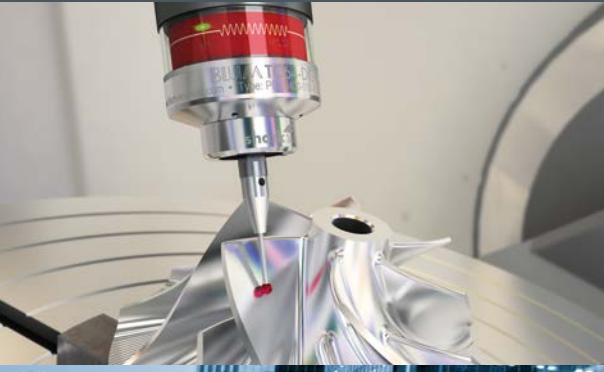




>>> The DIGILOG revolution: TC64-DIGILOG



>>> Marching into the global market with mould technology



>>> Safety is paramount – in the air and at the production line



>>> Probing shapes NASCAR cup chase



# Blum-Novotest News







Alexander Blum, President of Blum-Novotest Group, together with "Hans" Han, Managing Director of Blum-Novotest Ltd. Korea at Simbos 2012 in Seoul



> > > We don't supply merely a piece of product to our customers, but traditionally solutions for the best economic benefit < < <

Alexander Blum  
President

A lot of feedback from our customers, partners and friends about the Blum-Novotest Asia News 2012 encouraged us to change it from its regional scope to this new, world-wide issue in 2013. Against the background of our new establishments in Brazil and Thailand, we show you, in an impressive manner, the global coverage of our service and application support in all markets in the immediate vicinity of you, our customers. Since our foundation 45 years ago by my father, Günther Blum, we have co-operated internationally and intensively with the most varied customers. The essential change in our international approach came 15 years ago with the foundation of subsidiaries, numbering 12 by now, and a network of Blum-Novotest system integrators worldwide. We are thus consistently following the changes in the producing world. Growing accuracy requirements and, above all, the development of automated production processes to secure stable and high quality levels are becoming increasingly more important in this respect. The distribution of highly automated production systems will continue during the next years worldwide. It holds chances for companies and people in all countries since the development to produce closer to local markets and more customized to local endusers will proceed, both in the area of investment and consumer goods. These production systems require the full support of manufacturers to enable them to provide their full potential to end customers. Being a process integrating manufacturer of measuring and testing solutions, we have successfully taken on this task for many years.

When we at Blum-Novotest decided to approach the world market from the Central European niche in 1997, we hoped for today's success but it was certainly not guaranteed. After some changes in the thirtieth year of its existence, the company had just started forming a fresh structure with the present 3 divisions in measuring and test technology: The measuring component division as a fast-growing supplier of production metrology for machine tools, the Blum-Novotest test engineering division as a strong partner in testing technology, inter alia for the automotive and hydraulics industry, and the measuring machine division to provide measuring machines integrated into production lines in the most varied industries. At the beginning of our internationalisation, the focus was on our measuring components for machine tools. Today, however, our subsidiaries support all of our three divisions worldwide. In 2012, this network was able to prove its technical capability also in the most complex projects under demanding conditions, e.g. with projects for Blum-Novotest test benches from Japan and China through to India, UK, USA and Brazil.

The reports of this issue on our most varied customers worldwide show me again how important the sound technical training is which we undertake. We provide this for our own technicians and engineers, but also for our numerous system integrators

who are intensively trained at the plants. It is the experience from the most varied industries which particularly helps us to provide the best solutions for the beneficial application of our products to our customers. At Blum-Novotest, we don't supply merely a piece of product to our customers, but traditionally solutions for the best economic benefit of our products across their entire life cycle. At our company, all associates are aware of the fact that we do not create outstanding technical solutions for their own sake, but that they only serve the purpose of increasing the economic success of our customers.

This first global issue of the Blum-Novotest News is supposed to give you an impression of our capabilities in the different regions of this world. The individual articles will introduce you to the success stories of customers who are leading in their segment. You will get an idea of the working culture at Blum-Novotest and the working attitude of our associates who in co-operation with you, our customers, facilitate our mutual success.

Please, have a look at page 12, too. It contains information on our latest product, the new TC64-DIGILOG touch probe. During the last two years, the hard-wired version has already shown ground-breaking measuring results in machining centres to control and secure processing procedures. Our TC64-DIGILOG constitutes the logic continuation of this digital/analogue "shark360" measuring mechanism in a wireless version for an even wider universal use.

I wish you interesting and entertaining insights as you read our Blum-Novotest News and hope that you will provide the opportunity for us to create mutual success for your benefit with our products and experience. My colleagues in the most varied countries worldwide are keen to prove their capabilities to you.

*A. Blum*  
Alexander Blum  
President





## Probing shapes NASCAR cup chase

USA

When the owner of your race team is a three-time winner of the American NASCAR championship series, as well as a three-time Super Bowl winning coach, you might expect that no stone would be left unturned in achieving excellence in performance, either on the track or in the machine shop. For Joe Gibbs Racing (JGR; Huntersville, NC), teamwork is the key to success in the NASCAR Sprint Cup and nationwide racing seasons. Its teams depend on the highest performing chassis and engine parts in their race cars. JGR's leading drivers include Denny Hamlin in the #11 FedEx Toyota Camry, Kyle Busch in the #18 M&M's Toyota Camry, and Joey Logano in the #20 Home Depot Toyota Camry. JGR operates a 929 m<sup>2</sup> machine shop and quality control department equipped with the latest machine tools. Equipment includes 14 Doosan CNC mills and four CNC lathes, a Mitsubishi laser cutting machine, a Mitsubishi water jet, two Mitsubishi wire EDMs, and one Mitsubishi sinker EDM. There are 21 machine operators, three NC programmers, two manufacturing engineers, and a six-person quality control department. Installing advanced probing and non-contact laser systems from Blum-Novotest for tool setting and workpiece measurement has enabled JGR to reduce downtime, increase green light machining time, reduce scrap rates, and improve the manufacturing quality of its high-performance chassis and engine racing parts. JGR's operation is setup as a typical job-shop manufacturer, explains Kelly Collins, shop manager. He says they set up and run between 60 and 65 jobs a week, some short run, others longer depending on the volume of parts needed. These parts range from internal and external engine components all the way to driveline and suspension parts. "One difference, of course, is that the engine and chassis parts and components that the JGR shop produces must meet the stringent requirements of NASCAR before they are even allowed on the track for a race on the next weekend during the Sprint Cup and nationwide race seasons.

### Maximising the performance of machining operations

Collins goes on to explain that they are "like most manufacturing companies, in that they have a master production schedule and build schedule; there is a need for foresight in their planning and capacity in the shop, especially on the engine side. "We know well in advance what we need to make and when we need to make it, how many engines we'll need, and when we will need them," says Collins. JGR also has to make unexpected short runs of some parts, sometimes just days before a race. When JGR looked for a better way to maximise the performance of its machining operations, it asked several suppliers how they managed their tool setting and quality-control issues. Their suppliers recommended the non-contact LaserControl systems and contact touch probes from Blum-Novotest for tool setting, breakage detection, and workpiece measurement. "At JGR we have a continuous drive to get improved parts to the race track that will give us a competitive advantage over the other NASCAR teams." Collins explains they previously used old-school technology for setting tools and locating the workpiece inside the machine. He said that their older methods involved using 1-2-3 blocks and edge finders to accomplish the tasks. After machining, using hand tools, operators unclamped parts and took them to the quality department to verify features on their Zeiss and Starrett CMMs, Collins explained. "Under the old way of doing things, we experienced a lot of downtime removing parts from fixtures for inspection and refixturing, and then manually entering tool and work offsets for remachining. Also, we were generating an unacceptable amount of scrap resulting from blend-line issues caused by imprecise tool heights, and wasting time on the shop floor by manually entering tool and work offsets into the machine controls," says Collins.

### Suppliers recommended Blum systems

Searching for hidden machining capacity, JGR began its research into available probing and tool setting sources. Their objective was to get more out of their machines, reduce the scrap rate, increase green light machining time, and improve quality procedures. "Our investigation confirmed the suppliers' recommendation. Blum's devices were easy to use, accurate, and supported by good service," says Collins. JGR then decided they should give the new technology a try and brought in a probe and a tool setter so that the operators could see what the tools could do for them. There was some initial reluctance on the part of machinists to use the new technology, but after working with the Blum equipment, they began figuring out new and creative ways to use it. Operator Steve Larocque was one of the first operators to use the Blum equipment on a trial basis. "He runs a Doosan VMC with a fourth/fifth axis rotary table, a Blum TC50 probe, and a Laser Control NT. "We load programs that tell what to measure and the Blum software automatically puts in correct offsets, eliminating potential errors while manually inputting data. The TC50 probe has also helped on certain jobs where we had to stop the program to edgefind," says Larocque. "The probe checks them and automatically adjusts offsets. "He also uses fixed probe programs, which are inserted into their part programs so that they run automatically. He can run part after part, and the probe will come out on its own and readjust the offsets." Setting tools with either the ZNano contact probe or the laser eliminated problems caused by inaccurately produced blend lines in longer runs of parts with multiple tools. Setting tools by hand with the 1-2-3 block depends on operator feel, and there can be differences from operator to operator. "Now that all of the tools are set with a laser or the ZNano, everything is going to have the correct height offset," says Larocque.

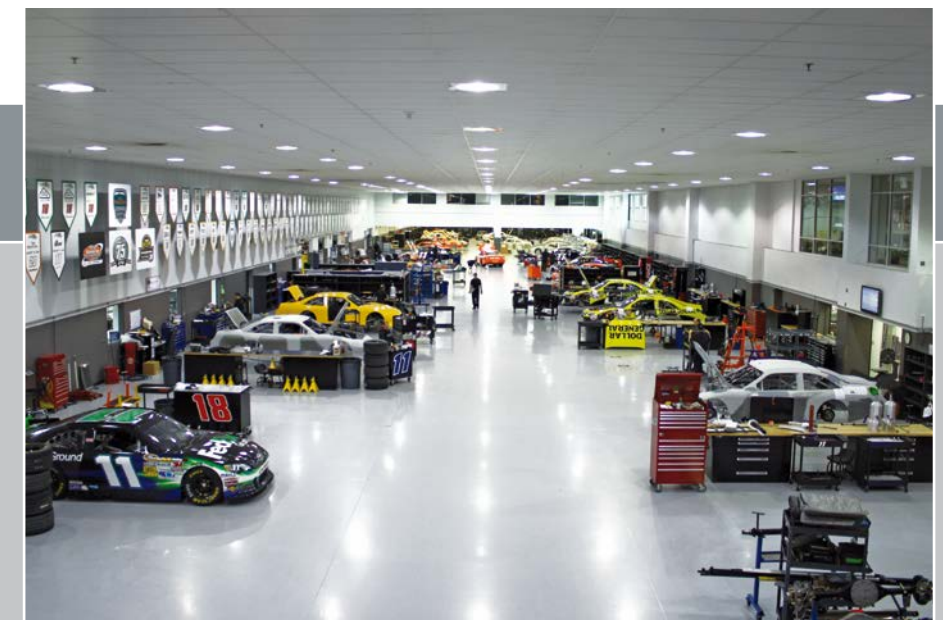
### 95% reduced setup-time

JGR has seen a reduction in setup times in terms of locating stock in the machine by using the probes to more accurately locate the workpieces and set zeros in the control. "Generally speaking, Collins estimates they have reduced setup time in most instances by 30% by using Blum technology, and reduced their level of non-value-added quality control tasks by approximately 20%, because they can now do a portion of their QC effort in the CNC mills.

In one particular case however, they were able to adapt the use of the Blum workpiece probe to reduce setup times of their engine pistons by 95%. In the past, their operators would align and orientate their pistons for final machining using a dowel locating pin inserted through the piston and then orientate the piston with an edge finder. The process took 12 minutes per piston to set up, which with an average of 64 pistons per week, totalled 12 hours 48 minutes for the week. Since the addition of Blum's workpiece probe however, they have been able to adjust the piston orientation in mere seconds. They cut setup time down to 38 seconds per piston, totalling only 38 minutes per week, giving them the 95% time savings. "Not only can their programmers put instructions in the programs to use Blum tools, but their machinists can also program the probes or tool setters at the machine by themselves. Blum also provided custom programming for several of their parts, and training was not an issue. "Whenever we needed support, whether over the phone or in person, Blum was quick to respond," says Collins. "The probing accuracy of Blum's workpiece probe was within 0.0038 mm of our Zeiss CMM. This level of accuracy enables us to perform in-the-machine quality control checks," Collins says. The ZNano, for example, has half-micron repeatability, and is used by JGR in both the hard-wired and wireless versions. The laser has a shutter system that protects the optics and creates a higher quality focused beam. The result is better tool-to-tool accuracy, while an integrated tool air blast ensures reliable and repeatable measurements eliminating blend lines. "Collins explained that they are now able to effectively eliminate blend issues on the first pieces produced, and that without the need for manual entry of offsets, they get more green-light time and have fewer opportunities for typos being entered.

### Reliable broken tool detection

Collins was also very content with the ability to check for broken tools with the ZNano or laser. In the past, a broken tool caused a lot of scrapped parts, because they would normally not discover the problem until parts were destroyed. Many times, multiple tools would break before they realized there was a problem. Blum's tool-breakage detection stops the machine automatically when a broken tool is detected. "We no longer have to rerun multiple tools in order to solve a broken-tool problem, and our scrap rate has decreased by 90% on issues caused by broken tools. Tool breakage detection also gives us the ability to run unattended and lights out, which means free capacity," Collins says. The impact on operator morale has been positive. Their confidence level in the quality and accuracy of parts they produce has never been higher. "It snowballed from the first successful installation of the Blum probes and lasers, and nearly all of our machines now have the devices installed," says Collins.



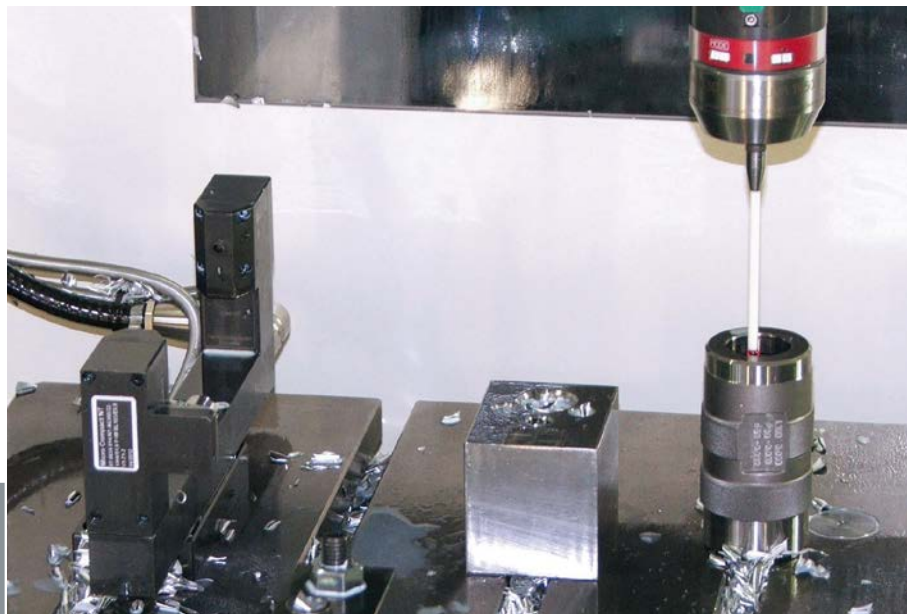
> > > [www.joegibbsracing.com](http://www.joegibbsracing.com)





# To master the production

*Did you know that the worldwide consumption of PET bottle caps is estimated at 4 billion pieces a day? It is obvious from this breathtaking figure that the production of plastic caps for beverage processing, cosmetic industries or for households is a lucrative field which has, however, its relentless rules. The Czech producer of base plates for multiple injection moulds, the Tirad company, has been a part of the production chain, at the end of which the most significant players like Coca Cola or Pepsi have figured for several years and measuring systems of the Blum-Novotest have become the company standard on its road to success.*



"There are incredible volumes. For instance, a 96-multiple mould having the frequency of 3.5 seconds is able to produce 26 tonnes (approximately 1 truck) of PET caps a day!" Stanislav Veselý, the executive director of the company, describes. "When you produce such amounts, even a minimum reduction in plastic consumption in the order of 3–5 % poses significant financial savings. And thus, the pressure on the price of the product has created a very specific demand: combining as many cavities as possible in a mould with the closest tolerance. The positional accuracy of cavities affects the wall thickness of the cap and also the financially monitored plastic consumption".

## Within bounds of possibility

While the tolerance of usual accuracy of cavity positioning was formerly  $\pm 0.01$  mm/m, recently, the Tirad company has carried out orders having a tolerance of even up to  $\pm 0.005$  mm/m. "We had to adapt to the market. Both with regard to precision and also to the size of frames that are made up to dimensions of 1500 x 2500 mm. When you realize that our coordinate measuring machine determines the position and achieves the uncertainty of 0.004 mm/m, we are, in fact, approaching a laboratory tolerance during our production," Mr Veselý points out.

## Absolute technological discipline

The production at the Tirad company really has the character of working under laboratory conditions. Considerable investments were directed especially towards the thermal and technological stability of the manufacturing process, and towards the reduction of human errors. Manufacturing technology in air-conditioned space is actually subject to strict in-house regulations. A minor deviation, in form of a tool set-up to an incorrect length against the verified length, may cause vibrations in the cut thus exceeding the micron tolerance. This is also confirmed by S. Veselý: "In respect of the tool and workpiece set-up, we needed to gain much firmer ground, and that's why we began thinking about the implementation of measuring probes in our production".

## Blum – a guarantee in quality

The principal role in the choice of laser and touch probes was played by maximum accuracy and long-term process reliability in the machining area. S. Veselý adds: "If you take hundreds of measurements of a micron tolerance a day in a three-shift operation, the circle of potential suppliers is already very narrow. We knew the Blum company as a supplier of first-class laser systems, but also the measuring probes of the TC line persuaded us of their qualities during tests lasting several months. Nowadays, we have 5 machines fitted with the Micro Compact NT laser and with the TC50 touch probe. And we intend – owing to our marvellous experience – to acquire some more."



## TC50 – touch probe for universal applications

The TC50 probe is designed for universal applications in cutting centres, particularly in those with limited accuracy demands at high dynamics and measuring speeds up to 3 m/min. Robust symmetrical design, non-contact signal generation and higher measuring force – these are attributes that guarantee a top measurement repeatability independently of speed, stylus length or pollution of the measured surface. Using the TC50 touch probe, Tirad automatically determines the zero point and monitors the flatness of the base plate in 7 points having a tolerance of 0.005 mm. A demanding application that takes full advantage of the progressive measuring mechanism inside of the probe. In the course of measuring, a text file is generated that stores measured values and can be used for a possible reverse analysis.

## Micro Compact NT

Each tool to be cut is measured first by the Micro Compact NT laser system. Measurements, using a focused laser beam of 0.03 mm in diameter, takes place under identical conditions as machining. In this way, it is possible to get results approaching the absolute reality – unlike an external measuring device. The measured length offset compensates inaccuracies resulting from tool change clamping errors or from temperature and dynamic changes in the spindle and the machine. And besides, automatic data transfer into a tool offset table eliminates any human error and the tool data is retrospectively available in the text file. Blum with its 25 years of know-how in laser measuring systems represents the world leader in this industry. The ingenious combination of optics, microelectronics, mechanics and software guarantees excellent repeatability of measurements and almost maintenance-free operation in the long term.

## Unproductive time has disappeared

Everyday life of any supplier revolves around these words: price, delivery time, quality. It is then quite logical that companies wanting to get to the top or to remain there are looking for ways to manufacture faster, more precisely or more efficiently. Tirad found the way to master its production and to lay down rules for it. Although it is purely a piece production, the overwhelming majority of the machining process works without any operator intervention just by touching the green button of "cycle start". "The Blum probes have become a standard for us. They present not only current geometric accuracy to us. They also present retrospective views by storing valuable data for the later analysis of finished machining. However, they are also a glimpse into the future, because lots of unpredictable unproductive time has disappeared thus making price calculations of the demanded work much more specific." Mr Veselý says in closing.

CZECH REPUBLIC







FRANCE

# Blum-Novotest, custom made partner of Huron

*They got to know each other through laser tool measurement. The changing demand led Blum-Novotest to develop also mechanical sensors that have the technical knowledge acquired in laser development. Huron is a manufacturer proud to offer these measurement systems it has helped to optimise in its own machines.*

The price war continues to rage in the world of machine tools. And yet, being 100% convinced of the advantages of a laser tool setters in its machines, Huron now proposes Blum-Novotest mechanical tool setters in its ranges. "The laser is about 10% of the price of the machine tool. Thanks to the mechanical tool setter, we can offer precision machining centres at lower prices," says Dominique Lutz, Sales Manager of Huron. "The skills of the Blum-Novotest laser were retranslated to their range of mechanical tool setters and touch probes. In addition and at the same price, the reactivity of Blum-Novotest is superior to other suppliers and their service is fast," says Bernard Echevard, Executive Director. These especially appreciated skills are the result of a long partnership between the two companies, whose teams are used to working together worldwide and exchanging feedback from the market. For Guillaume Thenon, Manager of Blum-Novotest France, "Huron was right at the start of the laser developments, particularly in the software development". This synergy was therefore natural when launching mechanical tool setters and touch probes.

## Fast and precise

Indeed, Blum-Novotest offers three types of measurement solutions for machine tools: Non-contact tool measurement by laser sold by the hundreds during the past few years in Huron machining centres; TC series touch probes for part measurement and checking after machining; mechanical tool setters. The "bestseller" touch probes are multidirectional TC52 (version for small machining centres: 40 mm diameter probe 2 m/min measuring speed, repeatability of 0.3 microns) and the universal touch probe TC50 (63 mm diameter probe 3 m/min measuring speed, repeatability of 0.3 microns). They use infrared transmission, the heart of the "Duo Pack" touch probe / mechanical tool setter with only one signal receiver, a software differentiating the active probe from the other during the cycle. Measuring cycles associated with the devices progress with the evolution

of the numerical control. If the ISO norm does not recommend controlling the part by means of production, the measurement in machine tools has the advantage of limiting the number of round trips between the machine shop and quality control. Even though the user often believes to have "bought a machine tool to produce, not to measure", the integration of measuring equipment in the machine, together with a program of verification during the machining cycle, leads to productivity gains. "We are improving the resulting part," says Michel Kimenau, Technical Manager of Huron. "We have developed our own software to position the cutting tool to calibrate our 5-axis machine with the probe piece. Therefore, we are now also able to give the necessary recommendations to keep the machining accuracy depending on ambient temperatures encountered in the workshops of users."

## Productivity gain

Indeed, technical co-operation is experienced daily. When a company machining parts in the aerospace industry needed four new large machines to increase its productivity, technical exchanges took several weeks until the decision was reached to equip the first machine with a Duo Pack. The three partners worked to develop a 100% reliable and especially fast tool breakage cycle. "Considering dead time in machining, the measurement cycle time should always be optimised to increase productivity and to get the desired part." The result was a must: the following three machines were equipped in the same way. Another company, from Germany, had to make a systematic check on machined parts: Sebastian Schmitt, Application Engineer for the German market, went to spend a day on site to show how to improve the productivity of the machine, always using Duo Pack equipment from Blum-Novotest. "Direct measurement needs less time than removing the part, taking measurement on a separate machine and finally reloading it. This process which is usually mounted on our 5-axis was adapted to process 3 axes in this particular case. A simple solution providing gain in terms of productivity."

## Win-to-win partnership

"Due to the continuous exchanges between our technical teams, we are often the first to receive news and updates from Blum-Novotest so that we can test them and maintain our competitive edge," says Bernard Echevard. "We are always looking for innovation to integrate it into our machines. It takes time and generates cost for product development, implementation, customer training ... but in the end, the added value is not negligible and differentiates us from the competition!" Guillaume Thenon agrees: "Huron is our main partner in France by far! It is a win-to-win exchange in both directions". The co-ordination between the two teams of Blum-Novotest and Huron is very important to the manufacturer. "Today, 80% of turnover is from exports. The first questions of our customers relate to customer service and accessories," says Dominique Lutz. "We have to respond to a Belarus customer within half a day! For a customer in Germany, we have to provide the spare part from one day to the next." It is well known that time is money...

>>> [www.huron.fr](http://www.huron.fr)





# Marching into the global market with differentiated injection mould technology

Located in south-western Korea, Gwangju City, whose name means ‘a city of light,’ expresses a sense of pride in addition to its name – Namdo Mold is strengthening its competitive power in the global market with its unique technologies. Namdo specializes in moulds and tools used in injection moulding machines for electronic and automotive plastic parts. Its technical power is represented by the Green Mold System, which has received a US patent. Currently, it is one of the leaders in the mould industry throughout Korea, including the south-western region which is continuously developing high value-added injection moulds.

## Entering the global market with differentiated injection moulds

As its name suggests, Namdo Mold has been dedicated to plastic injection moulds and moulded parts since its establishment in 1993. Its major product lines include mid to large-sized injection moulds and plastic injection moulded parts, which are the markets leading products with Namdo’s impressive R&D investment. Since the early years, Namdo has been producing and supplying various injection moulds for plastic parts used in Samsung Electronics’ electric/electronic appliances, including washing machines, air conditioners, vacuum cleaners, etc. Now, Namdo’s playground has expanded into the global market.

In 2011, Namdo supplied car interior parts for Ford, Chrysler, and GM in North America to win the USD 20 million Export Tower Medal from the Korean Government. Oh Daejong, CEO of Namdo Mold Corp., shared his knowledge of advancing into the global market by saying, “North America is the gateway to the global market. Once you succeed in that region, the door to the world market becomes wide open.”

Oh has long-standing relations with plastic moulds, which have been a family business for generations. He explained, “In 1993, when Namdo Mold was founded, the injection mold industry in the Gwangju region was well behind other regions of Korea. It was through our firm belief that the climate and soil were optimal in order for us to grow with our technical power in injection moulds.”



140 employees produce injection moulds and plastic injection moulded parts, and develop new technologies for injection moulding. Smart manufacturing is implemented with a CAD/CAM system, high-speed machine tools, and the latest injection moulding machines. Oh added, “Most mould makers start their business from injection moulding. On the contrary, we started as a business making mouldings and then added injection moulding in 2000 with the experience and know-how gained in plastic moulding.”

## Development of the Green Mold System

Namdo Mold recognises that a new growth strategy is required to accomplish one more take-off from the rapid growth of the past while departing from the present frame of management. “An enterprise based on technology” is the growth engine of Namdo Mold. To this end, Namdo Mold opened its Institute of Technology Research in 2000, where 15 mould specialists develop the technologies for high-cycle, high-productivity, high-efficiency, and high added-value plastic moulding in accordance with the latest global trend in the industry. The R&D centre closely co-operates with other research institutes to develop differentiated technologies.

The U.S. patented Green Mold System is one of the recent achievements developed in co-operation with KITECH. The Green Mold – a high gloss mould technology – applies to complicated mould systems with an increased degree of design freedom using a single temperature channel. The mould system features a high cycle rate by rapid heating and cooling and reduced energy consumption. In addition, the system produces high quality plastic parts free of weld lines with significantly reduced rejects.

“The primary purpose of the Green Mold technology is to prevent weld lines in the injection moulded parts,” says Oh, adding, “The technology was developed in order to aim at the products having complicated designs and high quality texture, such as high-gloss products, patterned products, products with fabric patterns, hair line products, and pearl compound products which represent the latest trend in the industry.” Oh, CEO and Design Engineer is an early adopter of IT products and technologies with curiosity and ideas in a wide variety of areas. In fact, many of Namdo Mold’s new product ideas have originated from Oh.

## High productivity and quality assisted by Blum-Novotest’s measuring systems

Namdo Mold’s core competitiveness is technical power and high quality products. It has invested in new technologies and equipment to accomplish Quality Management. In addition, the Environment Management in the workshop is a must for a medium-sized enterprise focusing on export. In this respect, Namdo Mold is proud of its up-to-date machines and equipment systemised in automatic lines. The mould processing line features LaserControl, touch probe, measuring software FormControl and other full-set measurement systems from Blum. These products are cost-saving and improve productivity by tool life cycle management, work data standardisation for zero rejects and reduced measuring time with unmanned manufacturing systems.

“These instruments from Blum are the key to productivity improvement. They reduce repetitive work, eliminate inferior materials and unnecessary process time and improve the integrity of moulds,” says Oh. “Blum’s products are even more than their reputation and our expectation.” As a result, Blum’s systems are applied throughout all of the process lines and are not limited to the finishing process.

Oh adds, “To standardise the inspection functions of all the production lines, we are operate 10 systems of LaserControl, TC50 workpiece touch probes and measuring software FormControl from Blum. All of our products delivered to Samsung Electronics are inspected inline and inspection sheets are printed automatically. This system greatly reduces the reject ratio and work loss time, and it improves the productivity.”

According to the development of the target industries – automotive, mobile communication, displays, and semiconductor processors – high precision, high value-added moulds lead the growth of the global mould industry. Oh has a positive perspective on this trend stating that “Presently, many Korean mould makers are making efforts to advance into the global market to cope with the intensive competition in the domestic market. What the Korean mould industry needs are specialized technologies, cost competitiveness, and shorter lead times, and I am sure we, as Korean mould makers, can cope with these challenges.”

Recognising the technical trend of the times and customers’ requirements, Namdo Mold is achieving successful growth. In 2011, the export of moulds and injection moulded parts to automakers of the USA reached USD 20 million. In 2012, it extended its overseas market to Japan and China.

## ‘Sensitive, human-oriented management philosophy’

Oh says that when he founded Namdo Mold in 1993, his only hope was to survive and grow, just like many other mould makers established in the early 1990ies. Today, his thoughts are just an aftermath and now he has turned his focus on Emotional Management, where all the employees share dreams and hopes. His ‘human-oriented’ management philosophy aims at helping the employees to realise their dreams and hopes.

As a matter of fact, many of the employees have been working with Namdo Mold between 10 to 20 years. Namdo Mold will celebrate its 20th anniversary in 2013, and it will keep growing to be a top-class mould maker on the basis of human-oriented, emotional management.



# The DIGILOG revolution – now also wireless

## TC64-DIGILOG

In TC64-DIGILOG, Blum-Novotest is introducing the world's first touch probe with a face-geared shark360 measuring mechanism which on the one hand operates wireless, on the other, combines all the advantages of a digital-analogue probe.

Heribert Bucher, Head of the Measuring Components Division at Blum, explains: "Back at EMO 2011, we caused a sensation among visitors with the "TC76-DIGILOG" hard-wired touch probe. However, this did not come as a surprise because it became rapidly clear right from the initial projects and discussions with customers that DIGILOG technology could revolutionise measuring technology for machine tools. On the other hand, potential users in the milling sector wanted, above all, a wireless version which we are now presenting in the form of TC64-DIGILOG."

Whereas the hard-wired version is primarily used in grinding centres – for example in generating grinding machines to determine tooth head and foot diameter as well for scanning tooth flank and tooth line on machining errors – the TC64-DIGILOG radio probe is the optimum solution for CNC milling and turning centres. At milling centres, positive tests have already been made in the area of 5-axis gear cutting. In the turning machine sector, a roundness, axial runout and cylindricity test of workpieces is envisaged for each analogue measurement and digital use as a normal workpiece touch probe is also possible.

For data transmission, the TC64-DIGILOG uses a proven radio technology which is already used in many of the company's other touch probe systems. Instead of using the usual data transmission via channel hopping or selection, the TC60 touch probe transmits data via in-house driven BRC technology. The advantage of this technology is based on each single bit of the radio signal running across the entire width of the frequency band, thus making transmission particularly resistant to interference.

A further highlight of the new DIGILOG probe is the patented shark360 measuring mechanism. During the scanning process, the integrated face gear produces a defined deflection direction at constant deflection forces. Any torsional force that may occur is absorbed by the face gear and thus has no effect on the measuring result. The switch and analogue signal is generated without wear by shadowing a miniature light barrier, thus guaranteeing the long service life of TC64-DIGILOG.

Analogue measurement always offers advantages when surfaces or lines are being assessed, for example when a workpiece surface has to be checked for machining errors. When a digital probe is used in such a case, a very large number of points has to be measured to achieve an adequate resolution, whereas an analogue probe can be moved in a 'scanning' mode over the surface recording more points in a fraction of the time. Astonishing speeds are reached; up to 2 m/min are possible with outstanding accuracy.

### Blum-Novotest wins WiR Innovation Award for DIGILOG technology



The WiR association (Wirtschafts- und Innovationsförderungsgesellschaft Ravensburg) has recently announced Blum-Novotest as the winner of the 2011/2012 WiR Innovation Award. The company has won the title for its new DIGILOG technology which is implemented in the touch probes TC76-DIGILOG and TC64-DIGILOG. The jury said: "With the DIGILOG measuring systems, users get highly precise results within a few seconds due to the facilitated scanning process across the workpiece surface. These time savings and the concurrent 100% verification of the workpiece to be measured makes the innovation extremely valuable to many industries and individual production steps."





At ixetic, the measurement cells are mounted downstream of the lathes. At present, the parts are sent to an inclined material tray, sorted according to rejects and acceptable parts. There are plans for adding a palletiser for storing the acceptable parts. This will make things easier for the operators. The actual measurement unit contains 14 measurement slides, developed by Blum-Novotest itself and fitted with inductive sensors. The measurement data obtained serves not only quality assurance, but is also returned to the machine to be integrated into the machine tool control system. This means that tool wear is compensated automatically. "As this is done, the control system has to take into account that there are always some workpieces on the conveyor belt," explains Gnannt. "In this way, adjustments only take effect a few parts further on."

The supplier had to fulfil these requirements: "It was important to ensure that the new machines fit smoothly into the established workflow and return measurement data correctly to the mill. My predecessor gave me a very positive report on Blum-Novotest, so we also commissioned them to supply the new measurement cells. It was important for us to be able to reach the standards required by the automotive industry in a reliable fashion." So the Blum-Novotest plant was required to prove its measurement capacity on acceptance. To do this, a master model and several workpieces were measured in various scenarios according to procedures 1 and 3 of the measurement system analysis, and then the measurement equipment capability parameters  $C_g$  and  $C_{gk}$  were determined. These had to be at least 1.67. The BMK 5 cells fulfilled these requirements without any problems. The current process is monitored using random sampling. After about 150 workpieces have been processed, the robot puts the master model (that is stationed in the measurement cell) into the measurement device and the system calibrates itself. This calibration is also carried out automatically after machine downtime or when an operator calls for it. The new plant is now running smoothly. It manufactures and tests up to 180 parts per hour in three-shift operation. The plant and the measurement cells can be adapted to handle the differing vacuum pump rotor variants very simply.

At present, the Blum-Novotest specialists are working together with ixetic to develop a concept to integrate a temperature compensation facility into the plant. "We would like to convert to a dry machining process. That would have many advantages," says Fuchs. "The parts would be clean and dry after processing, which would prevent corrosion. Furthermore, the cooling lubricant represents a significant cost factor. Per machine and shift, we consume about 100 litres of cooling lubricant. This needs to be replaced, and disposing of the fluid is neither cheap nor environmentally friendly. The disadvantage of dry machining is that the parts arrive at the measurement station hot, so they have to be measured with temperature compensation," says Gnannt. Concerning the technical hurdles involved, he explains: "In the temperature range involved here, I find non-contact measurement of the temperature too imprecise, whereas contact measurement means that there must be contact between the part and the sensor over three seconds. The challenge is to manage that in these short cycle times."

"I am very satisfied with our cooperation with Blum-Novotest," says Udo Fuchs. "The experience we have had with Blum-Novotest at ixetic for many years has been fully confirmed. The measurement equipment is fully capable of reaching the required tolerances, not just in the laboratory, but under production conditions – and round the clock as well. The solution that the developers at Blum-Novotest came up with – conversion to robot handling – allows for shorter cycle times as well as greater flexibility. And they managed the conversion quickly and efficiently. The integration of the new plants into the running production process was successful, even though moving manufacturing to another site made the task more complex. And as I mentioned, at that time, I simply did not need any extra challenges. In Blum-Novotest, we have found a reliable and competent partner for production-integrated measurement technology."

## Measurement next to the lathe

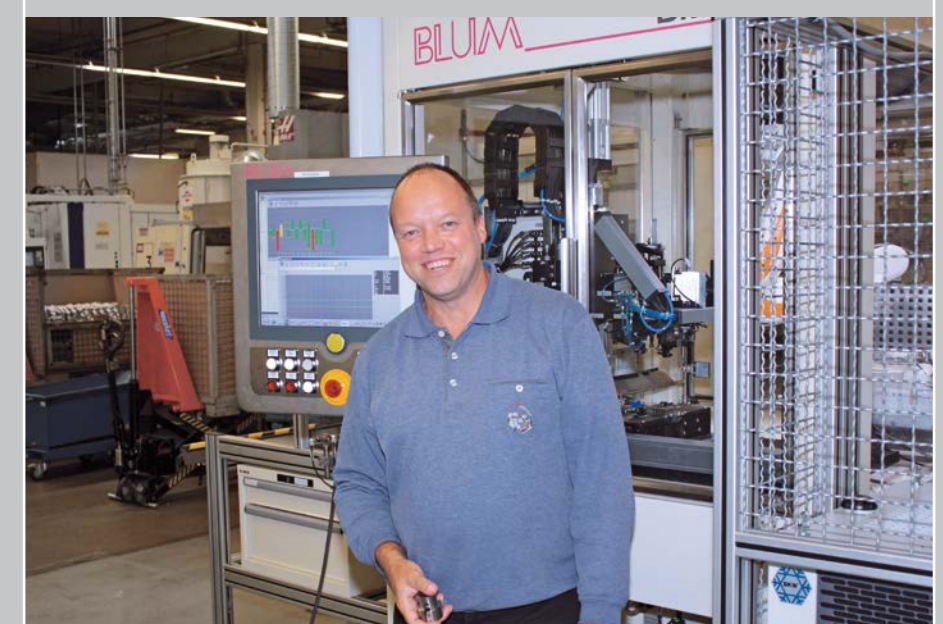
*Automotive suppliers manufacture under very exacting quality requirements. There is no way of avoiding the need to inspect each part individually – but the measurements that are required must be done within the short production cycle times. The automotive supplier ixetic from Bad Homburg has decided on the purchase of a whole range of machines for measurement solutions from Blum-Novotest.*

In 2006, ixetic emerged from the hydraulics division of the Schaeffler Group. The deepest roots go back to the Vickers Manufacturing Company, whose founder, Harry Vickers, invented the vane cell pump in 1921 which is used in power steering systems to this day, for instance. Today, the portfolio also includes vacuum pumps, e.g. for evacuating brake booster units, transmission pumps and other gearbox components, chassis pumps and control units for continuously variable transmissions. In addition to two German factories, ixetic is represented with manufacturing and assembly plants in Bulgaria, the United States, China and India. Distribution companies are located at other sites throughout the world. The employees, numbering over 1400, achieved a turnover of approx. 300 million euros in 2011.

During the crisis year of 2009, ixetic consolidated its manufacturing operations and transferred the production of vacuum pump rotors from Hückeswagen to the company's main works in Bad Homburg. The central component of this vacuum pump is a rotor made of a hollow cylinder that has a slit for the insertion of a rotary vane. The parts are hard sintered, so that they already fit well in unprocessed condition. Nevertheless, the functional surfaces must be machined. At ixetic, this is done at turnmill centres. In the course of transferring the manufacturing operation, the previous six production lines were supplemented with two more.

Udo Fuchs, a member of ixetic's technical planning department, recalls: "I had enough to cope with carrying out the move – the last thing I wanted was having to deal with a new measuring system with teething troubles!" It should be mentioned that there is an important difference between the old and new lathes: The new machines reach higher production rates, because they are loaded and unloaded in parallel. The Blum measuring machines placed downstream of the machining centre had to match these shorter cycle times. Fuchs explains: "The old automatic measuring machines had a cycle time of 16 to 17 seconds. The measuring machines must always run about a third faster so as to avoid becoming the bottleneck of the line. The new automatic measurement stations had to manage a cycle time of 12 seconds to accommodate the shorter machining time." An interesting challenge for the measuring and testing technology specialists at Blum-Novotest, who had also constructed the measuring machines for the previous lines. Blum's Divisional Director, Franz Gnannt, recalls the project: "We quickly identified the linear handling equipment as being the limiting factor. "Using a robot, we first of all gained the time we needed, and that also made it easier to pick up the parts that now arrive on two conveyor belts in the new plant."

Gnannt and his team implemented the new BMK 5 measurement cell that provides a standardised basis for configuring individual measurement equipment units. On the one hand, the BMK 5 represents a stand-alone solution for workshop manufacturing, and on the other hand, it is suitable for use as a post-process solution in a series production line. The measurement cell is equipped with a six-axis robot arm. As standard, this is supplied by Fanuc, but customers can ask for other makes to be installed. At ixetic, for example, Kuka arms are integrated into the cells. The BMK 5 itself can be fitted with several measurement units tailored to given tasks and it can be combined with a large number of optional features. For instance, palletisers, labelling devices or even parts washing units can be added.



>>> [www.ixetic.com](http://www.ixetic.com)

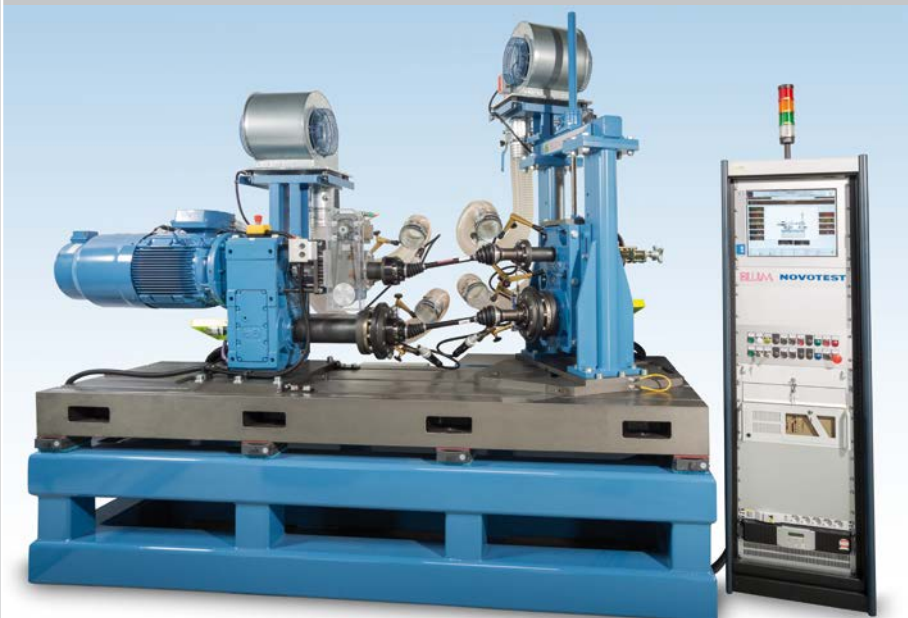


# Blum-Novotest GmbH: Test Engineering Division

*In each issue of the Blum-Novotest News, we plan to introduce our readers personally to a member of the company's staff. This time, we had the opportunity of interviewing Dr Joachim Maurer, Head of the "Blum-Novotest Test Engineering" Division, in the context of the opening of the new production building in Willich near Düsseldorf.*

Dr Maurer, since 1st May 2008 you have been head of the Test Engineering Division and are an absolute specialist in your field. Naturally there have been other staging points in your career. So please tell us a little about your personal and professional background.

Following a course in mechanical engineering, I went to the Institute for Hydraulic and Pneumatic Drives and Controls at RWH – Aachen. I had the opportunity of doing my doctorate in a hydraulics/control engineering subject there in 1990. My first job was at a water hydraulics manufacturing company. During the following period, I was fortunate enough to be involved in a very interesting and exciting field of hydraulics. It is also from this time that my initial expertise in handling relatively large projects stems, since one area of water hydraulics concerns equipment to forge presses and machines in the steel industry. In 1997, I started my own business. Through a joint project, I got to know Blum-Novotest as a company. At the beginning of 2002, I joined Blum-Novotest as a Project Engineer and Group Manager in the Testing Technology Division. In 2008, I took over the Division in succession to the previous head.



The Blum-Novotest Test Engineering Division offers a wide variety of solutions for an extensive range of industrial sectors. So please explain to our readers what products you produce and for which purposes.

From the beginning, we dedicated ourselves to the area of "quality optimisation". In other words, when it comes to their products we help our customers to achieve the requirements placed upon them by their clients. Through testing the finished product and conducting a functional test it becomes possible to satisfy this demand. At this point, we help our customers with Blum-Novotest test benches. The aim is to test the quality produced and detect possible sources of faults early on, even in the development phase. Our high-tech test benches are used in the car and hydraulics industries where they cover the areas of gearboxes, cardan shafts, steering assemblies and fittings, hoses and valves. On the one hand, the test benches are suitable for development and, on the other hand, they are also installed at the end of the production line for functional tests following completion.

As the person responsible for the Division, you have a key part to play in how well the company maintains its hold on the market. Would you care to reveal to us why you and your colleagues are so successful? What particularly marks out the company and what expectations do you have for the future?

Why are we so successful? I believe the correct answer to this question is our team itself. You see, in our company, each individual member of staff is highly valued. We all know that our staff is our most valuable commodity and each and every member of it provides a great deal of experience. If you pool these individual strengths in one team you're unbeatable! This is confirmed by many positive references we get from our customers. I'm speaking here about world-famous companies who collaborate with us. I believe all this marks us out and makes us a highly capable and powerful partner in our industry. And the future? From the outset, we find ourselves in a phase of constant growth. We'll continue on this path!

Now another question you, no doubt, hear quite often: How did the link between Blum and Novotest actually come about? It certainly can't be because of their physical proximity. What advantages result for customers of the Blum-Novotest Group?

Combining forces and emerging even stronger as a result has always been the watchword of Blum-Novotest. It was precisely also this factor that provided the trigger for combining the two separate companies. Blum, from the field of measuring and testing technology and Novotest, from the field of test benches. The result was a professional partner in the measuring and testing technology sector, able to offer everything from one source. We're now a big team that supports each other in every area possible. It's how experience is exchanged and tips are passed on. It results in a large 'composite' of information we can pass on to our customers as a benefit in the form of competence and expertise.

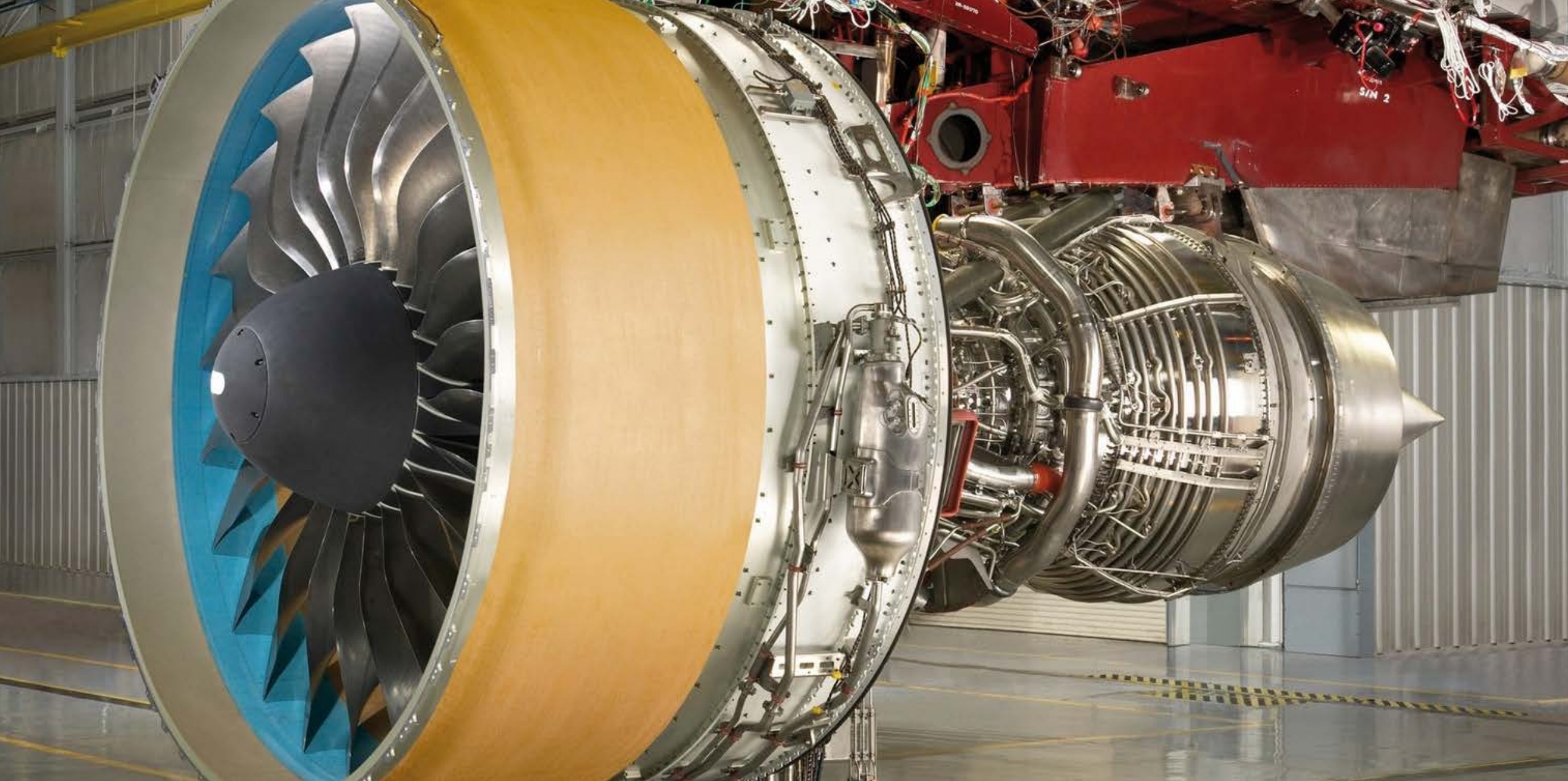
Thanks to the new building, the urgently required expansion in capacity can finally be realised. For what activities or areas will the space now created be used? What positive effects will ensue?

First and foremost, we want to take advantage of the expansion in capacity to give us greater mounting capacity not only in terms of numbers of units but also in terms of size. We now have a lot more room and, as a result, more opportunities to install multiple test benches and start operating them at the same time. Thanks to the more powerful cranes in the new building, we can now also effectively mount larger components. Last but not least, we now have improved storage options, too, enabling us to utilise the time until the start of installation in a better way.

All this brings considerable advantages in the area of production planning and control as well as inventory control and start-up of the test benches installed. We can now simply plan more precisely for the future and are looking forward to passing on these benefits to our customers.

GERMANY





Quality is of the utmost importance to the aerospace industry. Small wonder that leading engine manufacturers MTU Aero Engines use the LaserControl NT optical measuring system from Blum-Novotest on over 100 machines. The process stability which the laser system offers is particularly impressive, helping to achieve the best possible manufacturing results.



## Safety is paramount – in the air and at the production line

"When your car develops engine problems, you simply pull over and wait for a mechanic. But when jet engines fail in an aircraft, the lives of several hundred people are potentially at risk. That is why we at MTU attach the highest priority to quality! All our components must satisfy the close tolerances we specify – often to within just a few hundredths of a millimetre," explains Walter Strohmeir, user support representative for NC engineering with MTU Aero Engines in Munich. In addition to supporting machine operators with virtually every aspect of NC machining, his responsibilities include the programming of CNC routines and procuring machines and the peripherals to go with them. To fully meet the exacting production engineering demands of aero engine manufacture, the machining centres of MTU rely on non-contact laser measuring systems supplied by Blum-Novotest, for whose operability Walter Strohmeir is also responsible. In simplest terms, LaserControl NT is an optical measuring system for tool setting and tool monitoring. As well as providing basic tool breakage detection, LaserControl NT systems capture data such as tool length, radius, wear, cutting edge bursts and spindle and tool carrier accuracy at nominal spindle speed. The systems also compensate for spindle displacement at high speed, and can detect and correct tool clamping errors.

"Way back in the mid-nineties, LaserControl NT won out against strong competitors in the selection process at MTU Aero Engines as being the system with the most know-how. MTU subsequently purchased the first laser system, and its existing machines were gradually upgraded, while new machines were acquired with LaserControl NT already installed," says Daniel Czujek from the Technical Sales Department of Blum-Novotest and MTU support engineer. Today, MTU Aero Engines in Munich has over 100 Blum laser systems in use across the company. Around 300 to 350 MTU employees work with LaserControl NT in three-shift operation. A number of machines are also equipped with contact touch probes supplied by Blum. In terms of quality assurance, the Blum systems make a major contribution to the manufacture of all MTU engines. They include the new GP7000 family of aero engines which the Munich firm produces together with industry partners, with MTU taking responsibility for the low-pressure turbine, the intermediate turbine casing and the high-pressure turbine components. The GP7000 family of aero engines has been used in the long-haul sector, including scheduled services of the Airbus A380 since August 2008. In its class, this jet engine is a benchmark in terms of reliability, fuel consumption and noise emissions.

A major role in aero engine manufacture is played by so-called 'blisk machining'. Blisks – the term is a blend of the words 'blade' and 'disk' – marry maximum performance to minimum weight. The process involves integral rotor construction in which disk and blade form a one-piece component, rendering blade roots and disk grooves superfluous. "The chief advantages of blisks are their substantial weight saving, increased service life, decrease in the number of components through higher stage loading and the reduction in the amount of maintenance that is required. Most parts are made from titanium. For tool setting and monitoring, we deploy LaserControl NT throughout the entire blisk production line," explains Heinz Baumgartner, blisk production team leader for the medium-pressure compressor for the TP400 engine programme. He supervises virtually all of the machining operations that are involved in 'blisking'. Almost half of his team of 19 work with Blum systems.

Blisk facts and figures are impressive: It takes between 15 and 60 hours to make one workpiece, depending on the size of the component and the type of machining that is required. The parts that are produced are worth between 30,000 and 60,000 Euro. This makes the constant monitoring of the tools that are used to machine them so vital, for if there is a problem in the production process because of a faulty, worn or incorrectly fitted tool and the work is scrap, things can quickly get very expensive. Each component can require the use of about 10 different tools – from the humble twist drill to expensive special-purpose tools. At MTU in Munich, there was the odd occasion when the wrong tool was fitted in error, resulting in substantial losses. With the laser they can now be confident that such mistakes cannot happen again.

The laser systems also help maximise the utilisation of the machines. After all, in modern production facilities of the kind found at MTU where manning levels are low, there is not an operator on every machine all of the time. One operator is often responsible for several machining centres, so without a reliable monitoring system, it can take a long time for the fault to be found if there is a problem with a tool. The tool may be broken or it may be worn or its cutting edge may have burst, ruining the surface of the component. This is particularly true on weekends when running the machines unmanned on Saturdays and Sundays is essential because of the production costs of the products. "Our ultimate goal – to achieve the greatest possible machine utilisation – means working toward the industry standard of 5,000 hours per annum. The longer the machines run, the more we can keep costs down. This can only be achieved by working unmanned weekends," explains Heinz Baumgartner – "And with the support of LaserControl NT," adds Winfried Weiland, Sales Engineer at Blum-Novotest.

The excellent process stability which the laser systems offer benefits other areas as well – most of the machines that are equipped with LaserControl no longer require devices for tool presetting. Some machining centres are operated in parallel, but MTU's objective is to dispense with tool presetters altogether in future, so when the machines are fitted with new tools, the laser will capture the tool data to the nearest  $\mu\text{m}$  directly on the machine. This will eliminate human error when operators manually enter tool data that has first been logged on the presetter, such as keying errors and transposed numbers. Measuring directly on the machine is in any case much more accurate, as the data are recorded in the actual clamping situation and at working speed. All kinds of tools are measured with the laser measuring systems. The smallest has a diameter of just 1.2 mm, while the largest cutter head is currently 250 mm.

MTU also sees significant benefits from the NT technology introduced by Blum in 2003 which has completely eliminated occasional problems previously caused by coolant. "On this basis we can now theoretically move to the laser with the tool dripping with coolant and it still works perfectly. Together with the tool cleaning jets which were installed a few years ago, this solution represents a real quantum leap in process reliability. The good direct contact which we have established over the years with Blum is a major contributing factor. The same goes for the custom cycle which Blum have written to allow special-purpose tools with their non-standard profiles to be measured," says Walter Strohmeir.

"For us, it is the process reliability which LaserControl NT offers that is its most important feature. The excellent co-operation with Blum is another vital factor for our business because they understand what we want and can deliver it quickly. And they always give us useful suggestions, like how we can measure the tools even faster. Above all, however, the laser measuring systems give us the reliability and confidence we need for our machining processes," Walter Strohmeir sums up with evident satisfaction. Passengers should enjoy the peace of mind, too, thanks to the high quality standards set by MTU Aero Engines, at least whenever their flights are powered by engines from MTU.



# Visiting our user Yasda Precision Tools K.K.

*We introduce some machine tool companies performing accurate measurement and inspection with Blum products. This time, it is Yasda (President Mr Takuto Yasuda) who supplies machining centres which can meet the demands of high-precision machining of customers all over the world, and has this slogan “Striving to be the best, not the biggest”.*

Yasda, born in Japan and grown in the world  
Yasda was established in 1929 as a manufacturer of mainly cylinder boring machines. They developed many kinds of machines starting from precision horizontal boring & milling machines in 1964 and they have contributed “manufacturing industries” worldwide. They developed vertical machines which made direct machining of moulds possible in 1994 and micro centres which made precise micro machining possible in 2009. Since its establishment, YASDA has always followed its philosophy of “supplying high quality machines which can meet the demands of high-precision machining of customers world-wide instead of aiming at company growth”. Their novel and creative products are used widely in global manufacturing industries which are as YASDA aiming at high-precision machining.

Original products which do not allow other companies to catch up  
Yasda is highly valued in the industries of automobiles, ships, electronics, optical parts as well as die and mould makers. And they have entered the medical and aircraft/space industries in recent years. Let us introduce the latest main products.  
High-precision vertical machine YMC430: Linear motor drive machines targeted at realising high-speed and high-precision machining at high levels in the field of small die and mould parts, high-precision small mechanical parts, optical/electric parts, etc. They contribute to micro mould machining for LEDs, watches, medical instruments, etc.  
Horizontal 5-axis controlled machine: Their latest machine with the largest tilting table is targeted at the aircraft, space and energy industries. It optimised the performance required for machining hard-to-machine materials such as heat-resistant alloys, etc.



## Interview with Mr Takuto Yasuda, President of Yasda Precision Tools K.K.

**Blum-Novotest:** Yasda Precision Tools K.K. had the turning point of the 80th anniversary in 2009, right?

Mr Yasuda: It is helped by customers who like to use our machines in Japan and overseas. I think that the efforts stacked up by simple honesty as a machine tool manufacturer have borne fruit in current positioning and that our name can be remembered in the field of high-precision processing machines.

**Blum-Novotest:** Important point of the measures in relation to customers?

Mr Yasuda: This is to provide the highest product and service beyond the expectation by continuous technical development and self-study. Therefore, we have recently advanced the machine model development to open up a new processing domain based on the core skills and fundamental technology which have been cultivated so far. “YMC430” (in 2009), “YBM10T-100TT” (in 2012), etc. are the state-of-the-art machines for the field in which future growth is expected.

**Blum-Novotest:** What kind of feature does it have?

Mr Yasuda: YMC430 is a high-precision vertical type machine with a linear drive which can perform precise micro-machining. We considered the influence of oscillation, formed the whole machine with a low centre of gravity and made a high-speed drive compatible with low oscillation in a high domain. “YMC430+RT10” of its series has obtained the machining result which meets the JIS N4 grade for electrode machining of helical gears.

**Blum-Novotest:** Is YBM10T-100TT also aimed at a new market?

Mr Yasuda: It targets large-sized part processing which is expected to take the leading role in the industries of aircraft/space, energy, etc. from now on. It has a high torque spindle which can be driven by combining two motors, if needed. Therefore, its greatest feature is that it can deal with heavy cutting needing high torque and finish cutting requiring surface quality.

**Blum-Novotest:** YASDA has signed a support contract with Blum for machines with Blum-Novotest products, right?

Mr Yasuda: Currently, it concerns the service for the German area, and it is only with Blum-Novotest that we have signed such a support contract. It helps us because we sometimes cannot fully reply to a special request about a measurement function, even if it is in relation to a device of our machines.

**Blum-Novotest:** How is the response?

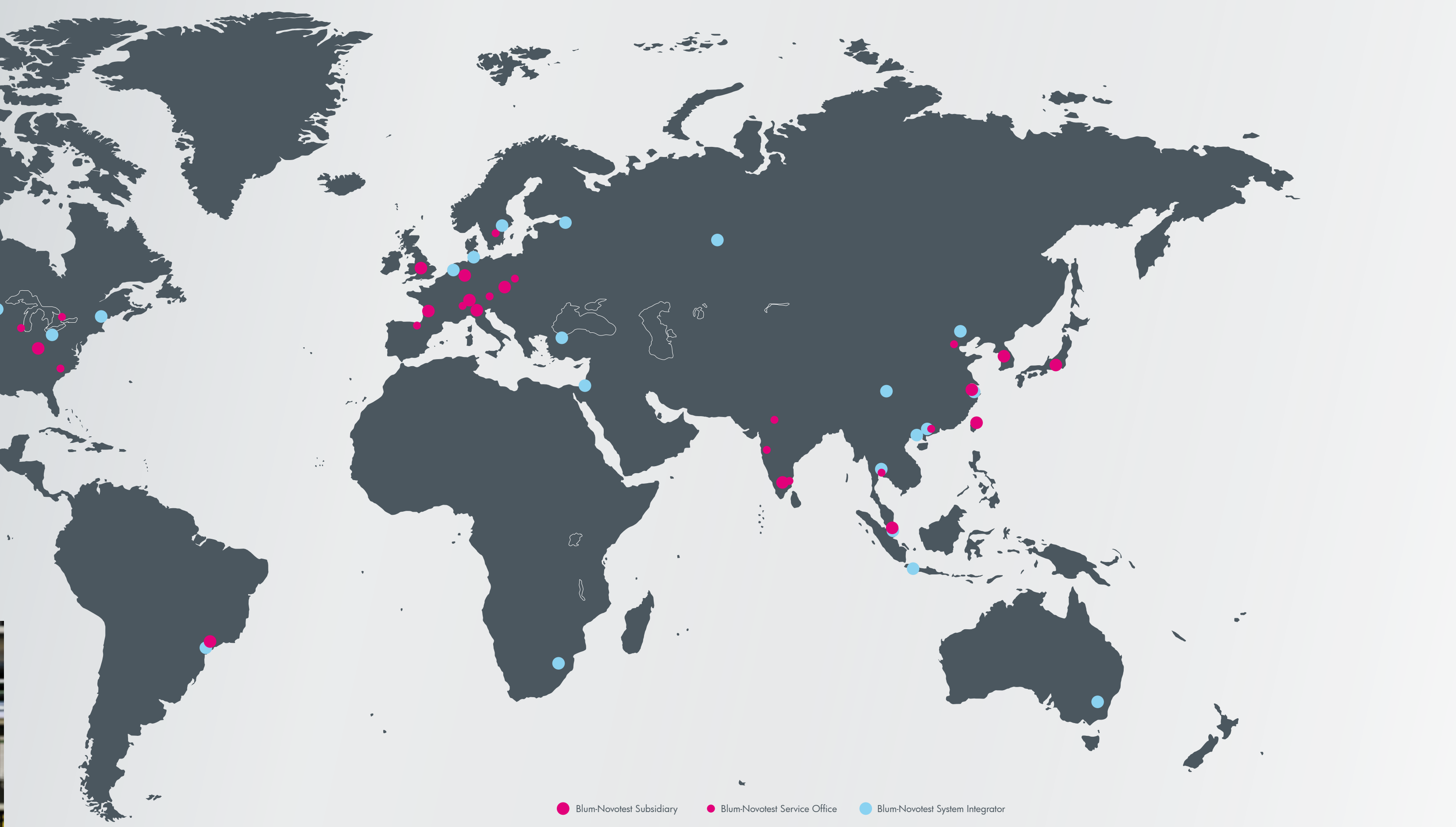
Mr Yasuda: Good reputation! There is a fixed structure, for example, when a question regarding Blum products is raised by a customer, the staff of Blum explains how to use the respective item, etc. It is very useful for us and our customers because other suppliers do not have such a programme. Since Blum has established service bases in the main areas worldwide, we would like to expand the same contract to the countries apart from the German area from now on.

> > > [www.yasda.co.jp](http://www.yasda.co.jp)

JAPAN







## The business divisions



### Measuring Components

The division of Measuring Components develops and produces high-quality measuring technology for machine tools. We offer laser measuring systems and probes for tool setting and monitoring, touch probes for workpiece and tool measurement, as well as sophisticated probing software for comprehensive production control during initial setup.



### Measuring and Testing Technology

The division of Measuring and Testing Technology offers state-of-the-art, well-proven solutions for dimensional or geometric measurement and crack testing mainly for rotation-symmetric parts in the automotive industry and its component suppliers. Furthermore, we are a capable partner for your individual measuring and testing demands.



### Test Engineering

NOVOTEST is the Test Engineering division of Blum-Novotest GmbH. NOVOTEST plans, develops and manufactures test benches for function, endurance and life time testing for the automotive, hydraulics and aerospace industries. The scope of supply and services includes planning, designing and construction, as well as the integration into our customers' automation systems.

Established in 1968 and based in Ravensburg, Blum-Novotest GmbH is one of the globally leading manufacturers of high-quality measuring and testing devices for the international machine tool, aerospace and car industry. The family-run concern today employs a staff of more than 340 at a total of six sites in Europe and in the USA, China, Japan, Taiwan, Singapore, Korea, India and Brazil. Together with specially trained system integrators and regional sales offices, this sales and service network guarantees comprehensive support for Blum products in use throughout the world.

### New Subsidiary in Brazil

In 2012, Blum-Novotest established their latest subsidiary in Brazil. The office is in the city of Campinas in the state of São Paulo, right in the heart of one of the largest industrial centres of Brazil. The Managing Director of the new company named 'Blum-Novotest Sistemas de Medição Ltda' is Mr Lilian Barraud, a well-experienced employee who has already worked for Blum since 2000. Mr Barraud knows the Brazilian market very well. After his years as a sales and service engineer in Spain and Portugal, he was responsible for the development of the Brazilian market for Blum-Novotest in 2006 and 2007. The qualified mechanical engineer then returned to Europe and took over the management of the French subsidiary of Blum-Novotest for the next four years. Together with his team, he is now a competent contact partner and consultant for customers in all Brazilian industries such as automotive, aerospace, medical technology as well as tool making and mould & die production.

The new subsidiary will serve as a sales and service hub, supporting the local system integrators, while coordinating the setup of other future sales and service offices. From the subsidiary in Campinas, all South American sales representatives and system integrators (service-enabled dealers) will be supported. "Through this local presence, Blum-Novotest GmbH is able to provide the best combination of excellent service and customer-specific problem solving capabilities for its customers," says Alexander Blum, President of Blum-Novotest GmbH. The new representation is competent in the provision of products and additional services for all three business divisions of the German metrology company Blum-Novotest.

"We are very happy that we could enlist Lilian Barraud who perfectly meets the requirements of this challenging task due to his technical, personal and language qualification," recapitulates Alexander Blum.



# Blum-Novotest donates to flood prevention in Thailand



"Blum-Novotest Cares" – Candy Ong, Blum Production Metrology Pte. Ltd., Singapore, with Alexander Blum, President of the Blum-Novotest Group and Dr. Rayboon Rassameethes, Director and Deputy Secretary General of the Utokapat Foundation

'Prevention is better than cure' has always been Blum's metrology equipment approach to business. This is evident in the allowances that Blum gives to manufacturers to make constant adjustments to their processes to prevent the generation of errors. At Asia Pacific Metalworking, Mr Alexander Blum, President of Blum-Novotest, said this was contrary to the way many manufacturers used metrology equipment, which was just for "counting the bad parts". It is also with the same conviction that when Mr Blum landed in Thailand after a mini Asia tour to China and Japan, he immediately presented a donation to a newly established charity working on community water management issues to help to prevent future flooding which had also affected many of Blum's customers in Thailand last year.

He elaborated further on how manufacturers were using on-machine metrology to enable their machines to learn from the constant measurements that are in progress. This will also ensure that output is kept within required tolerance levels regardless of thermal displacement of machine tools as they warm up and various other factors.

There is a general trend of manufacturing being carried out closer and closer to end users and this often results in a decrease in batch sizes and creates a greater demand for smaller automation systems that are easier to reconfigure and more flexible. Smaller manufacturers now have a more levelled field with the bigger boys through easier plug-n-play solutions.

## New representative office in Thailand

Mr Blum was also in Bangkok to oversee the establishment of a new representative office. He sees the potential in Thailand as a market of growing importance and it makes business sense to have a more direct presence in order to gain a better understanding of local manufacturers and to provide local customers with higher levels of service. This is also in line with global market trends in the manufacturing industry. Operations are shifted closer to end users due to higher labour costs in China and the rising value of the yen. This has also led to many Japanese manufacturers to move their production to other parts of Asia.

