

INSPIRED for TUBE

September 2023
N. 28

Milltek Sport
Investment to grow and diversify

Marcopolo
Maximum production flexibility

Mundo-Tech
A Family Affair in Aerospace Manufacturing

KTM
Optimization of the overall process

BLM GROUP

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OPINION

Innova 2023 - Vision. Technology. Solution.

The post-pandemic economy appears to be keeping an agile and fast pace, despite the many challenges the world presents in these turbulent times. Difficulty in sourcing materials and components has not diminished the demand for new machine tools to support this continued growth. State-of-the-art smart machines are needed, capable of ensuring sustainable development for a world in which even emerging countries like India are about to be confronted with the new concepts of Industry 5.0.
Italy is already well positioned, if one takes into account that in world rankings it is second among machine tools consumer countries and fourth among exporting countries. These achievements are a direct result of the country's unwavering focus on continuous and unstoppable innovation of its products and services.
In homage to these principles, BLM GROUP also continues the process of innovation with new products and new solutions, both for tube and sheet metal. To reflect BLM GROUP's dedication to advancement, the name of the biennial open house event that showcases their latest updates and developments has also changed to Innova 2023.
With the arrival of the new sheet metal laser systems, BLM GROUP is no longer just about tube, making the old open house name inadequate in capturing the current perspective. "Innova" represents new challenges but it is also an imperative addressed to those who aspire to be an active part of the coming future and desire to listen to the voice of progress regarding efficiency and sustainability.
Innova 2023, to be held in September 2023, has Vision, Technology and Solution as key words.
Vision indicates the propensity to look far ahead, taking advantage of the technological tools that science makes available to us. Technology is the result of research and development not only aimed at integration, computerization and greater process efficiency, but with an eye wide open to sustainability issues.
When vision and technology comes together one finds the solution, which is succinctly captured in the epilogue: after being urged to look at the medium term, after taking a look at how much technology could help me in getting to the goal, I identify the solution that works for me to get right there; that mix of product, expertise, support and reliability over time that give me the courage to launch forward, once again.

May it truly be an inspirational journey!
See you soon at Innova 2023

INNOVA



INVESTMENT IS KEY TO GROWTH AND DIVERSIFICATION

Milltek Sport - UK

Milltek Sport has, for the past 40 years, being at the forefront of the design and manufacture of after-market performance exhaust systems, but with one eye on the future it has recently created a £3 million Advanced Manufacturing Centre, adjacent to its Derby headquarters. At the heart of this investment are three machines from BLM GROUP that incorporate the very latest in Fiber laser, robotics and bending technology.

While Milltek Sport's core products will remain in demand for many years to come, the rise of electric vehicles influenced the company's decision to invest, a move that is allowing it to appeal to new markets, such as heat shield manufacture for EVs. The three machines from BLM GROUP are an ELECT102, an All-Electric CNC Tube Bender, a LC5 Combination Flat Sheet and Tube Laser Cutting System, and the technically advanced LT-FREE HIGH FLEX five-axis, twin-robot, fiber laser cutting cell.

With no history of working with BLM GROUP previously the choice of machines came down to a combination of capability, processes, quality, support, and technical back-up. Having carried out a whole market review the conclusion was that BLM GROUP could provide the complete package that Milltek Sport wanted, the level of support from BLM GROUP in the UK and Italy was seen to provide the 'best fit'. "Having made the choice of BLM GROUP as our supplier we were initially looking at the LC5 combination flat sheet and tube laser cell, but COVID restrictions delayed the order being placed. As soon as the travel restrictions were lifted, we visited BLM GROUP in Italy and convinced ourselves to take all three investment steps at the same time," says Steve Pound, Managing Director, Milltek Sport.

"As we are developing parts to suit the new laser technology, we are seeing efficiency improve dramatically, up to 40 per cent gains on some components"



The BLM GROUP machines allowed Milltek Sport to bring laser cutting in-house, this in turn led to greater efficiencies as they can produce the parts they need, when they need them, this just in time approach is generating improved cash flow through elimination of work in progress. These efficiencies are highlighted by the LC5, which integrates separate modules for tube and flat sheet processing to enable a switch from tube processing to flat sheet instantly, without any need to reconfigure the machine. Milltek chose the 4kW (12kW optional) fiber laser for their machine, a choice that gives them capability to cut stainless up to 15mm thick. Adding to this versatility is the electric sheet pallet change system with dual shelves for automatic loading of flat sheet up to 3m x 1.5m and tube up to 120mm diameter x 6.5m long, making the LC5 a highly efficient asset. The LC5 optimally integrates two systems: a dedicated module for sheet metal cutting and a dedicated module for tube cutting.

Similarly, the LT-FREE HIGH FLEX five-axis robot cell features twin robot arms that can be operated individually, with a divider allowing one part to be cut by the 2kW fiber laser, while another is being set-up; or, if the part demands it both robots can work in tandem. "As we are developing parts to suit the new laser technology, we are seeing efficiency improve dramatically, up to 40 per cent gains on some components," says Steve Pound. "For example, with the LT-FREE HIGH FLEX we can achieve cuts on bends that previously would have been done by hand using a plasma torch. We can now get multiple parts from a single tube, making use of micro joints which is delivering major time and material cost savings. One exhaust system section features six separate parts, that previously had to be cut manually, now the pre-bent tube is cut automatically in one operation, saving over 1m of tube and 28 minutes of time."

"While we were familiar with tube bending the move to laser cutting was a steep learning curve for us," says Steve Pound. "Because of the sectors we operate in batch sizes tend to be small, between 10 and 100 off. Therefore, we needed machines that can adapt quickly to our changing requirements, here we have found that the combination of the versatility of the BLM GROUP laser machines, along with the intuitive ArtCut software have been invaluable. We can now design and develop parts around the machines' capabilities, which in turn leads to a reduction in scrap or waste material and consistent quality, in tandem with the support we received from BLM GROUP we are confident that we can meet whatever the future puts in our way."





PIONEERS IN TUBE LASER CUTTING

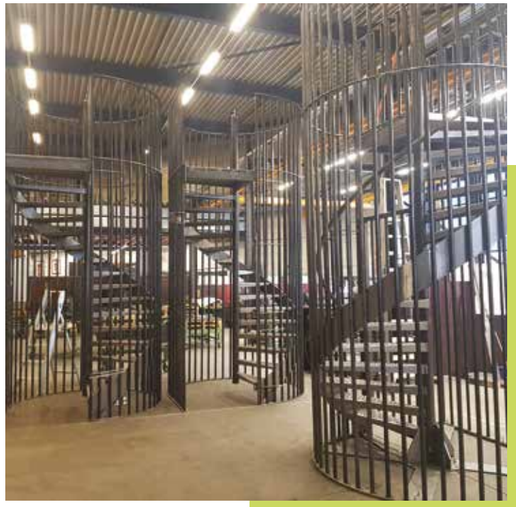
De Vries Constructie & Lasertechniek - NL

Market opportunities above 40kg/m
With 3 tube lasers from BLM GROUP, De Vries Constructie & Lasertechniek is a major supplier of cutting work for structural steel in the Dutch region of Brabant. The company is among the pioneers in tube laser cutting and has seen the market for precision cutting grow strongly over the past 20 years. “Tube lasers have brought us where we are today. And there is still plenty of potential in the market, especially for the larger sizes and beam steel profiles. That is precisely where we want to distinguish ourselves, but at 40 kg/m, we are now at the upper limit,” project manager Martijn Kanters and director owner Jos de Vries tell us.

> *Tube lasers have brought us where we are today. And there is still plenty of potential in the market, especially for the larger sizes and beam steel profiles*

Jos de Vries saw the potential of laser cutting technology for plate and tube at an early stage. The investment in an ADIGE-SYS LT Combo in 2004 marked the first step into laser cutting technology. “We saw particular potential in the steel market especially in pipes, tubes and profiles. But the market was not then familiar with laser cutting technology for tube, let alone profiles. Engineers back then were still constructing in strip and thinking in conventional operations such as sawing, milling and drilling. Over the past 15 years, this has changed dramatically and the demand is for cutting. We now have three tube lasers from BLM GROUP, namely LT712D, LT722D and an LT8.20 with 12.5m input and 8.5m output. Laser cutting accounted for 30% of turnover in 2009, but now it accounts for 65%,” says Martijn Kanters.

Steel structures
De Vries is mainly involved in supplying semi-finished products. “With our expertise, speed and good quality, we manage to attract a lot of work to us. For instance, we also supply supporting construction work, such as transport equipment and collision barriers, as well as to machine builders and the regional transport industry. We also do the design, manufacture and installation of steel structures, such as stairs, fencing, scaffolding, building structures and interior products.”



Logistics
According to Martijn Kanters, there is a lot to be gained from good logistics routing in the company. “In the limited space, we still managed to load all three tube lasers on two sides. So that the tube lasers can be loaded both at the rear with bundle loading for large series and small numbers with the step loader at the front. Because the machines face each other at the front, we can check, collect and prepare the output for dispatch on pallets in one central location.”

Construction market
“While we distinguished ourselves with tube laser cutting 20 years ago, we cannot do that now. In recent years, the supply industry in the Netherlands in particular has invested heavily in tube laser cutting technology. If we want to grow with the demand, the market is now too big to be unique in that field,” Jos de Vries explains. “Instead, we are looking for something our colleagues cannot offer. Now that the construction market and their engineers are also increasingly discovering the possibilities of 2D/3D laser cutting, we expect a growing demand from that corner. To serve that market even better, a tube laser with a loading and product length of 18 meters and a loading weight of over 40 kg/m would fit in well. So we are looking for growth in the larger formats (> ø 240 mm) and greater loading weight (> 40kg/m). In our current premises, we have only minimal room for expansion. New building would be a solution in this to grow even further.”

Programming
BLM GROUP, of which ADIGE is part, is particularly distinctive with their software ArTube. Developed specifically for tube machining, this software package is the key element linking software and hardware, making it easy, productive, flexible and efficient to use BLM GROUP’s tube lasers to their full potential. The 3D STEP files, in which most orders are now delivered, are imported into ArTube and converted directly into optimal cutting paths, significantly reducing programming time. “In addition, we also use ArTube to engineer structures ourselves. In the steel structures market, TEKLA is the standard. Until five years ago, that did not provide usable STEP files and we had to redraw everything in ArTube. Meanwhile, that software has also evolved and we can import orders from TEKLA directly into ArTube.”

> *ArTube software, developed specifically for tube machining, makes easy, productive, flexible and efficient to use BLM GROUP’s tube lasers to their full potential.*

BLM GROUP leading in tube lase
“The choice of the ADIGE plate/tube laser made by Jos de Vries back in 2004 turned out to be a good choice in retrospect,” agrees Martijn Kanters. “BLM GROUP’s tube lasers are extremely robust, given the high weights the machines process. This manifests itself in high reliability. From the point of view of quality and software, they occupy a distinctive position in the market for tube lasers.”

Family business
De Vries Constructie & Lasertechniek breathes the atmosphere of a close-knit family business. Besides father Jos, who runs the daily management, three more family members work in the company, including daughter Britt, who takes care of the transport of products to customers in the region. Thanks to its small size (25 permanent employees including temporary staff and interns) and strong commitment, De Vries manages to keep staff turnover low. “A quarter of the production employees come from internships. For us, this is a good way to attract new employees. But ultimately we don’t want to grow beyond 50 employees, because otherwise it will be more difficult to maintain the family character of the company,” explains Jos de Vries.



HIGH CUSTOMIZATION IS THE SECRET OF SUCCESS

Gym80 International GmbH - DE

Gym80 International GmbH manufactures machines and equipment for bodybuilding and medical rehabilitation. Founded in 1980 with its headquarters in Gelsenkirchen, Germany, it currently employs nearly 170 people and has delivered over 1 million machines worldwide. Their most important markets are Europe and the EMEA region, but in Germany alone, around twelve million people train on gym80 equipment.

The machines allow us to change production quickly. Considering our small series and many single parts, this was also an important decision criterion.

High degree of customization thanks to laser cutting technology
Gym80 places very high demands on the flexibility of its production technology. As a manufacturer of bodybuilding and rehabilitation machines it has found, in the combined laser cutting machines for tubes, profiles and sheet metal from BLM GROUP, a technology that can guarantee their desired versatility. To date, they have purchased two Lasertube systems and two flatbed lasers from the Italian group.
In the Gelsenkirchen plant, the spacious showroom immediately demonstrates the special customer orientation of gym80 International GmbH. Everywhere one turns their gaze, there are visually attractive bodybuilding and rehabilitation machines of different colors. In the middle, furniture and other furnishings are displayed for the interior design of sports and fitness studios. These accessories are also part of the gym80 product range. Design is very important to the company. This provides a unique selling point in the market, especially compared to Asian competitors.

“Ultimately, our customers are the people who train on our gym machines. They spend their leisure time this way and want to do it in a pleasant environment. That is why, in addition to meeting the training requirements, the machines must also be attractive.” This is how, Simal Ylimaz, owner of the company since 2019, describes his business philosophy. In addition to the highest quality of the products from an aesthetic, mechanical and functional point of view, gym80 offers its customers a very high degree of customization. Some machines have even been gold-plated.

Technology must reflect versatility
“With BLM GROUP’s laser cutting machines we now produce around 27,000 different types of parts, usually in batches, with a maximum production size of 200 pieces. We also often have to produce customized and prototypes, i.e. one-off parts,” explains Yilmaz, using numbers to describe how the high degree of customization is reflected in the complexity of the company’s production.
Some important components of gym80 products are oval tubes, which are a characteristic element. The ‘Queen of Machines’, as the company likes to call itself, has these special profiles specially manufactured with different cross-sections and thicknesses. They are patented profiles for these applications but are not easily machined with most laser cutting systems.
“For BLM GROUP, our oval tubes did not represent an insurmountable challenge, unlike other competitors,” Yilmaz stated, describing the main reason why the company purchased an LT722D Lasertube system from the Italian group in 2014. “Their technical experts were able to quickly cut our profiles and explained to us how to achieve maximum flexibility in the processing of our oval tubes and other special profiles,” he concludes.

The cooperation between the two companies has existed for almost 16 years with gym80 entering the world of laser cutting technology in 2008 with a combined LT9 COMBO machine from BLM GROUP, which allowed them to process tubes and profiles and sheet metal with high productivity and quality. The technology worked flawlessly, so a second combined machine was purchased shortly thereafter.

Three new laser cutting machines in two years
Today, the two combination machines continue to reliably produce for the company, and gym80 has added three new laser cutting machines between 2021 and 2022. Together with the LT722D, which continues to do its job consistently with its 2D laser cutting head, the new purchases completely satisfy the company’s laser cutting requirements for tubes, profiles and sheet metal.
In 2021, gym80 purchased a Lasertube LT7 with a 3D laser cutting head and 3 kW fiber source. This machine for processing tubes and profiles, with bar weights up to 23 kg/m and tube diameters from 12 to 152.4 mm, is still considered the fastest Lasertube system on the market. The same year saw the addition of an LS5 sheet metal system with longitudinal pallet changer and 10 kW fiber source for thick sheet metal. In order to provide itself with the greatest flexibility, the company had the LS5 sheet metal laser configured with a large working area of up to 4,000 mm x 2,000 mm.
All that was missing was a machine for laser cutting of thin sheet metal. For example, gym80 uses stainless steel sheets up to 2.5 mm thick for the facings and shields of its machines and training equipment. In 2022, the company had therefore set its sights on a second LS5 with a longitudinal pallet changer, configured with a 3,000 mm x 1,500 mm working range and a 6 kW fiber laser head, which means that, should the need arise,



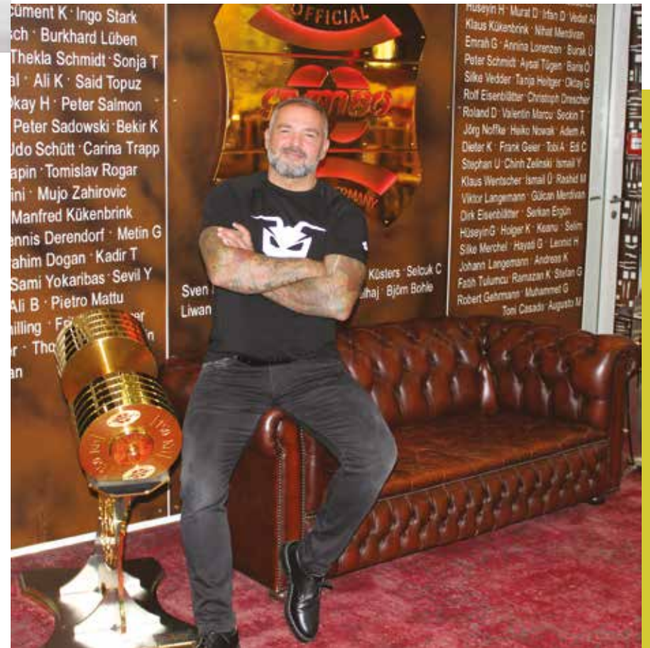


even thicker materials can be processed with this machine. Regardless of whether the material is thick or thin, the parts produced with these machines are characterized by very clean-cut edges.

Constant process optimization
On all four of BLM GROUP's laser cutting machines, the company takes full advantage of the automation and process optimization options for laser cutting, providing machine operators with maximum comfort in their daily work. Yilmaz, "The machines allow us to change production quickly. Considering our small series and the many individual parts we produce day after day in two shifts, this was also an important decision criterion for us."

In particular, Active Tools play a key role providing maximum automated efficiencies and "we can leave the machines running unattended," explains Yilmaz. For flatbed lasers, for example, the Active Nozzle Changing function is one of the highlights providing fully automated nozzle changes, cleaning and wear control. Active Nozzle Center, on the other hand, simplifies and speeds up nozzle centering, while the innovative Active Camera vision system helps machine operators make the most of sheet metal cutouts. On the LS5, with 10 kW fiber source, the Active Cool function dissipates heat using water to cool the laser head, ensuring consistently perfect cutting quality even with thicker materials.
On all four machines, the Active Speed function automatically optimizes the cutting parameters according to the complexity of the geometries, especially in the most demanding passages. On the Lasertube systems, the Active Scan and Active Weld functions guarantee the highest quality of produced parts. Active Scan measures, in fractions of a second, the real dimensions of the materials to be processed and corrects the production programs on the fly, to achieve perfect results even with twisted and deformed tubes. Active Weld automatically detects weld seams and orients the tubes so that the weld seams are in the desired positions. This offers maximum safety in the production process and reduces scrap.

Open options for the future
BLM GROUP's technology offers gym80 maximum flexibility in processing a variety of different materials. "With our laser cutting machines, we consciously look beyond our limits and have opened up many options for the future," notes Yilmaz.
In addition to the technology, the user-friendly software also played a central role in all gym80's investment decisions. For example, the ability for 3D drawings of the tubes and profiles to be cut to be automatically imported and converted from Artube CAD into production programs was key. At the same time, Artube offers the company the possibility of manually adapting the programs if necessary. In the spirit of Industry 4.0, the process is integrated with gym80's ERP system.
Yilmaz summarized, "After each of these investments, our machine operators asked to intensify the partnership with BLM GROUP. Also important to them is the speed of response and solution-oriented approach of BLM GROUP's hotline and customer support technicians. And they work on the machines with satisfaction."



"For our machine operators, the speed of response and the solution-oriented approach of BLM GROUP's technical customer support is also important."



A GLOBAL SOLUTION FOR PRODUCTION FLEXIBILITY

Marcopolo S.A. - BR

Marcopolo S.A. was founded in 1949 in Caxias do Sul, located in the city of Rio Grande do Sul, Southern Brazil. Over the years, the company has solidified its market position among the leading manufacturers of bus bodies in Brazil and currently holds a 53% share of the domestic market, making it one of the biggest bus body manufacturers in the world. One of Marcopolo's main objectives is to focus on the future of mobility, with an emphasis on new technologies and new modes of transport, including railways. The company currently employs over 11,000 people and has 11 business units; three located in Brazil and eight plants / offices abroad (China, Argentina, Colombia, Mexico, United States, Canada, Australia and South Africa).
The relationship between Marcopolo and BLM GROUP is well-established and began in 2014 with the purchase of their first three machines (an LT-FREE, an ELECT80 and a Lasertube LT7), to which two more LT7s were added in 2018.

BLM GROUP systems allowed us to make significant improvements in our product portfolio, along with increased efficiency in our production processes.

Luciano Resner, Director of engineering at Marcopolo, talks about the collaboration with BLM GROUP.
"From the beginning, the first systems we purchased from BLM GROUP helped us boost our production flexibility. They allowed us to make significant improvements in our product portfolio, along with increased efficiency in our production processes.
With the process automation offered by the BLM GROUP systems, we have optimized material use by introducing what we internally call ALTC (Advanced Laser Tube Cutting). This operational methodology allowed us to significantly reduce the number of bent tubes used in the vehicle, as well as the number of cut tubes. Previously, the various parts were subjected to numerous processes and a large amount of material was wasted. With BLM GROUP's laser systems, we can make the finished product from a single piece, reducing transfers, the number of processed parts and raw material waste. Furthermore, assembly is facilitated by using a specific system reducing the number of tools and jigs."

What are the main features of Marcopolo's production process?
"We have a very diverse production due to the highly customizable nature of the end product, focused on the different needs of our customers. Given the diversity of our products, our biggest challenge is raw material optimization, which accounts for a great part of the finished product cost. To minimize this, we are investing in innovation and research to develop more efficient, cost-effective components. At the same time, we need to have a system with an appropriate degree of automation for our type of products, which allows flexible production and offers excellent cost-effectiveness. With these criteria in mind, we examine the current scenario and analyze the future, to foresee an increase in demand and new products."

What made you prefer BLM GROUP solutions?
"The decision came after careful consideration. We chose BLM GROUP because of the global solution it offers. Obviously, the choice started with the products, but for us, it was equally essential to have programming software that allows for a very fast production process. Furthermore, with BLM GROUP we are guaranteed precise and punctual technical support and the constant availability of spare parts. Before making the choice, we also visited companies that were already using the systems we were planning to purchase and concluded that BLM GROUP offered the solution that best met our company's needs."

Did you find an answer to your needs with the introduction of BLM GROUP systems?
"Yes, the BLM GROUP systems are robust and reliable, with technology that allows flexible production and low operating costs. We can now significantly reduce material waste by standardizing production processes. We are very satisfied with the products and the service, in particular, we have been provided with easy access to information and have direct contact with the team in Brazil and, where necessary, also with the head office in Italy. We can undoubtedly say that the TCO (total cost of ownership) is adequate and low."

After the expected stop in production caused by the pandemic, you resumed production at a great pace. The launch of the new generation of vehicles on the market in 2020 was a bold decision and is reaping great rewards while looking resolutely towards to an increasingly green future.
"Marcopolo's strategic plan includes the development of new business areas and innovative technologies with high growth potential, such as the Attivi bus, the first all-electric bus approved in Brazil, and a hydrogen-powered bus that is already running in Australia. During the pandemic, we also launched our new Rail business division, which produces large projects for national and international railway systems. A recent initiative implemented by Marcopolo was the investment





“The BLM GROUP systems are robust and reliable, with technology that allows flexible production and low operating costs.”

in electric transport systems. We want to continue to expand urban mobility initiatives and support the development of new public transport alternatives, paving the way for cleaner and more sustainable technologies to be implemented in the future. The BLM GROUP system also accompanies us in this greener production phase, providing us with production efficiency and flexibility to meet market demands. After the difficult period of the pandemic, during which we were forced to stop production, we quickly picked back up in part due to changes in mobility. Now many people prefer travelling by bus or train rather than by plane, and consequently, the demand for our products has increased considerably.”





REVOLUTIONIZING THE WORLD OF BENDING

The new VGPNext software

VGPNext is the intuitive CAD/CAM programming software for BLM GROUP tube and wire bending machines. The application features a completely revolutionized graphical interface and is full of functionalities at the click of a button. BLM GROUP machines are constantly evolving to keep up with our customers' needs. The software development team also continues wondering: is it possible to simplify programming? Is it possible to streamline the use of tube benders and wire benders? Is it possible to improve the synergy between machine and software? VGP3D already responded very well to some of these needs, but we saw the possibility of integrating new operations and simplifying certain functions, to make the programming phase more intuitive. This is the genesis of VGPNext, with a completely revamped interface and new functions that simplify the operator's work, making system programming more practical and easier.

“A completely redesigned interface and new features simplifies the operator’s job, making system programming easier and more convenient.”

More methods for programming the part
VGPNext allows for choosing programs from a library where images and technical data are stored. The library contains all the programs on the server, making them available through preview images and different search filters, which make searching very easy. Customized tags can be assigned to the various piece programs and searches can be filtered by these tags, but also by section, material, date, machine and much more.



Importing a part program
Using B_Import, it is possible to call up a part or assembly in STEP or IGES formats in VGPNext, to automatically obtain theoretical coordinates. This saves a lot of time and allows even less experienced operators to gain familiarity with the program.

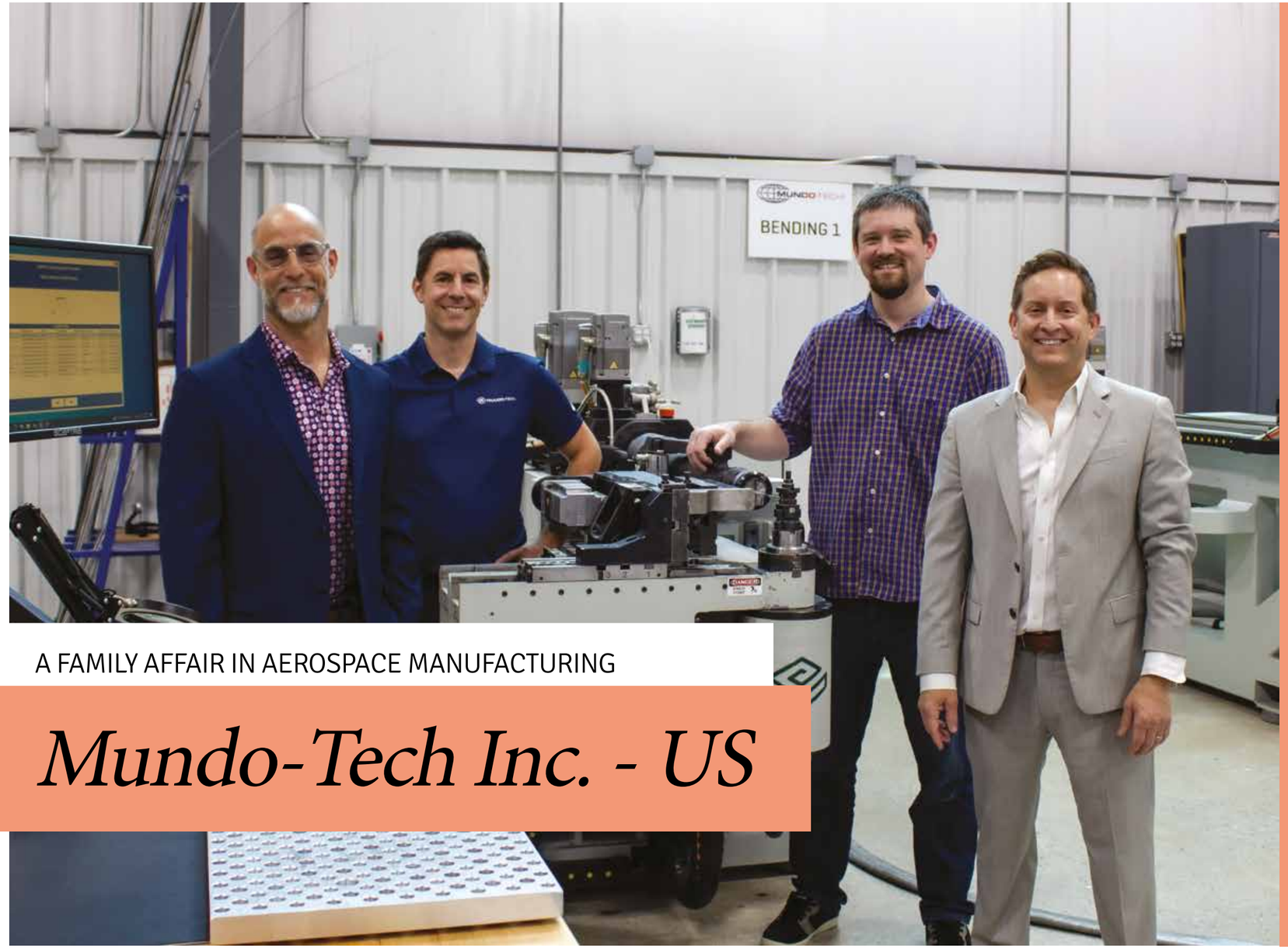
Modelling from scratch
Programming from scratch may create some difficulties for those who are interfacing with software for the first time. There are so many variables to consider: theoretical coordinates, springback, material elongation, feasibility of bending, choice of tooling, etc. For this reason, BLM GROUP’s software development team strived to create the entire process to be as intuitive as possible, dividing it into sequential steps and simplifying the programming flow with a ribbon bar that assists the operator by indicating missing steps, incorrectly filled data, default data and user-modified data. In this way, VGPNext shows where to intervene and allows the operator to confidently move from one step to the next, without losing valuable data. Having programmed the part and corrected the geometric deformations, all that remains is to simulate the feasibility with the 3D simulator incorporated into VGPNext.

3D simulation and time estimation
VGPNext is equipped with a realistic simulator that anticipates possible collisions between the workpiece and the machine, in order to avoid contact during manufacturing and ensuring safe production. Each machine is identified by a serial number, allowing the software to recognize the exact configuration of the machine and its mounted accessories. This permits VGPNext to distinguish between two machines of the same family with different configurations allowing the simulations to reflect the exact condition of the machine and therefore provide even more accurate cycle time data!

Defect corrections
Bended parts are known to have bumps, wrinkles or other types of defects. Correcting them by reprogramming everything from the beginning would take up too much valuable time and targeting the correction to be made requires an experienced operator. This is why VGPNext is equipped with a defect correction catalogue, where the operator can conveniently choose the most suitable correction without having to re-program the entire part program. The machine will automatically suggest which correction to make and set the parameters for the correction. If an experienced operator wishes to enter his own customized correction, he can do so by adding a new ‘custom defect’ with the corresponding correction parameters to the list.

Monitoring
This function allows the daily production of your plant to be monitored by checking - among others product variables - the workpiece cycle time, jobs completed, and the total number of rejects. It also provides a more complete overview of each machine’s efficiency throughout the day.

Plug-in
The plug-in screen manages additional functionality and allows for simulated changes in machine productivity with and without a certain function, in order to evaluate future purchases. With VGPNext, programming your bending plant will be even easier.



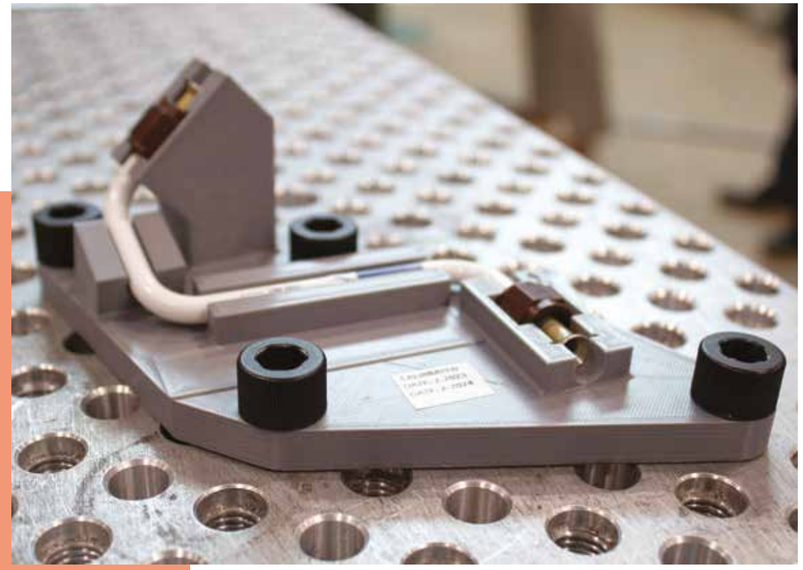
A FAMILY AFFAIR IN AEROSPACE MANUFACTURING

Mundo-Tech Inc. - US

Chris Harbaugh laughs at the suggestion that he has enough brothers and sisters to make a baseball team. And while that's not strictly true, there are certainly enough Harbaughs to field a game—or manage a successful business. "My parents had thirteen children, but only a few of us work here," he says. "I'm the vice president, my brother Joseph manages sales and estimating, and my older brother Mundo is the president. We also have a brother-in-law, Brad Filiault, who serves as our general manager."

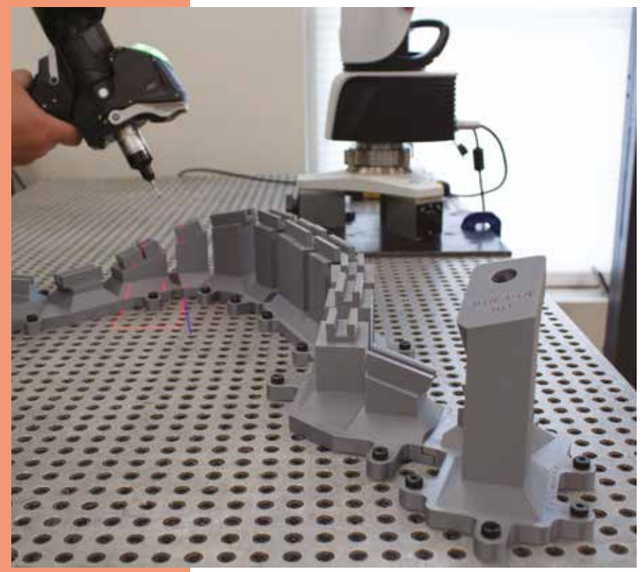
The "here" in the statement above is Mundo-Tech Inc. of Rogers, Arkansas, a small manufacturer in a not-so-small town nestled in the state's northwest corner, an area that's perhaps best known as the birthplace of Sam Walton and the first Walmart store, whose doors opened in 1962.

Aside from the heavy traffic that comes with living and working minutes from America's largest retailer's headquarters, not to mention a half dozen of its distribution centers, the city's long association with the Walton family is of lesser importance to the Harbaughs; they're too busy making hydraulic and fuel lines for another well-known company—Lockheed Martin—whose F-35 Lightning II fighter aircraft are filled with parts from this 50-employee tube fabricator.
"Our Mom and Dad founded the company in 1985, after he began making parts in his garage for an ex-employer," says Harbaugh. "It was a classic job shop story. Within a few years, he had enough work to move into a rented space, and a few years after that, he bought some land in Rogers and put up a small building. Four additions later, we're at 30,000 square feet and produce tens of thousands of parts annually for many of the big aerospace firms, Northrop Grumman, Blue Origin, and Virgin Galactic among them."



Passing the torch

Every day's a new adventure for this little Arkansas shop, he adds. Aside from the aerospace and defense work just mentioned, the company also serves the commercial market, providing a wide variety of custom components ranging in size from 1/4-inch or so in diameter up to 2 inches or more (more or less from 6mm to 5cm). Thanks to the F-35 contract, the team there have become experts at processing titanium tubing, but are quite adept at other materials as well, including mild steel, stainless, aluminum, and copper.
Mundo-Tech is ITAR compliant and ISO-9001/AS-9100 certified. It's also a Women-Owned Small Business. Owners George and Teresita began their well-deserved retirement ten years ago, but they still pop their heads in the door now and then, mostly to say "hello", but sometimes just to admire what their once-small venture has become. In the meantime, the younger generation of Harbaughs continues to build on their parents' success.

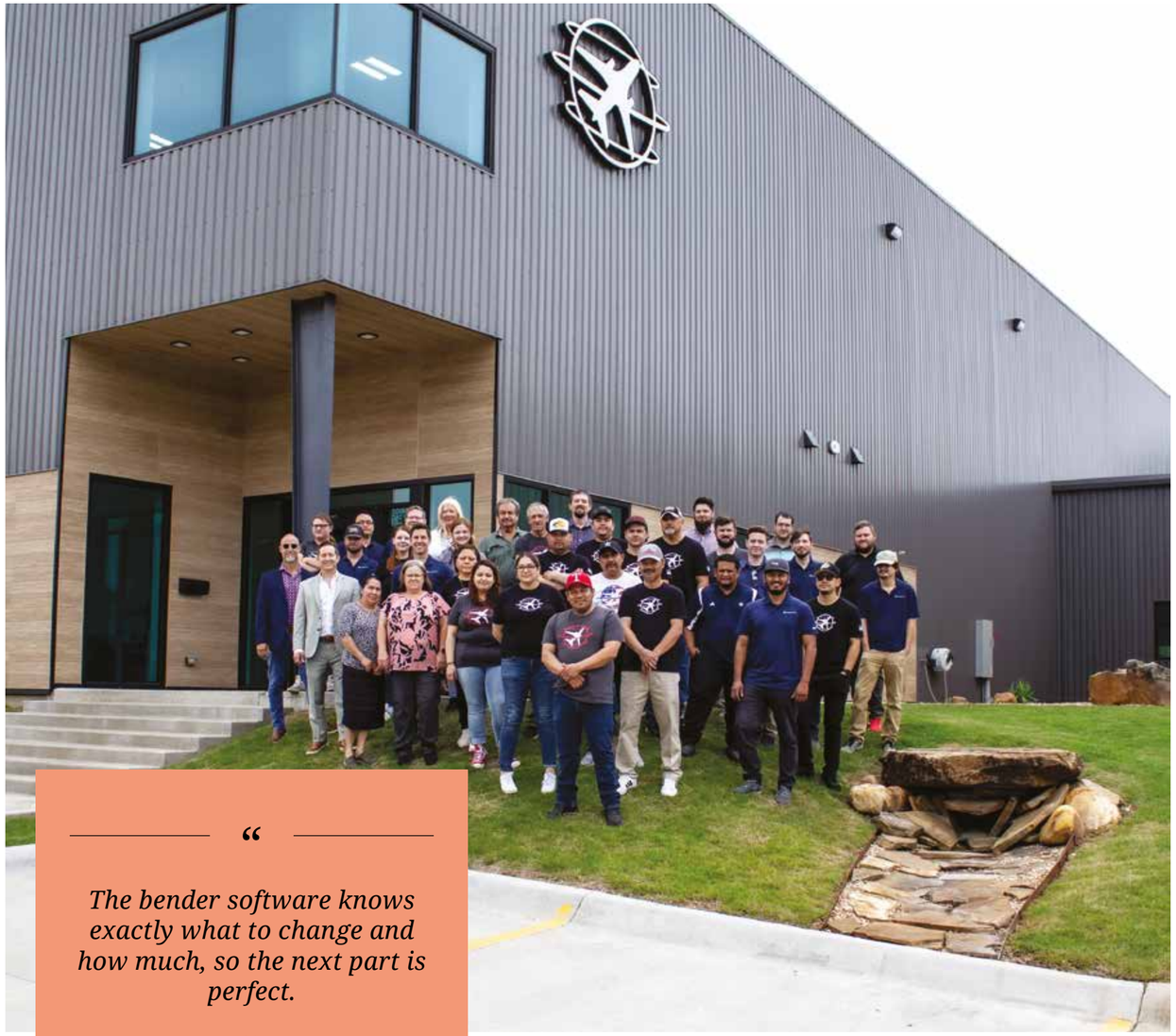


"Our services include everything from bending and forming to pressure testing, welding, swaging, aqueous cleaning, and nitrogen bagging," says Harbaugh. "We also do some CNC machining and sheet metal work, hardware insertion, that sort of thing. But simply put, if it's needed for tube fabrication, chances are we're doing it."
Mundo-Tech also launched a new division recently, called FIXTUR3D. As its name suggests, the startup designs and manufactures bespoke checking fixtures for tube fabricators, which it produces on a small fleet of Ultimaker fused deposition modeling (FDM) 3D printers. In fact, visitors to last year's FABTECH expo in Atlanta may have seen Mundo-Tech's newest products displayed in an unexpected place: Booth B7513, the temporary home to BLM GROUP USA.

> *"We make mission-critical parts for some of the biggest names in the aerospace market, and we need the very best bending technology available."*

The machine legacy

That's because BLM GROUP is one of Mundo-Tech's most important equipment suppliers, which only makes sense for a team of people who spend their days fabricating the most accurate, high-quality tube components they can muster. "As I said, we make mission-critical parts for some of the biggest names in the aerospace market, and to do that, we need the very best bending technology available."
The centerpieces of this technology are a pair of ELECT40 servo-powered tube benders from BLM GROUP. The first was purchased more than eight years ago, with the second arriving soon after. Harbaugh explains that aerospace components are understandably close-tolerance, and their previous brand of hydraulic bender was not up to the task. They needed equipment that could produce top-notch parts with minimal intervention. In addition, Mundo-Tech faces the same labor challenges as countless other manufacturers, and the ELECT machines have proven both easy to operate and dependable.
"I won't name the other brand, but we were constantly tweaking the machine to achieve any level of accuracy," he says. "Part of that is the weather here—the mornings are often cool and the afternoons hot, so there's some machine expansion to deal with—but I can honestly say that none of that affects the ELECT benders. That's why we're looking at a third machine later this year."
There's more to this story than good equipment. As Harbaugh points out, "If I need help with something, whether it's a new material or a new operator, I can count on support from the applications engineers and product managers at the BLM GROUP USA headquarters in Michigan. If needed, they'll pull in someone



> *The bender software knows exactly what to change and how much, so the next part is perfect.*

from Italy. Eric Chambers, Gunar Gossard, and everyone else at the company has been great to work with."

A workable workflow

This commitment extends to non-BLM GROUP products. The parts made at Mundo-Tech are very labor intensive, so the Harbaughs are always looking for ways to make their operations more efficient. For instance, they have gone through several iterations of metrology equipment over the years, and most recently implemented a vision system from Hexagon Manufacturing Intelligence, which has since been linked directly to the ELECT40 benders. "This was part of the driver for our move into 3D-printed inspection fixtures," he says. "Now, we can drop a part in, measure it in less than a minute, and send the dimensions to the bender. The VGP bender software is great—it knows exactly what to change and how much, so the next part is perfect. The improved workflow made possible by this marriage of technologies has definitely increased our productivity."

Harbaugh notes that Mundo-Tech services "a pretty wide customer base" and makes some very complex parts in small quantities. So not only is dimensional accuracy critical, but the changeover has to be fast and easy. Here again, BLM GROUP has brought some big benefits to the tube bending table. "The machines are equipped with a quick-change tooling system, so setups were already pretty fast, but we had some triple-stack tooling made that cuts them even further—for repeat jobs, we can just drop the whole stack in there and not have to change anything for days."

Compared to the days when a much younger Chris Harbaugh helped his father on a manual bending jig, shop life (and productivity) have improved immensely. "There was a time when my Dad and I were the only ones here who knew how to bend tubes. Now look at us. My brothers and I are blessed to have such a great set of employees. They're always innovating, always trying to accomplish something new and make the most of what we have here, which is why our next machine will probably be one of the SMART series bender from BLM GROUP. Even though we have very little turnover, it's still difficult to find, train, and keep talent, so in the interest of corporate growth, it's crucial to invest in machinery that's super user-friendly yet easy to automate. That's the future of manufacturing, no matter what you make."



OPTIMIZATION OF THE OVERALL PROCESS

KTM AG - AT

KTM AG, founded in 1992 and controlled by PIERER Mobility AG, is Europe's leading manufacturer of motorcycles and produces a full range of premium brands including KTM, GASGAS, and Husqvarna Motorcycles. With its innovative strength, PIERER Mobility AG is a technology leader in the field of two-wheeled electric mobility through its motorcycle brands. KTM Components GmbH is a wholly owned subsidiary of KTM AG and is responsible for the production of major components including the frame, chassis and exhaust systems for the KTM, Husqvarna and GASGAS brands.

In the production of the “performance-determining” components of its motorcycles, KTM strives to achieve maximum vertical integration, namely to keep the manufacturing process in-house as much as possible. Since 2019, an LT7 Lasertube system from BLM GROUP has taken a central role in the production of frames and exhaust systems.

“Currently, we produce about 1.2 million finished components per year, including vehicle chassis and exhaust systems. On peak days, we can assemble up to 6,500 assemblies. At our main plant in nearby Mattighofen, about 220,000 motorcycles of the KTM, Husqvarna and GASGAS brands were produced in 2022. We manufacture performance-relevant components such as frames, chassis and exhaust systems ourselves,” says Fabian Steinbacher, managing director of KTM Components GmbH based in Munderfing in Upper Austria. “Our focus is entirely on the performance and quality of our motorcycles. We do not compromise just to optimize component production costs,” says the industrial engineer.



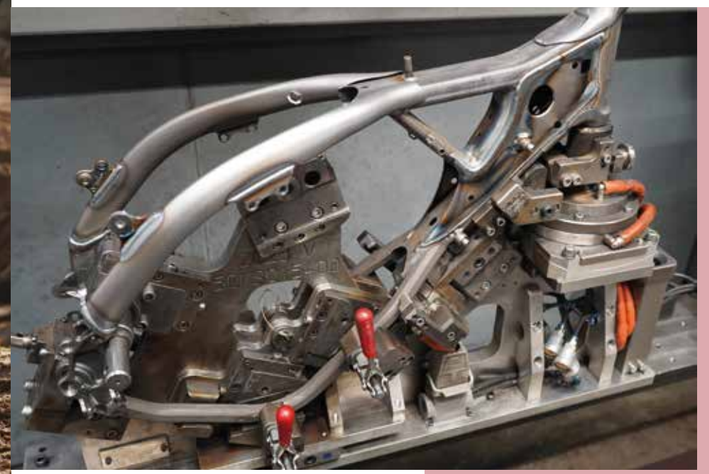
However, KTM is always open to new technologies that can make the production process more efficient, increase flexibility and productivity, and improve component quality. Especially if these technologies offer additional possibilities for optimizing the design of “Powered Two Wheelers.”

The use of BLM GROUP’s LT7 system for tube cutting fits perfectly into this philosophy. The installation of this machine was one of Steinbacher’s first projects when he joined KTM Components in 2017. Before becoming plant manager in 2019 and later General Manager of the company, in 2022. Currently, KTM Components employs about 650 people.

Benefits along the entire process chain

KTM employees have always been motorcycle enthusiasts, and superior quality is an obvious and inspiring value for them. “In a way, it’s part of our DNA,” says Steinbacher. In the racing world, every tenth of a second counts, and compromises on quality are unthinkable. “We exploit the technical potential to the limit and select the solutions that give us advantages along the entire process chain.” KTM Components’ goal is overall process optimization, rather than optimizing production costs per individual product.

It all starts with product development. Thanks to the LT7, this process has been greatly accelerated. “We can react more quickly and flexibly to market trends by experimenting with new solutions,” says Steinbacher, highlighting the benefits. This sometimes leads to surprising results. Recently, KTM launched a new race bike in a limited edition that sold out within minutes.



During the pandemic, cycling and motorcycling were among the recreational activities least restricted by worldwide lockdowns. Demand for KTM’s products increased greatly, and with its adaptability and production capacity, the company was able to meet the challenges. “We changed part of our product range from one day to the next to meet the needs of different markets,” recalls Steinbacher, who credits this strategy with increasing sales by about 20 percent in 2021 over the previous year in the corporate group (PIERER Mobility AG). In particular, KTM has gained significant market share in the United States, thanks to the key role played by the increased production capacity achieved through laser tube cutting.

With the LT7, KTM Components processes up to 20 steel and stainless steel profiles with different types of cross sections, making about 80 parts in batches of 150 to 300 parts each. In 2022, a total of about 1 million parts were produced with the tube laser. “As a first stage, with the LT7, we are cutting all the components that are to be bent in-house. In the future, we want to go so far as to cut all our tubes internally, including hydroformed parts. A second tube laser will be put into operation for this purpose. With the two machines, about 4 million parts per year will be produced,” says Steinbacher, looking to the future.

Thanks to the LT7, setup times are virtually zero, and production changes are extremely fast. This increases the flexibility of the company, which produces its components on demand without stockpiling them. This Just-in-Time production approach takes full advantage of production capacity.



ArTube CAD/CAM software is an essential element in ensuring high productivity in laser tube cutting because of its ease of use and comfort. After importing STEP files from the design, the software automatically generates production programs. If needed, manual adjustments can be made, and the 3D simulation provides a realistic graphical representation of the production process. Additionally, production orders stored in the software can be started with a single click.

Maximum precision in assembly
With active tools, BLM GROUP offers its customers several options to automatically optimize the laser cutting process. The intelligence of these solutions supports both the production of the highest part quality and increased productivity. Moreover, because manual operator intervention is minimized, they also eliminate human error.

For example, at KTM Components, the LT7 is equipped with the Active Scan optical measuring system to ensure maximum accuracy. This system uses laser sensors to detect centering errors (Y and Z axes) and twisting of the tubes to be machined in real time, transmitting the detected values to machine programs. The programs immediately correct the position based on the actual geometry of the tube, without slowing down the laser cutting process. As a result, the parts produced reliably match the required specifications, enabling the company to achieve welds with very tight tolerances.

During our production tour, Steinbacher emphasized the importance of this crucial aspect. He lead us through the workstations where frames are assembled in several stages, with the main tubes cut by the powerful LT7. “Our frames are composed of an intricate weave of up to 60 tubes. Along the entire production chain, tolerances must be strictly controlled so that the welds meet our very high quality standards. Here, even the slightest error could accumulate,” he explains. Laser tube cutting, along with bending and welding, constitutes one of the three critical processes at KTM Components during frame assembly.

In addition to the Active Scan, the company makes use of three other Active Tools. Active Tilt which optimizes the rapid orientation movements of the 3D laser cutting head when cutting and marking tubes, Active Speed that adapts the cutting parameters according to the speed of movement, ensuring optimal cuts in any condition and with any material being processed and Active Piercing which enables quick and reliable piercing without leaving any traces or cutting residue inside the tube.

For KTM Components, the LT7’s suction probe was also extremely important. This “internal spoon” reliably sucks up smoke and particles generated during cutting, along with any cutting residue in the pipes. For the stainless steel pipes in exhaust systems, this feature saves the motorcycle manufacturer the need to clean the inside of the pipes.

Usually, the cut fragments are sucked forward through the suction probe. However, to meet the needs of KTM Components, which wanted to pick up its larger stainless steel components via a robot, the BLM GROUP promptly developed a solution for discharging the fragments outward. To this end, they also made modifications to the unloading table at the back. “BLM GROUP provided us with extremely dedicated support from the very beginning. Because of their flexibility and willingness to find the best solution in every aspect, it was obvious that we would choose to work with them,” says Steinbacher.

1 MILLION

PARTS PRODUCED WITH LT7

“In selecting the most suitable tube laser for our needs, the LT7 seemed to us to be the most advanced machine. It keeps us up to date technologically. In addition, the local service provided by BLM GROUP gives us the speed and reliability we need in our process,” says the general manager who goes on to share future plans. “In the next step, we plan to install a tube center with an automatic tube storage system, where the installed machines will be loaded and unloaded automatically.”



A FAMILY DEVOTED TO INNOVATION AND HUMAN CAPITAL

J.M. Romo - MX

The history: from a small workshop to a benchmark for equipment

The J.M. Romo company was born in Mexico in the early 1930s as a small workshop with only employees, chromium-plating and nickel-plating metal parts. The idea was a huge success and the workshop attracted customers from other regions who brought their parts, even the most difficult ones, to have the plating process completed.

The business grew in both size and notoriety which led Jesus Maria Romo, founder, to broaden the services offered by his workshop starting with furniture production. The initial idea was to produce small home furniture, such as chairs, tables and desks, using state-of-the-art technology to achieve reliable and quality results.

Over the years, the company steadily expanded its portfolio of product offerings including products for catering and grocery (display cases, carts, checkouts, shelves, cabinets, displays, etc.), becoming a leader in the production of retail equipment.

Today, J.M. Romo is still a family business, now in its fourth generation, with more than 1,700 employees, a widespread presence throughout Mexico, and a solid presence in the United States, Caribbean, and South America.

Not just furniture and equipment
J.M. Romo currently consists of three operating divisions: Operadora J.M. Romo manufactures display solutions and equipment for commerce and industry, Romo Racks offers design and implementation of material storage solutions, and GDA is the subsidiary devoted to transportation and logistics. These three divisions work in sync to be able to provide customers with the best possible experience, whatever their need, from standard solutions to customized handcrafted products. In fact, customer needs are as varied as the businesses that turn to J.M. Romo: supermarkets, small and medium-sized stores, restaurants, and canteens are just a few examples.



“Customers are mainly looking for quality, durability and innovation, but also for standard products that guarantee value for the money, which is why we need flexible machinery that can meet all requirements.”

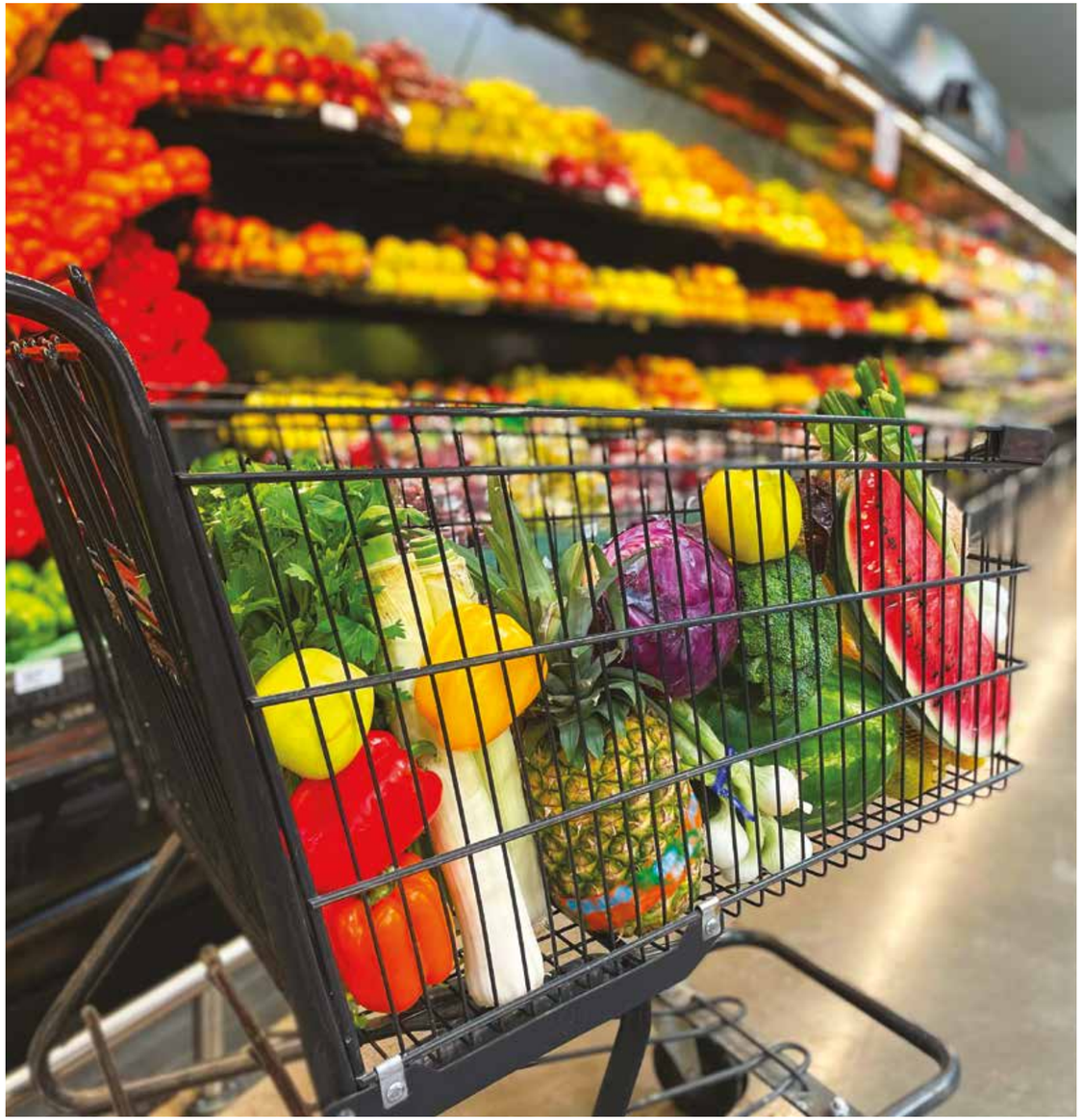


Customers are mainly looking for quality, durability and innovation, but also for standard products that guarantee value for the money, which is why we need flexible machinery that can meet all requirements.

Market challenges
“There are many macroeconomic trends that affect daily business, but you have to look at them as opportunities for improvement. When a problem arises in the company, the first thing to do is to analyze it, trying to isolate it to understand where it originates and find the best solution. Sometimes the problem stems from the supply chain, other times it is pressure from the customer, or problems with product delivery,” says Antonio Romo, great-grandson of the founder. “We always try to offer a solution as quickly as possible and maintain a good relationship with our customers. We understand their issues and that is one of the reasons they continue to choose us. They also appreciate our continuously seeking production process innovation and our focus on offering quality products and service.”

Why choose BLM GROUP?
“Before making any investment, we evaluate many factors: we obviously look for high-end machinery that are reliable and can guarantee a product with high quality and precision, but we also evaluate other factors such as the degree of automation and the quality of technical support. We started buying BLM GROUP machines in the 1980s and still continue to turn to them today because of the quality of their machinery and the support provided, not only for maintenance,





but also at the level of sales consulting with staff always ready to recommend the best machinery for every need. To date, our machinery fleet includes almost the entire line offered by BLM GROUP, with Lasertube equipment, tube bending, etc. BLM GROUP helps us stay on the cutting edge, supports our growth and allows us to be more efficient in production. In addition, thanks to their equipment today we can offer new product lines."

Automation and human capital

"For many people increased automation means job losses, but not for us. Automation for us means employing our people more effectively and productively; in fact, thanks to automation, we can increase production in other shifts. The introduction of advanced technology does not replace people, but supports us in the entire production process, simplifying the work of our operators. Human capital is crucial for us; our goal is to pursue the welfare of our workers and the local community even outside the production environment," says Antonio Romo. For this reason, the founder of J.M. Romo decided to build an amusement park for the exclusive use of employees, in the city of Aguascalientes. Over the years, the park has been renovated and now also houses gyms, classes, and sports fields where various sports can be practiced. Employees are guaranteed exclusive and free access every first Sunday of the month.

Challenges for the future

"The sectors we cater to are constantly growing, and we have seen the demand for our products increase in recent years, thanks to all the partnerships we have been able to establish in the company's nearly 90-year history. For the future, we want to aim to achieve 100 percent environmental sustainability for our plants and make sure that our production processes are as clean as possible in terms of emissions. We want to further establishes our presence in South America by opening new locations, and we are considering other foreign markets to expand internationally," concludes Romo.

"BLM GROUP helps us stay on the cutting edge, supports us in our growth and allows us to be more efficient in production. In addition, thanks to their equipment today we can offer new product lines."



FROM COMPONENTS TO DESIGN SOLUTIONS

Metalmeccanica Alba - IT

Metalmeccanica Alba, headquartered in San Zenone degli Ezzelini in Italy's famous and dynamic northeast, is a company that successfully serves its global partners and customers in the world of "Made in Italy" furniture and design. Founded in 1981 by the current co-owners Franco Ceccato and Daniele Gasparotto, the company began by processing metalwork for different sectors, then specialized in furniture, eventually producing complete product assembly kits. Today it is full service provider capable of meeting the needs of companies in the interior design and furniture sector through its vast array of supplied components, made-to-measure products and custom designs facilitated by their technical department.

Origins
"We were born in 1981 to produce metal components, mainly for the furniture sector, but not only. Our first experience with bent metal tubes was with gas stove supply pipes for two companies in the vicinity, Elba and SAMET, which produced cooktops and introduced us to the world of mild steel and aluminum tube bending," owner Franco Ceccato begins to explain. From bending aluminum tubes to making the components of metal chairs, which became the focal point of the business, was a short step. "We are in an area of chairmakers,'" Ceccato explains, "a company in Padua - Linea Ufficio - gave us the first machining on furniture tube and we started making chair frame components. Then, from machining individual tubes we moved on to making more complex assemblies. In 1986, for example, we had orders from customers asking for bed frames made from square tube, it was at that time that we purchased our first machine from Adige. A TT640 automatic tube and bar cutting machine, soon followed by a used tube bender. In the late 1990s we joined a group of companies under a company in Brescia that makes plastic seats, and by that time we were able to make the whole products. We produced the metal frame and were able to supply complete chairs with a plastic shell or ready to be upholstered later," Ceccato explains.
With a view to differentiating its offerings and expanding the number of customers, Metalmeccanica Alba's activities range from furniture components to design. "We are able to make components as well as finished products on a project basis, but above all we can independently design products, thanks to our technical department." Today the company employs about 60 people working in four warehouses totaling approximately 9,000 square meters of production area, plus an external warehouse for finished products. Turnover is also distributed geographically, from the early days when work was provided to local companies to today where about 70 percent is produced for export: 40 percent in Europe and about 30 percent outside the EU.

"The most interesting aspects of BLM GROUP products are flexibility and reliability"



The evolution towards dedicated products
The need to offer increasingly customized products is definitely a distinctive feature of today's market in all sectors, but it certainly peaks in the world of furniture where customers, and consequently manufacturers, want to be able to choose from a wide range of products. Ceccato explains, "The market is moving in the direction of increasingly customized, dedicated products. This has important consequences for production. There is a reduction in the size of production batches, which are instead increasing in number, with an ever-increasing variety of models and therefore processing." These market characteristics require production aimed at maximum flexibility, quick production changes and certainty of the result. "The company's strength is in offering durable and innovative design solutions. Today we work on the complete kit, less than 10 percent of turnover comes from those who only want the frame," explains Daniele Gasparotto, Production Manager at Metalmeccanica Alba.

The machines
"The choice of Adige was made from the beginning by choosing between two competitors, and so far we have been happy and satisfied with the



"The integration between machines is an important aspect in production organization"

choice made," explains Gasparotto, according to whom the most interesting aspects of BLM GROUP products are flexibility and reliability. He further illustrates this point when talking about the SMART, and the E-TURN in their possession, two latest-generation, all-electric tube benders particularly appreciated precisely for their flexibility and reliability. "The SMART is a mule," he explains, "it's reliable. I turn it on in the morning and turn it off at night and it always works." Flexibility is the E-TURN's most important feature, but the most important aspect for both is the fact that they are fully electric. The transition from hydraulic to a fully electric machine is crucial. "Before, the behavior was different from morning to night depending on the oil temperature and you needed an experienced operator to guarantee a certain repeatability in bending, now, with the electric machines the quality is constant." Indeed, the positioning guarantee given by the electric drives and the torque control to calibrate the clamping force, guarantees excellent results. The imminent arrival of a new E-TURN 32 undoubtedly confirms the customer's sincere appreciation.

Finally, it is worth mentioning the importance of integration between machines, which is a key aspect in production organization. Tube benders and laser systems produce the parts that feed robotic islands in which the production of the finished part is completed, and the process control that BLM GROUP's systems provide is a decidedly important aspect of production control. There is no doubt, for example, that the possibility of integrating bending with laser cutting guaranteed by the All-In-One process, by making systems even located in different plants (as is the case here) talk to each other, is a very important advantage that will certainly be further exploited with the new E-TURN 32 tube bender coming soon.





The relationship with BLM GROUP

Ceccato explains how the most interesting characteristic he found in BLM GROUP was the customer focus, which was a great compliment to his company. Ceccato remembers the first contacts. "We were in our early days and were a small company compared to BLM GROUP, but in spite of that, when we visited BLM we were received with full honors by the Sales Director who spent a lot of time with us and really made us feel that the company cared about us." Attention to one's customers is, according to Ceccato, an essential feature for any company and he believes it is the most important feature at Metalmeccanica Alba. "When customers come to visit us, they find great attention. We show our company and show who we are, how we work by producing everything in-house, and this is very important. There are competitors who produce everything outside, but with us, on the other hand, you can see that the production is done here, and at the end of the day the customer knows that they are not buying from traders, but from people who really produce."

A growing company

Metalmeccanica Alba has major development plans; a second floor is planned at the headquarters in San Zenone degli Ezzelini in which a complete showroom of their products will be located, and there is great confidence for the future. "Globalization has not brought great results, and from the return of production to Western countries, new blood is expected for our economy," Ceccato concludes.





MORE EFFICIENT PROCESSES AND SUSTAINABLE GROWTH

Godrej - IN

Godrej is a household name in India, celebrating its 126th anniversary in 2023! It is one of the most respected brands and organization in India. Established in 1897, Godrej & Boyce Mfg. Co. Ltd.'s first product was locks. Today, after 126 years, they still manufacture locks in addition to a large portfolio of lifestyle products and services, including India's space mission – soap, furniture, chemical plants, aerospace and missile components, logistics & warehousing solutions, white goods, cosmetics, etc. Godrej is also active in real estate development. Today Godrej employs 15.000 persons and has a total of 42 factories.



> *We chose BLM GROUP as a partner because of the technology that integrates the two important processes used in furniture manufacturing: laser tube cutting and tube bending.*

Roots in the past
Godrej started manufacturing furniture in 1923 and their first product was steel cupboards. At that time only wood cupboards were popular in India making steel cupboards a novelty. Later, other products made of steel tubes and sheets including office tables, office safes, chairs, school benches, hospital beds and other items were added to their product portfolio. The business was growing rapidly and in 2008 Godrej decided to bring all home and office furniture, furnishings and fitting manufacturing under its Interio brand.
Interio soon established itself with the same market reputation held by its parent, Godrej. Today Interio has 6 manufacturing plants across India, covering 160.000 sqm in total and employing 3.200 persons.
To satisfy the growing demand in terms of product variety and volumes, a technology upgrade of the manufacturing processes was required. The upgrade had to be flexible and versatile to fulfil tight delivery schedules and the variability in demand. For these reasons and the large amount of tube used to manufacture their metal furniture, Godrej contacted BLM GROUP to upgrade their manufacturing processes used for producing tubular components.

Head into the future
Mr. Maneck Behramkamdin, who was the Associate Vice President for Manufacturing for the Interio Division (now he is responsible for Godrej's Aerospace Division) started the discussions with BLM GROUP. "My objective was that of technology infusion in our processes, it was not only buying some machines. We considered BLM GROUP as a potential supplier because we had seen their machines in various exhibitions, we knew that their quality and market reputation was good, and the most important factor was they had developed the technology to integrate the two important processes used in furniture manufacturing: laser tube cutting and tube bending." Talking about the subsequent selection process, he added "We are a big organization, and our selection process is quite detailed and lengthy. It would not have been successfully completed if both sides would not have shown patience and perseverance. We were looking for the right combination of automation, performance, and price; we found that BLM GROUP was offering what we were looking for. After considering different models from BLM GROUP's rich product portfolio, we finally decided to buy the LT FIBER EVO for laser tube cutting and an ELECT52 for tube bending."

New technologies, new opportunities
These two machines are installed in Godrej's brand-new factory in Khalapur, approximately 60 kms from Mumbai. Installation and delivery were carried out when travelling restrictions related to the pandemic were present. Despite the added complications, Mr. Maneck noted that his experience of the remote pre-shipment acceptance, aided by the use of several cameras, was extremely positive. With the installations complete, the Godrej team working on the machines is very happy with their performance and enthusiastic about the potential offered by the new technology.
Mr. Neville Amaria, who has taken charge after Mr. Maneck's move to the aerospace division, voiced his optimism about the various possibilities on offer. "We have different products for different environments like offices, schools, and hospitals. Overall, we are market leaders with



> *We use about 40 different types of tubes: different cross-sections and wall thicknesses. Currently we have cut more than 400 tons of tube, which equate to more than 350 km of tube length, on the LT FIBER EVO.*



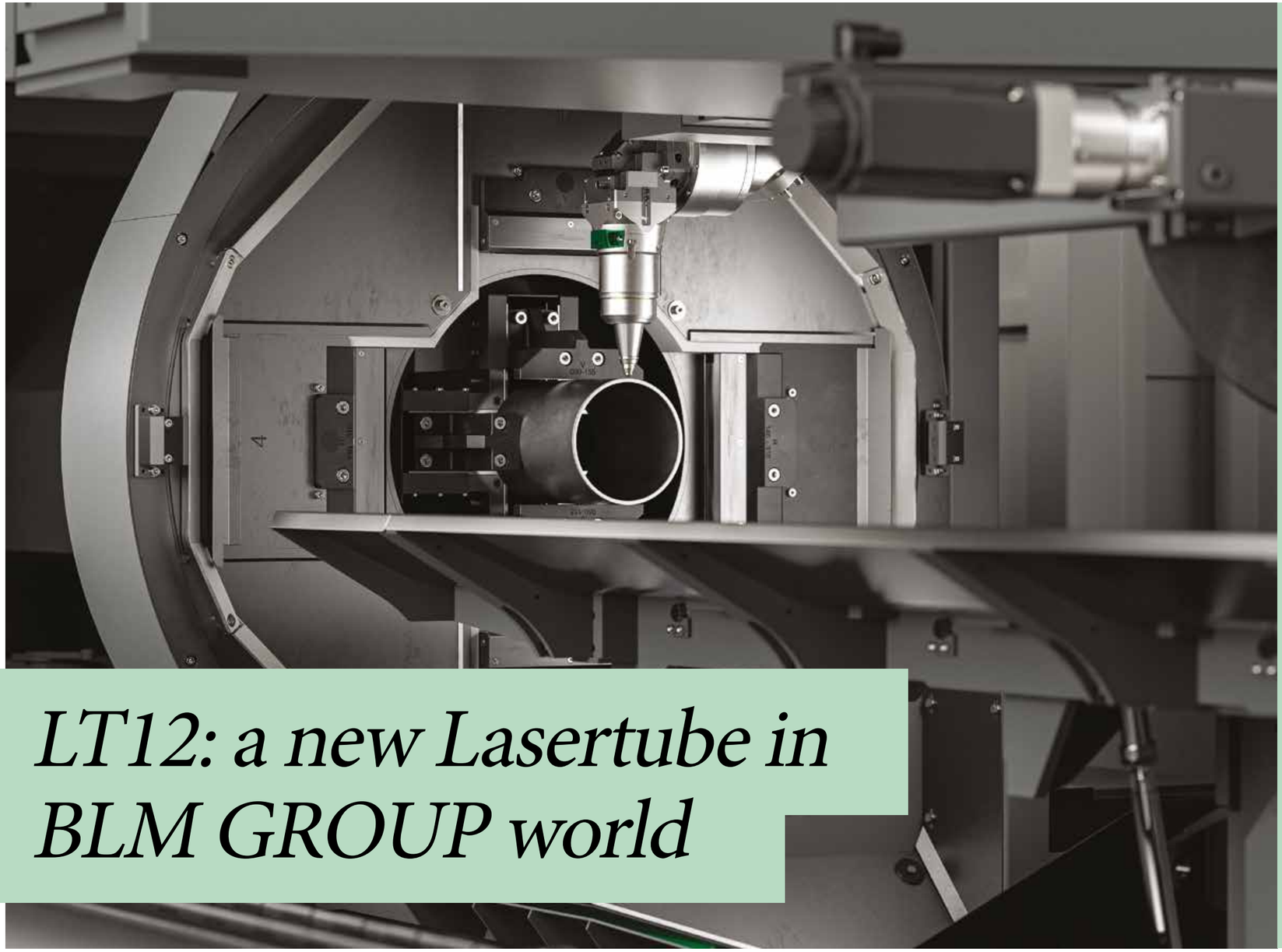
most of the production destined for the India consumer, only a small portion is exported through a dedicated division. Both domestically and abroad, we are present in both the B2B and B2C market-places and are used to dealing with the different challenges of each. For example, the demand for school benches is very seasonal and we must deliver large quantities in a very short time span. The same applies to hospital furniture for a new hospital building, once the building and all the infrastructure is ready, we have to deliver all the furniture as quickly as possible. We decided to upgrade our manufacturing process to deal with these challenges."

Improving process efficiency

How are the new BLM GROUP machines helping Godrej to deal with these challenges? Mr. Neville explained that they are heavily using the "cut & bend" technique and the reduction of process steps has improved efficiency and productivity. "We took some time to complete the learning curve, but now we are quite comfortable with the technology. The support we received from BLM GROUP's local team as well as from Italy was also key. Precise cutting produces good matching of parts which is essential for robotic welding. This has greatly improved the productivity of the welding process thus adding to the overall efficiency. We are not yet fully using the design features available in ArTube, but we are sure to use them as we design new products. We can say the same thing about the All-In-One concept which we have started using, but I would like to see more of it being implemented into our designs and manufacturing. ProTube is helping us to optimize our nestings and hence the material usage. It also helps us to monitor the progress of the production. These machines were installed less than a year ago and we have been using them extensively, after the initial learning phase was over. We use about 40 different types of tubes of different cross-sections and wall thicknesses. Currently we have cut more than 400 tons of tube, which equate to more than 350 km of tube length, on the LT FIBER EVO. We foresee a CAGR of 15% and armed with the new technology, we are ready to achieve this goal." Mr. Neville succinctly concluded, "Our objective is sustainable growth, growth that causes minimum harm to the environment. We have started our journey from Industry 4.0 to Industry 5.0 and in this journey the improvement in efficiency and productivity achieved by these types of systems is going to be of vital importance."







LT12: a new Lasertube in BLM GROUP world

At Innova Open House 2023, BLM GROUP will present the LT12, a new product for laser cutting medium-sized tubes and profiles. The LT12 is a versatile system with high performance, and we have asked Product Manager, Gianbattista Mazzoleni, to introduce it by answering a few questions.

Why a new system?
The goal is to fill a gap between two products in our Lasertube system offering: the LT8.20, which focuses on flexibility and performance, and the LT14, which is dedicated to processing long and heavy profiles. The LT12 is the solution for processing pipes, profiles and beams while maintaining a high focus on flexibility and performance, thus resolving the product gap.
By analyzing the utilization data of our plants, particularly those with the LT14 system which can process pipes up to 100kg/m in weight and 350mm in diameter, we observed that most of the production involved pipes smaller than 250mm in diameter and 50kg in weight. In practice, about 80 percent of the LT14's production could safely be completed by an LT8.20 system, which performs better in terms of process speed than the LT14, which, in contrast, performs best when size increases. Many times customers have requested more capacity than LT8.20, but the jump to LT14 was too great both in terms of system size and performance across the lower range.
LT12 was created precisely to give our customers the opportunity to process "light" pipes with great performance, but also the ability to process larger pipes, if needed. The market views BLM GROUP as a market leader in both large and small sized tube processing and expected something of equal quality excellence in the intermediate range as well.

What sectors is this LT12 aimed at?
Certainly, a very interesting sector is agricultural machinery. While this sector is a vibrant and dynamic world it has yet to realize the full potential of laser tube cutting technology as other sectors have. We see great opportunities given the volume of square tubes, rectangles, and even open profiles including "C," "L," and "H" profiles whose size easily reaches up to 300mm in diameter, precisely the size range of the LT12, used in agricultural machinery and there are also many structural assemblies that would benefit significantly in terms of reduced manufacturing cost from the use of a Lasertube system.
Of course, this new product is also of great interest in light construction, for the fabrication of canopies or small sheds, with tubes or beams up to 6-8mm thick and lengths typically longer than the traditional 6m. This last consideration allows us to unveil a key aspect of the LT12, a chain-loading system for 8.5m pipes. The decision to go beyond the 6m was primarily driven by our sizable United States market, where beams start at just under 8m in length. We also took into consideration that part nesting on the single bar improves with the length of the bar itself, reducing scrap, and also from the fact that, especially in construction, it is quite common for finished parts to be over 6.5m in length.

Can you describe this new LT12 a bit further?
Yes, the machine concept is similar to that of the LT8.20 with a mandrel in the tail and a lunette to support the tube in the cutting area. The first novelty is in the mandrel, which is interpenetrating into the lunette to ensure minimal scrap without the need for lunette or mandrel movement. Especially on large pipes, this results in time savings in the scrap reduction stage and is consistent with the desire to have a larger machine, but with excellent performance on bar processing time.
The quality of the tube support and handling systems both downstream and upstream of the cutting zone, has always been a defining and distinctive aspect of BLM GROUP's systems, which has always pioneered innovative solutions in this aspect, and here, too, there are innovations. In addition to a clever mix of the smart templates and chain-controlled tracking supports characterizing the LT8.20 and LT14, a special inverted smart template (with patent application pending) has been added. It operates from above to hold the tube in place while reducing wear on the support itself.
Of course, there are the Active functions characteristic of Lasertube systems and in particular the Active Scan, allowing the correct position and size of the tube being cut to be verified, ensuring real-time accuracy.
The focusing head is another special feature. It is our proprietary Tube Cutter head with an extension for a longer focal length, allowing it to process higher thicknesses than the LT8.20 (the machine can process tubes up to 62kg/m in weight) and it is able to tilt up to 50° from vertical, a full five 5° more than the LT8.20 and LT14. Active Piercing and Active Focus, which we now take for granted on our machines, complete the picture of a cutting system that provides precision, speed and flexibility.
Finally, the machine will have excellent accessibility and a relatively small footprint compared to the LT14 and will be equipped with 4 cameras, necessary to see the cutting area that is inaccessible because of the fiber source, which will give complete visibility over the entire system.

Not only lasers, but also machining
On pipes and beams, but increasingly in other areas as well, the possibility of adding some mechanical machining is highly appreciated because it avoids an additional processing step following laser machining. LT12 is equipped with a machining unit capable of making threaded holes from M3 to M12. A 16-tool





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magazine with tool integrity control allows these machining operations to be fully automatic, programmed directly during CAD/CAM design with ArTube.

Software

BLMelements, BLM GROUP’s software suite common to all Lasertube systems, drives us in a generally privileged position over other competitors. Of particular importance to LT12 are two packages dedicated to the world of construction and profiles: Assembler and Composer. Assembler is the package that allows users to import and rework complex structures parametrically. It has the important feature of importing files in IFC format constituting an indispensable support for all suppliers of structural components who normally use this standard. After importing the file, the project can be edited and managed as if it were an internal ArTube file.
Composer is the application that allows the creation of parts with a large number of machining operations using “prefabricated” modules that can also be automatically replicated in a parametric and transparent way starting from one’s ERP system.
Finally, machining of open profiles is greatly simplified by the availability of complete libraries of standard European, American, British, and Australian profile sections.
With this additional machine option, we fully expect LT12 to increase sector usage and the market by further expanding the range of applications of Lasertube systems and enticing customers and industries that until now have remained reluctant to deal with this type of technology, but certainly, also those who already have a Lasertube system and want to upgrade or increase production volume.





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