

SOLUTIONS.

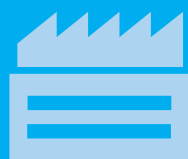
The company magazine of the Blumenbecker Group





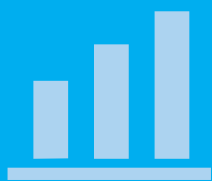
1326

STAFF



19

COMPANIES



205

MILLION € TURNOVER

A STRONG **GROUP**

With a wide range of products and services, the Blumenbecker Group assists you in achieving your goals. All of our activities, including the automation of plants and machinery, the development of innovative robotics solutions, the supply of products from C parts to machine tools, the inspection, maintenance and repair of your plants, and special-purpose machine building, are supplied from a single source – wherever you are in the world.

WE DELIVER SOLUTIONS

Surviving in today's globally competitive market means producing goods in a way that is flexible, reliable, fast and cost-effective. As an **international industry** service provider we have made it our mission to support our customers in this in the best possible way. We see ourselves as **a partner to our clients** and base our approach on intensive dialogue in line with the company philosophy: **listening carefully, finding the right answers and putting these into practice reliably and on-time.**



9

COUNTRIES



>30

LOCATIONS

B.

The figures are from 2019.

EDITORIAL



Dear customers and partners,

Welcome to this the third edition of our company magazine SOLUTIONS.

Those who know us know that we at Blumenbecker like to share knowledge. And we especially like sharing it with our customers. Our aim is to find individual answers to complex challenges. We believe that this can only be done by working closely together in a spirit of mutual trust and understanding. This is our way of developing solutions that make the difference. Take, for example, the robotics system developed for Tatramat, the Slovakian subsidiary of the Stiebel Eltron Group, that has provided an efficient and safe solution for a complicated new welding process (page 38). Or our ›smart weightlifters‹, which are in effect nine crane systems designed to perform highly complex operations for the series production of acid-resistant battery boxes, technology that will provide the technical basis for a Europe-wide expansion drive. Sometimes it seems that with Blumenbecker the wonders never cease (page 32).

Project work with and on behalf of our customers frequently takes us beyond the borders of Europe – to the USA, to India and even to China. And so it was that in 2003, in a move designed to support a major customer of long standing, we set up our first China-based company in the city of Shanghai. How this became a success story, what part the city of Shanghai played in it and why customers trust in quality ›made by Blumenbecker‹ can be read from page 18 onwards.

When it comes to treading new paths, the home country is still very much at the heart of things. And if you want to know what paperless switchgear production 4.0 is all about you need look no further than the Blumenbecker Automatisierungstechnik headquarters in Beckum (page 06).

We hope that these insights into the world of Blumenbecker will be a source of inspiration. Enjoy the read!


Olaf Lingnau


Richard Mayer


Harald Golombek

CONTENT



[_02 Profile](#)

[_04 Editorial](#)

[_06 The genius of digital](#)

Digitisation in
switchgear production

[_12 > Smart weightlifters <](#)

9 crane systems for
acid-resistant battery box production



[_18 On top of the world](#)

Shanghai – China's boom town

[_22 Where high-speed meets history](#)

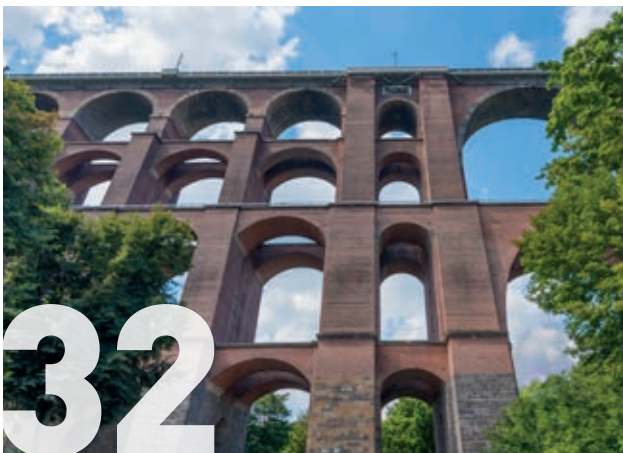
Blumenbecker in China

[_26 CNC meets manual machining](#)

7 special machines for training
and education

[_32 Safe and sound](#)

The Göltzsch Viaduct in
Northern Vogtland



[_38 Perfect seams for hot water](#)

New robot welding system
for Tatramat

[_42 Maintenance Customer Portal](#)

Cover photo:

Digital instead of analogue – Nelson Schröter in the switchgear production

Digitisation in
switchgear production

THE GENIUS OF DIGITAL

Up until a few years ago, the workflows at the Blumenbecker switchgear production plant were still all-analog operations. The automation technology specialist then launched a comprehensive digitisation offensive. With impressive results and opportunities – for company and clients alike.

It is no simple matter to produce machine control systems in series beginning with production batch one. Practically every switchgear unit made by Blumenbecker is one of a kind, with its special design drawings, consignment notes, parts lists, assembly diagrams, wiring lists and other accompanying documents. For decades it has been standard practice to have all this vital information available in paper form only.





*Appreciate the benefits
of digital solutions:
Florian Sontowski (left)
and Nelson Schröter
in the modern production
centre in Beckum*



Intelligent data instead of paper

The idea of banishing paper of any kind from the production process has been part of Blumenbecker's thinking for quite some time. »When it came to adherence to delivery dates and throughput times, the analog production process was no longer sustainable for us«, says Florian Sontowski, Project Manager Innovation Process Management, adding in retrospect: »If a customer wanted to change something, everyone involved in the project had to be notified individually and the part lists had to be amended by hand.« And this did not always fit in with the »just-in-time« system. For the production teams, and especially the technol-

ogy-minded »generation Y«, this was a very unsatisfactory situation. Nelson Schröter is one of them. The electronics engineering technician, who completed his training at Blumenbecker, stands not far from Sontowski in the modern machining centre at the Beckum plant and recalls how things used to be: »Work with the XXL stacks of paper consumed a lot of time and nerves, for example when you had to find a single component on pages and pages of assembly diagrams. And then there was all that mass of paper that was simply to end up as waste. I was therefore overjoyed when the digitisation drive kicked in.«



The route to switchgear production 4.0

When setting up the new production shop, Blumenbecker also took the opportunity to digitise the entire workflow of the switchgear production plant. This challenging task encompassed many different function areas, from material logistics through to export control. The aim was to take the data obtained during the engineering phase and to transfer this to the production process as far as possible without the need for paper. To this end, the innovation management team around Sontowski developed special software solutions, such as the Easy Intelligence Process Software (EIP for short) that could process data from PDF documents and CAD drawings and even ERP data such as parts lists and job information. This software was able to collect all the planning and production data, combine the information and process it into interactive working instructions. All the data were to be managed and allocated centrally.

Schröter and Sontowski have just arrived at the sheet metal processing centre. They both look on as a colleague at the computer screen gets an overview of the parts he has to fabricate. »We now call up our »to dos« and all the other information on the computer, tablet or handheld device and are also taken through the work step by step«, explains Schröter. »Any changes are loaded centrally into the system«, continues Sontowski, »so that the entire team has the updated dataset immediately to hand.« In order to further optimise the process, any faults occurring are detected by a fault management system. »And our customers win out too. They now have more leeway right through into the production stage«, adds Sontowski.

Close interaction between the individual, the workplace and the software

The work is supported not just by tablets and hand-held devices but also by video data projectors. These are the tools of choice, for example, when the functional groups are being created. In place of the laborious searches through paper lists, the individual components can now be sorted and picked in the almost play-time-like setting of the put-to-light process. Schröter stands by a work table with a computer screen. Above him is a digital projector and alongside him a picking trolley. He takes an article from the trolley, scans it in and immediately gets a light signal that tells him to which function group it belongs and on what part of the work table it has to be placed.

Even wiring diagrams are going digital

The Innovation Process Management Team has also worked flat out to make working with PDF wiring diagrams more digital. Up until now, handwritten changes that had to be imported back into the ECAD system for complete documentation were searched for manually in the wiring diagram. That took time. With the software skemdit, the team has developed a solution that exports changes at the push of a button - completely, digitally and traceably.

Digital identification optimises the customer processes

One station further on and the function groups are already installed. Schröter shows us the inside of a fully equipped switch cabinet. »At Blumenbecker, all the components have a QR code with an identification number. This makes each component non-interchangeable, with the result that it can be clearly identified and tracked throughout its entire service life. And this has a number of advantages for our customers and also for subsequent users of the equipment.« By using the newly developed app EIP.mobile, users can retrieve all the information and documentation they need about the equipment and the installed components (see blue box). »With a few clicks, they are quickly able to filter out the information they are looking for«, Schröter continues. This not only simplifies the troubleshooting process but also makes it much easier to order up spare parts.

Support
by scan
and light spot
when installing
components

Function
group formation
via
put-by-light-
process



Export documents in a matter of seconds

At the end of their tour, Schröter and Sontowski arrive at the quality control section. Here, the in-house standards officer is inspecting an explosion-proof control panel and certifying it to UL 698A for the US market. A dedicated testing programme guides him through the inspection and approval process. As soon as the test label has been applied, the equipment is routed directly to the dispatch area. Thanks to Blumenbecker's status as an AEO (Authorised Economic Operator) and Certified Exporter, the customs declaration is part of an automated process.

Sontowski looks fairly satisfied with things, knowing full well that Blumenbecker has more digitisation work to do, for the paperless process is still patchy in places: »We still need data for mounting the terminal blocks, for example. Full digitisation is the ultimate objective: »We want to be the forerunners here and take all our staff members with us on the new digital pathway, as this is the only way to ensure market success in the long term«, reflects Sontowski. And Schröter is looking forward to the future digital applications that Blumenbecker will be discussing and developing in close collaboration with its customers.

The app for digital plant documentation: EIP.mobile

With EIP.mobile, all information and documentation on the machines and plants can be called up. This means access to parts lists, assembly diagrams, circuit diagrams, layout plans and manuals anywhere and anytime. A fast search function via device designations or QR code allows a considerable reduction of the relevant information search for troubleshooting.

The app offers benefits for different users:

Assembly: No searching in the circuit diagram, but finding devices directly in the assembly plan.

Commissioning: No manual data collection, but access to digitised handbooks.

Maintenance: Identify spare parts without errors and order immediately.

Management: Shorter downtimes and simple overview of the entire plant.



Identify components via App and QR code and retrieve information



The explanatory video and further information can be found at www.eipmobile.com.

›SMART WEIGHTLIFTERS‹

9 crane systems for acid-resistant battery box production

What have hospitals, mobile phone masts, power-plant server rooms and electrically powered vehicles all got in common? They all need secure containers for their batteries. AIB Kunstmann make them, and in the summer of 2019 the company opened up a new production plant at Most in the Czech Republic. The new line-up includes some ›smart‹ weightlifting equipment: Blumenbecker-made crane systems for extreme applications.





Taking a look inside the 3,000 square-metre production plant sited out in the open countryside near the Czech city of Most certainly gives you the impression that things are running smoothly, or rather ›squarely‹, for a truckload of six-by-two metre long steel sheets is just being delivered. These will be used to make acid-resistant battery boxes of the kind that are fitted to industrial trucks, forklifts, driverless transport systems and even cleaning machines. Numerous production steps are needed to turn the sheets into plastic-coated battery trays, and at the Most plant this is all part of an automated process.

Series production line for battery trays

»We have set up a high-tech production process at this plant that combines high quality with quantity output. We can produce up to 600 top-quality trays a day here«, explains Ralf Frigger, who was responsible for planning and commissioning the technical equipment and is temporarily in charge of the factory. With two plants in Germany and now this second facility in the Czech Republic, the AIB Kunstmann Group believes it is well placed to further consolidate and expand its position as the number one producer in Europe. »We have been on a growth path for a number of years now. Our suppliers have not been able to keep pace with us, and for this reason we took the decision to set up a factory in the Czech Republic where we can manufacture and coat the untreated trays for our series production operations ourselves«, says Frigger, who will soon be returning to concentrate fully on running the Brilon plant in Germany and acting as Group-wide quality control manager. This is now possible because: »All our acceptance tests have been successful and the global operating licence has been granted!«

The complex crane solutions take their first shapes in the CAD design.



Complaints quota of zero percent

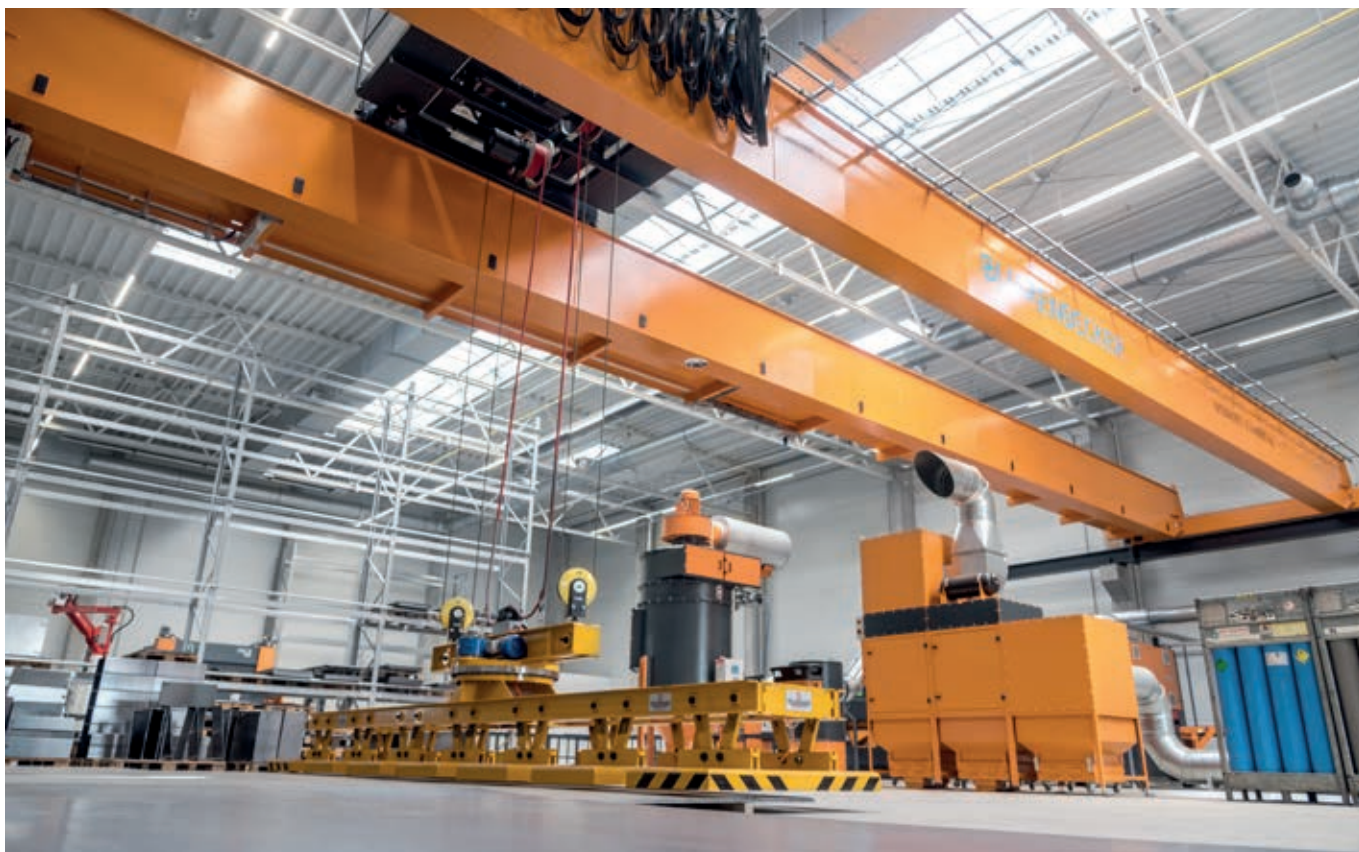
A company like AIB Kunstmann that can boast a complaints rate of zero percent sets itself and its business partners very high standards. This is all familiar territory for Blumenbecker. The industrial services provider has been working with AIB Kunstmann since 2014 and has been involved in extending, modernising and servicing crane systems as well as supplying the company with spare parts. And since 2018 this has also included the provision of new crane-based solutions for entire production plants. »Blumenbecker is our guarantee of success. From engineering know-how and services through to personal commitment, it's all there«, says Frigger in commendation. »That is why Blumenbecker was involved in the Most project right from the start.«

Nine crane systems

keep the production process moving

Michael Hamm, Blumenbecker's project manager, stands alongside Frigger in the new production shop. He and his team first set to work in early 2018 to develop solutions for all the crane-related operations. The result: nine crane systems covering incoming materials through to goods dispatch. They perform a variety of functions, such as unloading the trucks, stacking and retrieving the sheet materials, loading the production machines and transporting the workpieces. »Loading the plasma cutting machine with the six-by-two metre long and three millimetre thick sheets proved to be a real challenge« recalls Hamm, who along with his design engineer Alexander Maier developed a double girder bridge crane with a magnetic gripper and slewing gear for this particular task. A special sway control system is fitted to prevent load swinging and allow the sheets to be positioned very precisely on the cutting table.

Blumenbecker supplied nine crane systems that are used, among other things, to store and retrieve sheet metal, load production machines and transport workpieces.





»Blumenbecker is our guarantee of success. From engineering know-how and services through to personal commitment, it's all there.«

Ralf Frigger, Project Head Most,
Brlon Works Manager and Quality Control Manager at the AIB Kunstmann Group

Sophisticated crane solution for powder coating

The technical highlight of the production shop is the special crane in the power coating section. »After welding, the finished trays are heated to 300 °C before being given their PE coating in the powder bath«, says Frigger in explaining the industrial coating process. »As soon as the powder has fused on to the hot surface, the crane lifts the container away and frees the trays by twisting them and shaking off any excess powder.« For this procedure the plant manager spent several hundred hours working with an engineer on the development of a set of tongs that can grasp and move up to eight trays simultaneously. And the design of the crane system, too, was in a class of its own. »This called for all our technical expertise«, says Hamm looking back, »for the crane had to move a large mass of material with pinpoint accuracy, lower it deep into the tank without swaying and then lift it up again well clear of the action. The tongs alone weigh some four tonnes. When the trays are loaded this can add up to another two tonnes in weight.« What is special about this system is that the crane and tongs can be operated separately by remote control. The switchgear needed for this is mounted directly on to the unit in question. As Hamm points out, this saves on the need for long cable runs.

Suspense to the very end

Hamm and Frigger consulted closely with the development work and calculated and checked all the parameters many times over in order to be sure that everything worked. But there was to be no practical test or trial run. The individual components of the coating crane were simply too big for this. And so the suspense continued right to the very end. The various components were not pieced together until the final assembly stage in the spring of 2019. Then on 30th April the news came through: »The coating crane and all the other crane systems are working perfectly!« A success that Hamm puts down to a great team effort by everyone involved. And one that AIB Kunstmann and Blumenbecker would like to repeat. There is still a lot of room for further expansion at the Most factory site and a doubling of production capacity is already being planned. However, the modernisation and expansion of the Brilon plant in Germany is first on the agenda for 2021. And this will also involve expertise and crane technology supplied by Blumenbecker.

Contact person

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Shanghai – China's boom town

ON TOP OF THE WORLD



Shanghai is one of the largest and most exciting cities in the world and a symbol of an ultramodern, booming China. Where just 30 years ago there were rows of rickety waterfront sheds and small factories, we now see massive new high-rise buildings rising up at a rate of about one a month.

Since it opened in 2016, the 632 metre-high Shanghai Tower has become China's tallest building and the third-highest in the world. The view from the observation deck on the 121st floor is breathtaking. The panorama of houses that accommodate the city's 23 million inhabitants stretches from here right to the horizon. On a clear day you can even see as far as the Yangtze Delta.



The old multi-storey buildings along the waterfront promenade (the Bund) seem like toy building blocks in comparison. And yet they were the original ›skyscrapers‹, the first to be built in China in the 1920s. The beautiful art deco façades stand testimony to the prosperity of those times. A stroll along the Bund reveals contrasting new impressions with every step. Take a look inside the famous Peace Hotel with its art nouveau decor and relive the glittering world of Shanghai in the 1930s. And a tip for visitors: an Old Timers' band plays great jazz here in the evenings.

Further to the south lies the Fuzhou (Cultural) Road, which is best seen by walking east. Here can be found all manner of restaurants colourfully interspersed with galleries and artist shops selling everything you need for classic Chinese painting. This is just the right place to take a break and sample the Shanghai speciality of Xiao Long Bao meat-filled dumplings in a delicious broth.



People's Square with Shanghai Museum in the background



The Yu Garden was created in the 16th century.



Old meets new at the outskirts of Shanghai's old town

Soon you arrive at the People's Square with its municipal buildings, including the Shanghai Museum and the Opera House. But if you think that the past has been forgotten in Shanghai, just seek out the Yu Garden. This classic example of Chinese gardening art was created in the 16th century. It has pavilions with curved roofs, small ponds full of goldfish and Moon Gate passages, all a world away from the noise and bustle of the Old Town.

But modern Shanghai is always in view, with the massive high-rise blocks in the background towering over the low buildings of the Old Town. In their shadow, we find the old narrow residential streets (known as Shikumen) where the locals come together to chat and play cards and where freshly washed laundry flutters in the breeze.

Just a few steps from the Yu Garden is the tiny and ancient Buddhist Temple of Chen Xiang Ge, where visitors can draw energy and peace under the kindly gaze of the resident nuns. The scent from the incense sticks wafts through the air, pennants flutter in the breeze and sometimes you may even hear the songs of the nuns echoing through the courtyards.

When evening comes it's time to return to the Bund, where you can plunge back into the mass of humanity and watch enraptured as the brightly illuminated skyscrapers perform their daily light show. And an absolute highlight is to watch the sun set from the Cloud 9 Bar on the 87th floor of the Jinmao Tower. With good food and cool drinks to hand you really feel that you are on top of the world.

INSIDER TIPS

Shanghai Global Harbor

Shanghai Global Harbor is a modern shopping centre that opened its doors in 2013. It covers a total area of 480,000 m², which includes nearly 320,000 m² of commercial space and 120,000 m² of high-grade office buildings as well as a five-star hotel that takes up 40,000 m². It boasts the largest rooftop garden (30,000 m²) in Shanghai and a shopping mall with the largest number of parking spaces (2,200) in the city.

Global Harbor has more than 400 brand stores and over 100 food outlets, along with a number of cinemas, theatres, gyms, spas and foreign bookstores. One day at Global Harbor is simply not enough.



SHI JIAYUN
Head of Controlling
Blumenbecker Holding

Qibao Ancient Town

Qibao Ancient Town, in the south-west of Shanghai, has a history that dates back thousands of years. With natural scenery reminiscent of Jiangnan Water Town, Qibao also has a long cultural tradition. It takes its name from the Qibao Temple, which was the first building of its kind in the east of the country.

The Ancient Town is now focused around the historic area of Qibao Old Street, which covers an area of some 57,300 m². Old Street is divided into North Street and South Street. The latter is famous for its streetfood and snacks, while North Street is dominated by shops selling tourist gifts and handicrafts, antiques, calligraphy artworks and paintings. Qibao Ancient Town has become a prosperous market venue combining leisure opportunities, tourism and shopping.



QIAOLING DI-HEIL
Managing Director
Blumenbecker China

Shanghai

上海

Blumenbecker in China

WHERE HIGH-SPEED MEETS HISTORY

If you leave downtown Shanghai heading north west you will reach the Jiading District after some 20 kilometres. This part of Shanghai was once a major city in its own right, being founded in 1217, some 50 years before Shanghai itself. There are many reasons to visit Jiading. One of these is the magnificent Confucian temple with its 100-plus rooms and ancient trees

that were originally planted during the Yuan Dynasty (1276-1368), making them older than the temple building itself. Other visitor attractions include Nanxiang Old Street, where the popular Xiao Long Bao dumplings originated, Huilongtan Park, the Qiuxia Garden and the old city wall.





Ideal conditions for continuous growth

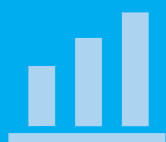
As well as its botanical and historical charisma, Jiading also presents an ultramodern, dynamic and extremely versatile face. With a population of around 1.5million, the city district itself is home to a number of Shanghai University departments and also boasts the Shanghai International Circuit, which hosts the Formula One Grand Prix of China every year. A large part of the Shanghai-based automotive industry is also to be found in the Jiading District. Two of Blumenbecker's Chinese companies have now relocated to

this booming part of the city: Blumenbecker Shanghai Automation System and Blumenbecker Qingdao Industry Service believe that this district provides ideal conditions for commercial success and are now using their new base to supply numerous Chinese firms and businesses with a wide range of industrial automation products and services.



95

Staff



21

Million €
Turnover



3

Locations



2003

Year of
Foundation

The figures are from 2019.

Blumenbecker – on track for success in China since 2003

The philosophy of the Blumenbecker Group is to offer customers worldwide a strong partnership based around close proximity. For Beckum-based Blumenbecker Automatisierungstechnik it was therefore a logical move when in 2003, on the initiative of a long-standing customer, the company went over to China and set up a production plant for machine control systems. What started off in the Minhang District with a workforce of eight people soon developed to become a real commercial success. Shanghai Automation System, headed by its managing director Qiaoling Di-Heil, is now winning an increasing number of contracts from companies of German origin that even in China are keen to rely on the ›Made by Blumenbecker‹ label. The new company is expanding and the employee headcount is rising. Sales offices have now been opened in a number of Chinese cities. Operations in the Shanghai Minhang District reached their capacity limit in 2010.

6,000 m² of production space at two sites

The Blumenbecker companies are relocating to the Jiading District where a switchgear production plant is being established. A second production facility is also being built at the port city of Tianjin in northern China. A third relocation within Shanghai has also been pending since 2019. Yet again Blumenbecker finds itself needing more space for expansion and this is to be provided at the Nanxiang Robot Industrial Park. Here, the China-based automation specialists are deploying a new and efficient logistics concept that will allow them to further accelerate their operational processes and expedite major client orders more quickly. Together, the Shanghai and Tianjin facilities will provide a total of 6,000 m² of production space. Managing Director Di-Heil has stated that she wants to see Blumenbecker China continue to expand its operations there. It sounds like 2019 will not be the last time that Blumenbecker's Chinese companies will be moving house.

The Blumenbecker team in Tianjin



» We provide our customers with all the right conditions for close international partnership, not just in Germany but around the world.«

Harald Golombek, Managing Director of the Holding Company and Head of the Automation Technology Division

Qiaoling Di-Heil opened the inauguration ceremony in the new production hall in Shanghai on 28 March 2019.



7 special machines for training and education

CNC MEETS MANUAL MACHINING

CNC processing and manual lathe work on a single machine? Blumenbecker had made this a reality and the company has now supplied the training services provider Kolping with seven of these special machines for its Olsberg centre.

It's eight o'clock on a Monday morning and there is plenty of activity going on in the metal workshop of the Kolping Training and Education Centre in the South Westphalia town of Olsberg. A low humming sound mixed in with individual scraps of conversation. Thirty aspiring industrial mechanics are here preparing for their Chamber of Industry and Commerce final exams. And playing the leading role are six new CNC milling machines and one CNC lathe. They are the centrepiece of the ›Industry 4.0‹ campaign that has been launched by the training services provider Kolping.



7

CNC
MACHINES



New technical equipment for the Olsberg training centre

Thanks to government funding, the training centre has invested a total of 750,000 euros in re-equipping its Olsberg workshops and training rooms. »This means that we are well prepared to meet the future demands of the digitisation age and have been able to increase our training capacities by 50 percent«, says a delighted Herbert Milisavljevic, Head of the Metals, Electronics and Plastics Department and Site Manager at the Olsberg Training Centre. The training provider can now accommodate some 170 apprentices and vocational retrainees every year, which represents a 30 percent increase on 2017. The Olsberg facility provides external training and vocational development programmes and also organises various activities on behalf of employment agencies and job centres. And private individuals are also increasingly using the services available at the centre.

The specification: digital processing and manual work on one machine

With the seven new machine tools playing such a key role in the growth strategy, the specifications tender for the project partner would inevitably be fairly demanding. »All the machines had to be capable of both electronic and conventional manual operation«, explains Milisavljevic, who continues: »This is really important for our in-house training programme. Most of our industrial clients only operate CNC machines. However, for their final exam our apprentices must also be able to turn and mill objects by the conventional method. And companies send them to us to master those very skills. What is more, we had very specific requirements when it came to the machine control systems: a Heidenhain TNC620 for the milling machines and a Siemens 828D for the turning machine.« According to Milisavljevic, of all the suppliers contacted only Blumenbecker was in a position to meet all the specifications required. The industrial services provider already had a good working relationship with Kolping and had been supplying tools and consumables to the training company's various establishments since 2011.



» You could not get an easier working relationship. I only have one contact for all the different manufacturers and can get a range of custom products all from one source.«

Herbert Milisavljevic, Head of Metal, Electronics and Plastics Division at Kolping-Bildungszentren Südwestfalen and Head of the Training Centre in Olsberg

Machine tests and a visit to the reference customer helped produce the ideal setup

With Blumenbecker, a suitable project partner had been found. Now for the next step. Milisavljevic and his training team paid a visit to the Blumenbecker Competence Centre in Münster. Here they were able to try out milling and turning machines from a variety of manufacturers under the watchful eye of Martin Spiek, Head of Blumenbecker's Machine Tools Section. There then followed a joint visit to a reference client. After some detailed discussions the ideal configuration was finally agreed on for the milling and turning machines.

Delivery to the installation site

It took six months and some intensive preparations on Blumenbecker's part before the seven analog-digital machines could be put into service. The commission included the delivery of the machines to the installation site. This transport operation involved the negotiation of a long and steep access road with a reduced height limit and culminated in the 14 tonnes of equipment having to be unloaded sideways outside the training centre. The shipment was then manoeuvred on heavy-duty rollers via a number of staircases to its final destination. To the satisfaction of all concerned there were no mishaps along the way and now, four months later, there is nothing to prevent the would-be industrial mechanics from preparing successfully for their exams.

Contact person



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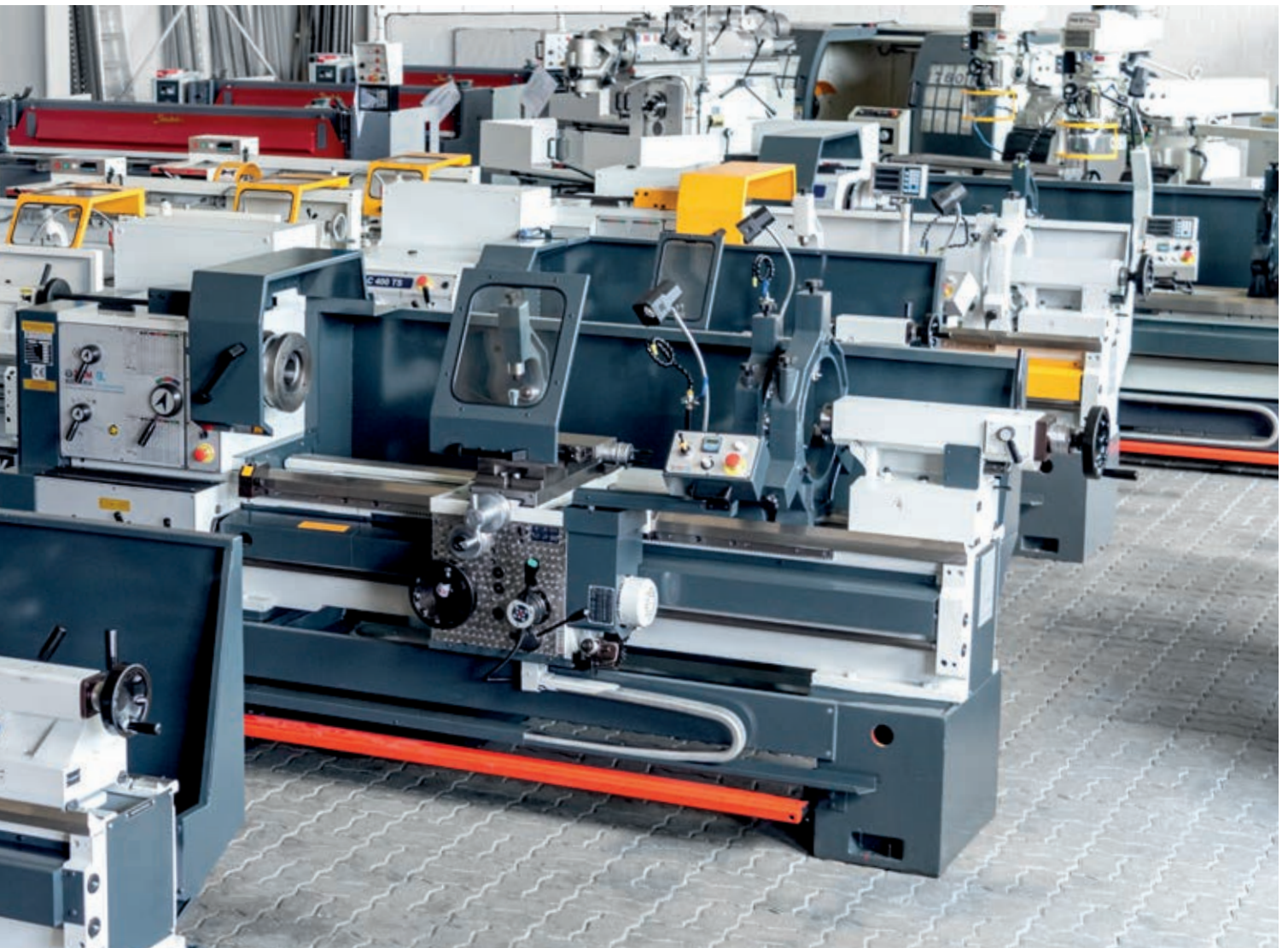
mspiek@blumenbecker.com



**The story continues:
the next project is already being planned**

Meanwhile, Herbert Milisavljevic is thinking ahead. Before he retires, the 63-year-old wants to set up a training programme for mechatronics engineers. And here, too, Blumenbecker is the partner of choice, for »you could not get an easier working relationship. I only have one contact for all the different manufacturers and can get a range of custom products all from one source.«

In the Competence Centre for machine tools in Münster, numerous machines are exhibited under power.



The Göltzsch Viaduct in Northern Vogtland

SAFE AND SOUND



They call it the wonder of the Göltzsch valley. The Göltzsch Viaduct is one of the oldest testimonies to German railway history: the largest brick-built bridge in the world and a historical monument that continues to give reliable service even after more than 170 years. And regular maintenance and repair is a vital part of this. Blumenbecker is there to ensure that all the work carried out at those dizzying heights is performed with utmost safety. And that includes tightening up 2,600 bolts every six months.



The Göltzsch Viaduct in Saxony stands solid as a rock and spans the river valley between the towns of Reichenbach und Netzschkau. It is a railway bridge of superlatives: over half a kilometre in length, nearly 80 metres high and built from more than 26 million bricks. Most of these are still in their original condition. Just then a Regional Express from Leipzig roars over the bridge heading for Hof. It is one of up to 50 such trains that cross the viaduct every day, each weighing as much as 2,000 tonnes. Yet neither the high loads and increasing volume of traffic nor extreme environmental conditions have yet managed to affect this masterpiece of engineering. That this will remain so in the years ahead is all down to Ulrich Schäfer. The chief bridge engineer and his team are constantly on site inspecting the monument and carrying out structural repairs.

Up to 2,600 screws must be checked and tightened by hand.





» Working with Blumenbecker has proved to be a stroke of luck!«

Ulrich Schäfer, Chief Bridge Engineer, DB Netz AG

Complex equipment for maximum safety

Anyone who works at these dizzying heights has to have complete faith – in their own actions and in the equipment they are using. And for the latter the rail infrastructure company DB Netz AG has recruited an experienced partner. Blumenbecker has been responsible for maintaining the inspection equipment for the Göltzsch Viaduct since 2012. »This is a demanding job, for the equipment involved is fairly complex«, says Schäfer, before going on to explain: »Unlike the inspection equipment used on high-rise façades, the gondolas must be able to access not just the front and rear of the 98 arches but their inner surfaces too.« This is made possible by using demountable work platforms. And the Göltzsch Viaduct has a pair of these. The two gondolas are suspended on rail tracks running along the east and west sides of the bridge. What is special about this system is that the drive units are detachable, which means that the two large platforms can be transformed into four smaller, individually controlled modules. These can then be joined together through the arches from either side of the bridge to create a single unit.

Technical checks with TÜV approval

»The fact that such inaccessible parts of the bridge can now be reached is down to a special combination of cable system, hydraulic controls and electronic components«, says Thomas Kolitsch, who heads the Blumenbecker department involved. The major spring maintenance operation, which involves dismantling, inspecting and re-installing all the technical equipment, including the cable system, takes two months to complete. The engineers are on the bridge right now checking the 2,600 plus bolts on the rail structure and tightening them by hand if necessary. »All this is followed by five days of inspection and approval by the TÜV«, explains Kolitsch. A few months later the team will be back on site when it's time to re-inspect the rail system and make the installation ready for the winter. And TÜV Thüringen will also be back to inspect the quality of the work done.

Working at a dizzying height (from left):

Michel Krumbiegel, Lars Pietsch, Thomas Kolitsch, Jörg Schreiter (expert TÜV Thuringia), Alexander Mamadzanow



All services from a single source

For bridge master Schäfer, working with Blumenbecker has proved to be a stroke of luck: »We now get the entire spectrum of services from a single source, from emergency assistance and repair and maintenance through to training and briefing.« Schäfer especially appreciates the fact that he is dealing with professionals who know their way around the complex issues involved and who are able to deliver convincing solutions as and when they are needed. Word of this expertise has spread around the DB Netz company. Recently, Kolitsch was called out to look at the Elster Viaduct, whose manually-operated maintenance and inspection system needs a rebuild – and something fairly impressive is required. »A job for Blumenbecker«, says Kolitsch confidently.

Contact person



Thomas Kolitsch

Head of Department

Blumenbecker Technik GmbH

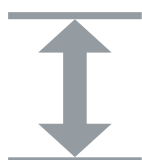
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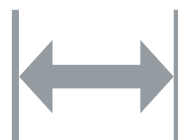
98

Arches



78 m

in Height



574 m

in Length

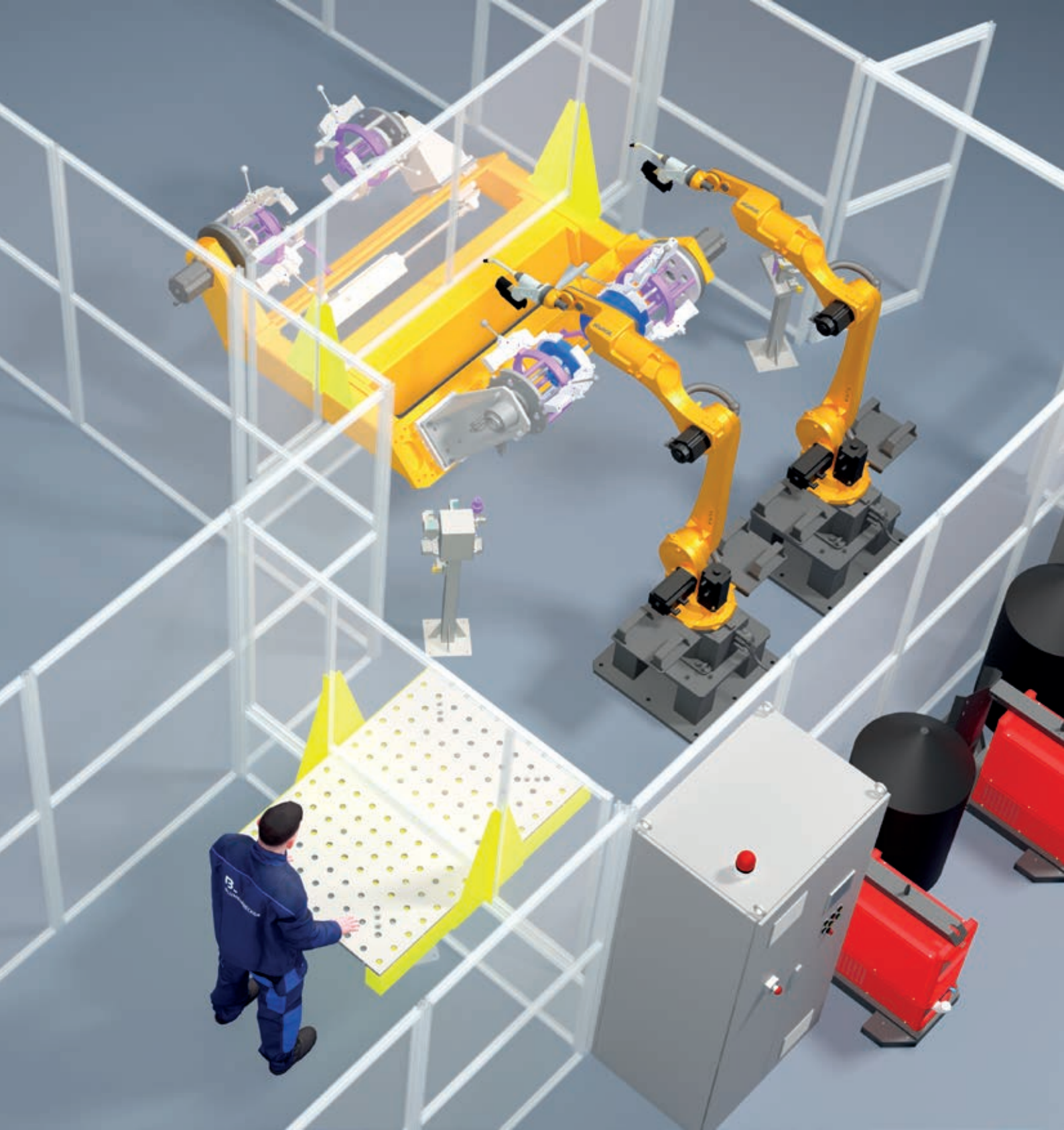


26

Million Bricks

What are high-level maintenance systems?

Maintenance systems are used for cleaning, maintaining and repairing high-rise façades, glass roofs, glass domes and even bridges. They are widely employed when the structures in question are very high or when the parts of the building needing attention cannot be accessed by other types of mobile equipment or can only be reached with extreme difficulty. Maintenance installations consist of a man basket or working platform that is secured to the roof or attached to the roof structure via a track system. They can be operated manually, hydraulically or electronically.





New robot welding system
for Tatramat

PERFECT SEAMS FOR HOT WATER

When hot water comes out of a tap in Slovakia it is often thanks to Tatramat. The company, which is part of the Stiebel Eltron Group, is one of the best known manufacturers of water heaters, heating appliances and heat pumps in eastern Europe. And product quality was given a further boost in the autumn of 2019 with the introduction of fully automatic robot welding equipment for the highly sensitive seams on the hot water vessels.



What's to be done when you want to streamline a process but find that the skilled workers you need are not available? This was the problem facing Stiebel Eltron's Slovakian subsidiary in early 2019 when the company wanted to improve the welding process used on the pressure vessels fitted to its water heaters. Tatramat decided that it would fully automate this operation and consequently chose Blumenbecker Slovakia to be its project partner. As a robotics specialist, Blumenbecker has built up a high level of expertise in the development of individual customer solutions.

Robotics can be used for complex welding tasks

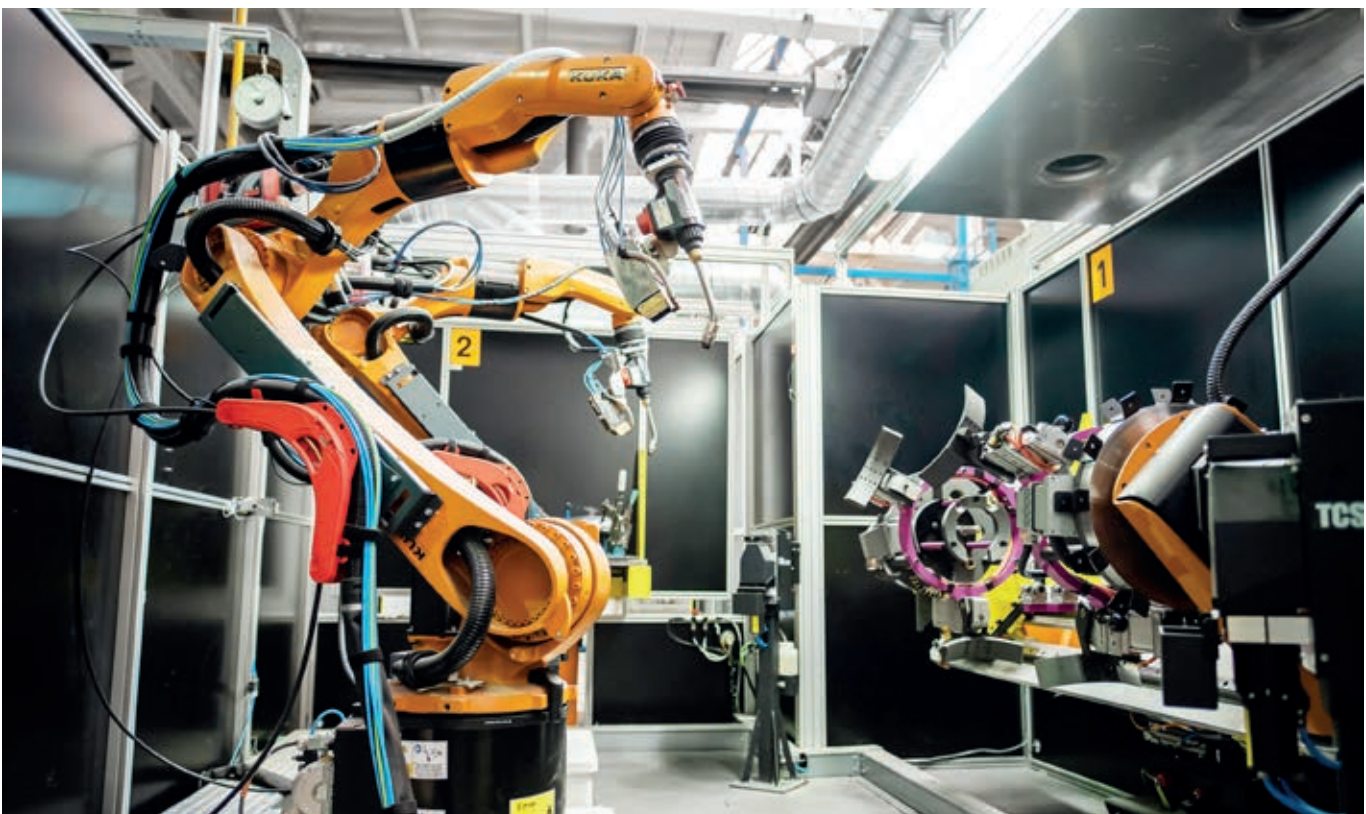
This was exactly the kind of know-how that was required, for one of the reasons in favour of a fully automated solution was the fact that a different type of weld joint was now to be used. The different parts making up the pressure vessel would henceforth be joined using butt seams. »With this type of welding process it is crucial to have very precise positioning of the parts involved«, explains Peter Grňo, the managing director

of Blumenbecker Slovakia. Blumenbecker developed a solution whereby mechanical guides align the welding parts at an exact angle of 180 degrees to one another. »Sensors are used to monitor the entire procedure and these ensure that all the parts are in place and correctly positioned«, Grňo continues. »Only then can the welding process commence.«

3D concept the deciding factor

The robotics specialists first presented their concept as a 3D visual model. This gave Tatramat an opportunity to test each and every detail of their new welding system in a virtual environment and to make any adjustments they wanted at this initial design stage. Events then moved to the implementation phase. The main workstation units are two synchronised KUKA KR CYBERTECH industrial robots that simultaneously produce the circumferential welds required. Both robots are equipped with Fresenius welding technology. An optical Scansonic laser system, which was specially designed for butt welding work, oversees the entire welding process and immediately corrects any errors.

Two synchronously operating KUKA robots weld the circumferential seams simultaneously.



»Blumenbecker's solution is helping us in our drive to become the market's leading quality provider.«

Jan Girgas, Technical Manager, Tatramat s.r.o

Saving time in ultimate safety

In order to save time when changing over the welding parts the system has been equipped with a rotary table on a synchronous axis. This allows welding to be carried out on one side while a new component is already being positioned on the other. Turning the table then brings the new part up and immediately ready for welding. And the robot welding station also meets the highest safety standards. Safety doors, light curtains and other measures are in place to protect man and machine. The system's modular design guarantees flexibility and future extensions and modifications can easily be realised.

Another automation project in the planning pipeline

Blumenbecker's all-round service package covers everything from extensive pre-testing to the maintenance of robot workstations, with service hotline and just-in-time spares delivery thrown in for good measure. Blumenbecker also provided in-depth training for Tatramat's operating personnel. This means that in future the staff there can make stand-alone programming changes, enabling the system to switch to the manufacture of other products. The joint project turned out to be a great success overall and to quote Jan Girgas, Tatramat's Technical Manager: »Blumenbecker's solution is helping us in our drive to become the market's leading quality provider.« Blumenbecker is currently busy developing a concept that will produce another fully automated workstation.

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Maintenance Customer Portal

All information at a click

Blumenbecker's customer portal for maintenance provides you with an up-to-date overview of the maintenance and testing status of your equipment and any measures that need to be taken. And you can access all the relevant documents at the touch of a button.

Benefits

- ✓ Legally compliant storage
- ✓ Dashboard with traffic light system
- ✓ Filter and sorting functions
- ✓ Enquiry and order process
- ✓ Inspection history
- ✓ Access from anywhere at anytime

Explanatory video
(only in German)



