best time for the drying cycle.

#### Well suited for automated production

The BFT-P V2 is highly compatible for use in automated production systems.

#### Pleasant operation

The system is very energy-efficient due to its heavy load compensation for the parallel stroke and it is also easy to operate thanks to its user-friendly ergonomics.

100 BFT-P V2		BBG		100 BFT-P V2	
Kompetenz bis ins Detail					
BBG GmbH & Co. KG, Heimenegger Weg 12, D-87719 Mindelheim					
Type of machine	BFT-P V2 5x11	Closing force max.	400 kN	U	400 VAC
Machine-no.	008471	Tear force max.	50 kN	I	50 Hz
Fabrication	11-2016	Tool weight max. (lower part)	2500 kg	Number of phase	3/N/PE
opening width min.	780±1 mm	Tool weight max. (upper part)	1500 kg	P	50 kW
opening width max.	812 mm	Weight	6300 kg	p	5-8 bar

The machine table for the anniversary

Photo: BBG

## At Composites in Stuttgart

After 2012, BBG was again present with a trade fair stand at this year's Composites Europe in Stuttgart from September 22 to 24. Managing Director Hans Brandner reported that there was a great deal of interest from customers from the aviation industry. He gives a positive summary of the event: "We are quite satisfied with the visitor response. We had a lot of very interesting contacts and conversations."

BBG presented itself at its trade fair stand as a developer and manufacturer of tools and equipment for the economical series production of composite components. Exhibits made from fiber-plastic components were the focus, giving visitors an overview of the wide range of applications available.

### Lots of interest from the aviation industry

A focus of the trade fair was aircraft construction. The company showca-

sed exhibits from various projects to impressively highlight BBG's experience as a partner for the aviation industry. This included, among others: a window frame made from carbon-fiber reinforced plastic for the Airbus A350, for which BBG developed and built the in mold and demold station as well as the BFT-C mold carrier system for its production.

There was also a lot of attention garnered by the 1:10 scale model production facility built by the trainees with examples of the production process of composite components (see separate report).

In addition, the exhibited models of mold carrier systems in a scale of 1:20 were also a real eye catcher. These models gave visitors a real sense of the ergonomic design, the optimized kinematics and the easy accessibility of these machines.



BBG at Composites Europe in Stuttgart

Photo: Behrendt and Rausch

## A great deal of praise and respect for the production facility model

A total of 1300 hours of work went into the model of a composite component production facility that amazed numerous visitors at the BBG trade fair stand at Composites in Stuttgart. The majority of the work was done by Johanna Höbel and Jonas Schobeß who worked on it from February to September. Both are 20 years old and in their fourth year of training as tool engineers. Training Manager Johannes Böck helped out with the project in both word and deed like many other colleges as well. „This kind

of a project is a major challenge for all involved and when done in a professional manner also serves as an asset for both the company and the trainees. Project work gives trainees a look at many fields of activity within the company, which goes beyond the narrowly defined content of their training," explains Böck. The projection facility shows a simplified version of a possible production process for composite components. The facility consists of the swiveling model of an in mold station for equipping and prehea-

on all the work ourselves from the overall design to the drawing of the individual parts. We selected and requested the material, manufactured individual parts and put everything together including the automation. That's what I liked in particular. It was also great that we were allowed to present our project at the trade fair," says Johanna Höbel regarding her experience.

### Learned a lot

Jonas Schobeß agrees: „We learned a lot from so many different areas. Independent work, scheduling and work planning, independent implementation of specifications – all new experiences for us. It was great that we were able to keep to schedule. It helped that we planned a time buffer and we sure did need it.“ His comrade-in-arms is also pleased with her progress in the use of the design software: „We got an introduction at school, but that was too short. Now that I have gotten some intensive training, I am much better and can work twice as fast as before.“

Overcoming the difficulties that presented themselves was also part of the learning process. „We had to crawl around the base unit of the model for days on end looking for an error when reinforcing the cylinder package," remembers Höbel. „That took us two, three weeks.“ Her project manager explains: „Theoreti-

cally, it should have worked, but in reality it didn't work the first time around.“ Both of them then decided to seek the help of experienced colleagues who then helped to resolve the problem.

### Stress at the trade fair

It was really stressful at the BBG stand in Stuttgart on the second day of Composites when a metal pin sheared off of the model and one of the stations stopped functioning. „The system functioned seamlessly on the first day of the trade fair," says Schobeß. Höbel was supposed to relieve him at the stand on Wednesday, but first repair work was necessary, according to the trainee: „We weren't prepared for that at all, but we reacted quickly. We drove together to a home improvement store, bought a suitable replacement part and after two hours our model facility was again fully operational.“

To the joy of the visitors who frequently stood there and asked both of them regarding who had build the model and how did it work. „There was a lot of praise and recognition for us," reports Schobeß proudly. Now trainees from the third year of training want to work on the model and optimize it. We've got ideas to spare, according to Johanna Höbel: „A base cabinet made from Plexiglas would be a good idea. Then the visitors could see the mechanism.“



Jonas Schobeß and Johanna Höbel are really proud of the results of their work.

Photo: Auchkomm

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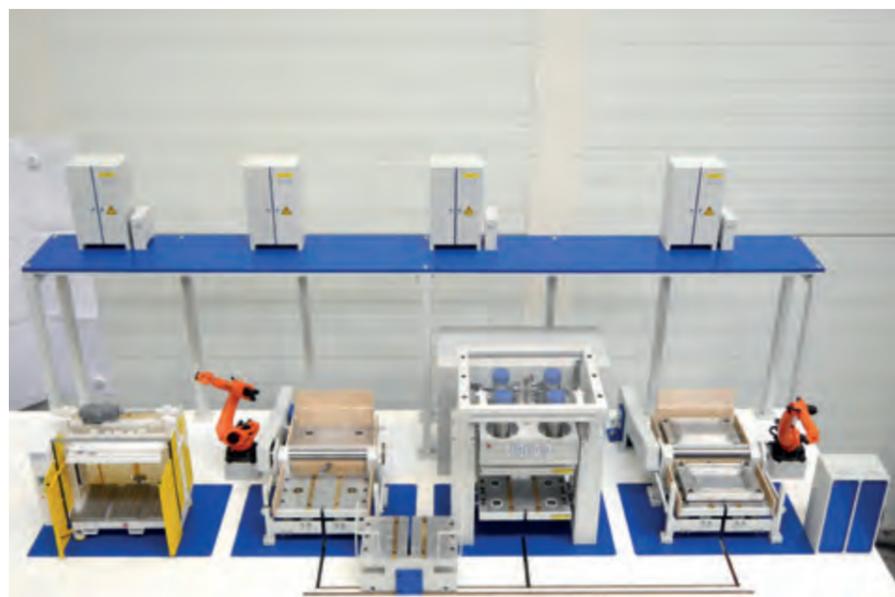
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### Next issue

April 4, 2016

ting the tool, the functional reproduction of the BFT-R mold carrier system that holds the tool together for the material reaction and also the swiveling model of a demold station in which the tool can be opened and the finished component removed. The tool is automatically moved back and forth between these three named work stations via a transport trolley. Robot gripper arms and a model of the BFT-P V6 cooling mold carrier system show how the cooling process can be designed for a component. The entire production facility is driven electro-pneumatically. A brief video can be viewed on the BBG website at www.bbg-mbh.com.

For Johanna Höbel and Jonas Schobeß, this was the first time that they were responsible for such a comprehensive project from beginning to end. „We took



Model of a production facility in a scale of 1:10

Photo: BBG

## The 1989/1990 generation takes over

### Florian Borchert: From machine assembly to tool design

Florian Borchert has been involved in the assembly of nearly every third BFT-P V2 of the one hundred delivered so far. The trained industrial engineer and carpenter was in BBG's mechanical engineering division for almost five years and then he decided to get advanced training as a mechanical engineering technician: „I always wanted to get more training and I have also been interested in working as a designer for a long time now. The internal offer for the designer position in tool construction was the right incentive to take action.“

The advanced training took place at the Rudolf-Diesel-Technikum in Augsburg from August 2013 to July 2015. Along with the government financial assistance for master craftsmen trainees, the 26-year-old also received financial support from BBG during this time. For his project work during his technician training, he developed a parts list structure suitable for the assembly of the BFT-P V2. With this work, he made a significant contribution to the BBgo project.

„Sitting and studying the entire day was a big adjustment after working for such



Florian Borchert "studies" design of encapsulation tools. Photo: Auchkomm

a long time. It was a good experience in any case. One that I would recommend to anyone," says Borchert summarizing his time at the technical school, which he left with a final grade of 2.0.

Back in Mindelheim, he began his training in tool design at the start of October. Here he completed a one-week training course for the CATIA design software before he took over his new duties as a tool designer.

### Ulrich Preisinger: From team member to team manager

Ulrich Preisinger, who is the same age as Florian Borchert, became section manager for assembly in mechanical engineering after passing his examination for the master craftsman's certificate. The trained industrial engineer started as an installer in the department in July 2011. Now he heads a team of five employees who are all significantly older than him and with more work experience. The age difference is not a problem according to Preisinger: „We all work really well together. I feel respected by everyone.“ When questions need to be answered, then he discusses them together with his colleagues: „In this way, we can integrate all of their experiences and assessments so that the team profits from the know-how of every individual.“

The time from when he started in the team and then took over as manager included several years of work as well as twelve months of full-time study at the master school, from which he graduated at the end of 2014. This advanced training wasn't a walk in the park either because after lessons during the day, he had to study what was learned at night. He especially liked the topic of human resources, which was covered extensively. His experiences were consistently positive: „I loved going to class because I knew that I would learn something new every day. The master school

is definitely the right place for those who want to learn.“

His motivation: „I have always wanted to get my master's certificate because I don't shy away from responsibility.“



Together is the best way, Ulrich Preisinger and Jean-Joseph Biagui. Photo: Auchkomm

### Sebastian Barton: Graduate engineer on the sales team

Sebastian Barton is one year younger than Borchert and Preisinger. He just graduated with his mechanical engineering degree in October and started as a sales and project manager trainee at the beginning of November. Before he started, Barton, who has been working as a student trainee in the company since 2011, helped out for four weeks in machine assembly because there was a lot of work to do there.

What are his expectations for his new position? „An interesting, responsible and demanding job where I will be coming into contact with many people from different areas. It is exciting getting to know the processes in sales and coordinating projects. I am curious to learn a lot and get some experience.“

The 25-year-old completed an appren-

ticeship as a precision mechanic in tool design in Landsberg after getting his secondary school certificate. Then he went to the higher vocational school to get his advanced technical college entrance qualification.

„Once I finished my apprenticeship, I decided that I wanted to study further and that I had a keen theoretical interest in technology," says Barton describing his decision to study.

His diploma thesis unifies theory with practice in the parent company. He determined characteristics that should be tested for newly developed electric mold carriers and developed a system with which these tests can be standardized. At BBG, these systematic tests will be performed as standard for all newly developed electric mold carriers and then recorded in a test report also developed by Sebastian Barton himself. In his mid-twenties, Barton is not so sure that his theoretical training is at an end: "I can certainly picture myself studying management in the next five years, for example, getting a Master of Business Administration (MBA)." When, where and how is still an open question: "Right now I am focusing on my current challenges."



Sebastian Barton looks forward to new challenges. Photo: Auchkomm

## The demographic change: From age pyramid to top-heavy trapezoid

The age structure for Germans is changing and that is already having a major impact. For example, the population of Germany will be shrinking from the current approx. 82 million to approx. 65 to 72 million by 2060 according to the Demographie Netzwerk e.V. (ddn), a non-profit network of more than 400 companies and institutions. In addition, people are getting older: the average age over the

estimations, the Federal Statistical Office forecasts that approx. 200,000 people immigrate annually.

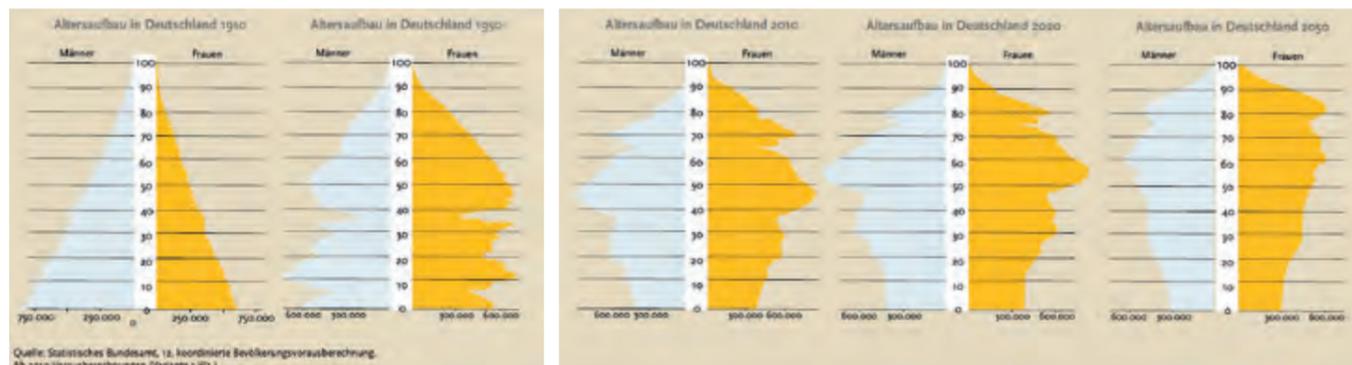
The increasing average age is given shape via the proverbial age pyramid that comes from the year 1910. By 2050, the age structure will have changed so much that the pyramid will begin to look more and more like a top-heavy trapezoid.

four out of ten people in the labor force will be from the age group between 50 and 65.

We are already starting to feel the specific effects of this: Currently more than 40 percent of small and medium-sized business are already having difficulties finding employees with completed training or a degree. We are talking about companies here with a work-

Approximately a fourth of the workforce at BBG is currently over the age of 50. They still have a maximum of 17 years of work ahead of them and can use this time to gradually pass on their huge amount of professional experience. The continual growth of the company over the past several years has also led to the fact the BBG is reinforced with personnel in all departments. More younger employees are coming in to which the knowledge of experienced employees can be passed on. BBG has enacted several measures to actively support this change:

- BBG has continually increased the number of trainees over the last few years to increase the loyalty of these younger employees to the company. Currently, 14 young people are being trained at BBG in 4 different professions.
- At the same time, younger employees are being encouraged to take on more responsibility (see article „The 1989/1990 generation takes over“).
- Further training, advanced training and qualification measures are being supported and appropriate promotion opportunities are being offered.
- Individual part-time models are being offered to improve the reconciliation of work and family.



The demographic change – numbers, dates and facts, 2nd expanded edition October 2014

Publisher: ddn, Das Demographie Netzwerk, Dortmund

same time period will increase to over 50. Then people over 65 will make up a good third of the population. At the same time, the group of working age people (ages 20 to 65) will shrink from the current approx. 50 million. By 2020, this decrease will have a noticeable effect, and ten years later, there will only be 42 to 43 million people of working age. By all

### The consequences: More older employees, more worries about recruitment.

This population change has far-reaching consequences for the daily work routine: The share of older employees increases while the number of younger employees decreases. This means that between 2017 and 2024 approx.

force between 50 and 249 employees. The greatest obstacles are the lack of qualifications and too few candidates. More than half of the companies named have also had problems finding suitable trainees. And this situation will only get worse.

### What is BBG doing?

## BBGo: An enhanced system makes life easier

Since Richard Ortloff took over as head of the mechanical engineering division at BBG in 2014, he has often thought about the opportunities to design the production of mold carrier systems more economically via a pre-assembly of components. His impression was that there are „a number of opportunities for increasing efficiency because the 100th BFT-P V2 is still being produced using the same processes as the prototype. There are a number of standard components and numerous equipment options that have to be compiled with a new parts list every time and then transferred to the ERP system.“ Up until now, the attempt was made to simplify the work via variant parts lists. However, the maintenance of these lists requires a high degree of insider knowledge and this effort only increases enormously with each additional variant.

With management, Ortloff was preaching to the choir with his idea. It was quickly determined that something had to be done, but the question was „what.“ During a workshop at the beginning of May, the points that had to be improved and simplified were jointly defined. Participants quickly got a picture that accurately described the current situation, according to Ortloff: „Up until now our processes have been like a fast train loaded with information, which could move up to eighty percent forwards in production, but still had to stop at the Design train station so that all departments could prepare the various requirements and data.“ This causes valuable time to be lost because most of the information is already completely available at the latest with the assignment of the contract. The project called BBGo was initiated at the workshop to shorten processes and bring information to the right locations without any detours.

### Configurator for the mold carrier system

A well-known example showing how it is possible to standardize the equipment variants of a product and efficiently display them is the vehicle configurator for cars on the Internet. „We introduced a similar system for the BFT-P V2“, says

Ortloff, „the only difference is that the buyer doesn't put together the desired mold carrier model himself on the BBG website, but rather the sales manager enters all options directly into the ERP system.“ The advantage of this is that complete data are available from the very start of the contract for all participants, from sales, assembly to installation and commissioning.

With this kind of system, the work processes are simplified at all levels. Thus sales can obtain all required information from the very start via a standardized list of questions. When this is completed one has a complete overview in hand with which an offer can be easily created. In addition, the entered information can also be used in the form of binding documents for design, assembly and installation.

### Approx. 200 equipment options

Ortloff gives a few examples to help illustrate the concept: „When ordering a mold carrier, the question of whether a hydraulic unit is required for tool functions comes up automatically. And during configuration, sales is reminded to clarify whether or not a forklift will be available months later at the installation site or will BBG need to organize this.“

However, there is still a lot to do by the time of implementation. Ortloff was able to win industrial engineering student Patrick Brunner for support in this project. Brunner's job was to collect and evaluate the required information together with all parties concerned. The result of the meetings with design, electronics and mechanics was an overview of more than two hundred equipment options that are possible for the BFT-P V2. „In addition, we also took the opportunity to standardize the part descriptions in German and English, before that there was no standardization,“ says Ortloff.

### Eighty percent of all customer wishes can be standardized

Finally, Brunner created a flow chart that contained all possible options which leads the user from one question to the next. At the same time, this also serves as a template for programming the variant configurator in the ERP system, from which the first parts should be finished by the end of the year.

Approx. eighty percent of all customer wishes correspond to BFT-P V2 orders and thus can be standardized. We hope that the use of the variant generator will ensure significant simplification and standardization for our order processing. We will also gain valuable time because our purchasing department will receive the requirements for parts procurement right after the contract is assigned,“ explains the project manager.

Mechanical engineering student Florian Vater has also been working on the BBGo project since mid October. His job is to adjust the components resulting from the option packages so that they can be implemented in the system and pre-assembled if required. Ortloff believes that everything should be up and running by the end of May. After a brief pause, he adds something else: „If everything goes well, we will also be setting up the system for other mold carrier systems.“

## Four new trainees

Four new trainees started their professional careers at BBG at the beginning of September.

**Niklas Steiger**, 16, wants to be a tool engineer. „I have always wanted to learn about the metal working profession and a family-owned company is more to my liking than a large industrial company,“ he says explaining his choice of apprenticeship company. So far he is satisfied because the training is a lot of fun. In his free time, he plays soccer, rides his bike, swims and belongs to a gun club.

**Thomas Aufmuth**, who is the same age, wants to become an industrial engineer. His desired career path has been strengthened by various internships and trial work positions. His most important hobby is soccer. As a center midfielder for FSV Dirlwang, he certainly gets his money's worth.

**Manuel Becker** is just 20-years-old and can already look back on a completed training as a bank officer. „Everything was good for the first six months, but I kept thinking that this is just not my world,“ he remembers. He then came to

work at BBG on a trial basis because he was also interested in the metal working profession when he was in school. With success: „I really liked it here.“ The sports marksman does youth work for the volunteer fire department. He also has a respiratory protection qualification for special firefighting operations.

**Laura Ungerer**, 16, is the fourth of the bunch. She is studying to become an industrial engineer. Along with inline skating in summer and ice skating in winter, parkour is the favorite leisure activity of this athletic Oberneufnacher. Parkour is a training discipline that uses movement to overcome obstacles without assistive equipment.



Laura Ungerer Photo: BBG



Niklas Steiger, Thomas Aufmuth and Manuel Becker at the tube pressing unit

Photo: Auchkomm

## BBG Asia arises from P-PEQ

The name „P-PEQ“ is now a thing of the past. The Chinese subsidiary assumed the name BBG Asia on September 1. General Manager Christian Fritz gives two reasons for the name change: The requirement for being responsible for the entire continent of Asia and the empha-

sis of belonging to the international BBG Group. BBG Asia currently has approx. 55 employees, of which approx. 50 are employed at the headquarters in Changchun. The sales and service team of the other subsidiary in Shanghai consists of an additional five employees.

## Development work at BBG North America

Currently, the installation and commissioning of mold carrier systems in the US is still being taken care of by employees from Mindelheim; however, with the founding of BBG North America, we've set the groundwork for this to change. This subsidiary will be responsible in the coming years for promoting market development in the US, Canada and Mexico.

Bernhard Satzger, the first general manager who established the American BBG location, is intensively searching for suitable employees. BBG is also looking to the German labor market for suitable candidates who would be willing

to work and live in the US either for a limited time or permanently because it is very difficult to find qualified applicants in the US.

The current, sole production employee in Oxford, Nathan DeBons, has just finished his first training in the milling shop in Mindelheim while gaining an impression of the required precision and the required know-how. „I hope that other BBG North America employees will soon get the chance to train in Mindelheim so that we can quickly ramp up the Oxford location into an efficient service and production location,“ explains Satzger.



The BBGo project is intended to incorporate the order directly into production. Photo: BBG