

# INSPIREDFORTUBE

June 2015 - Number 20

## *STRUCTURAL STEEL*

PERFECT MATCHING AT JOINTS!

## *TECNOLOGY*

INNOVATION IN EVERY INTERACTION

## *FURNITURE*

CREATIVITY IS OUR MOTTO!



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BLM GROUP EXPERIENCE



EVERY WHERE, EVERY TIME



BUSINESS BUZZ

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**PUBLISHED BY**

BLM GROUP  
Via Selvaregina 30  
22063 Cantù (CO) - Italia  
[www.blmgroup.com](http://www.blmgroup.com)

**DESIGN AND GRAPHICS BY**

WIP ITALIA S.r.l.  
C.so Buenos Aires 75  
20124 Milano - Italia  
[www.wipitalia.it](http://www.wipitalia.it)

**PRINTED BY**

AleCom S.r.l.  
Bregnano (CO) - Italia

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OPINION

## MAKE IT HAPPEN

“Technology is your business partner: it opens doors to new opportunities and widens your horizons”.

This is going to be our leitmotif for this year when we are having our open house once again.

Economists have always found a strong relationship between technological changes and long term economical development. The important role played by the technology in overall economical well-being is proven beyond doubt. Historically, every time there was an important technological evolution; structural changes stimulating investments in new areas followed resulting in further development. More often than not, the new technology has also helped in reducing production costs.

Our strategy is based on these lessons from history and hence we always develop systems that allows the user to add value to his offering. Whether through higher flexibility that can deal with ever reducing batch sizes (as low as one piece) or higher productivity for high volume production, our products offer an edge over others due to empowering technological contents. This is true in many cases: for a multi-technology system that carries out a series of process steps in a single cycle or the possibility offered by the technology to innovate and create completely new products.

This is achieved by innovation at multiple levels; easy to use systems (easy accessibility to everything – and only those things that are required), minimal environmental impact, lower maintenance costs, connectivity with other production and management information systems, capability of being remotely connected to monitor production process from anywhere in the world are some examples. These innovative developments would never lose their utility and value proposition. BLM GROUP’s empowering technology offers higher degree of freedom and the word freedom always has a nice, pleasant note to it.

Let’s make it happen!

*Giovanni Zacco*  
Market Development Manager





4

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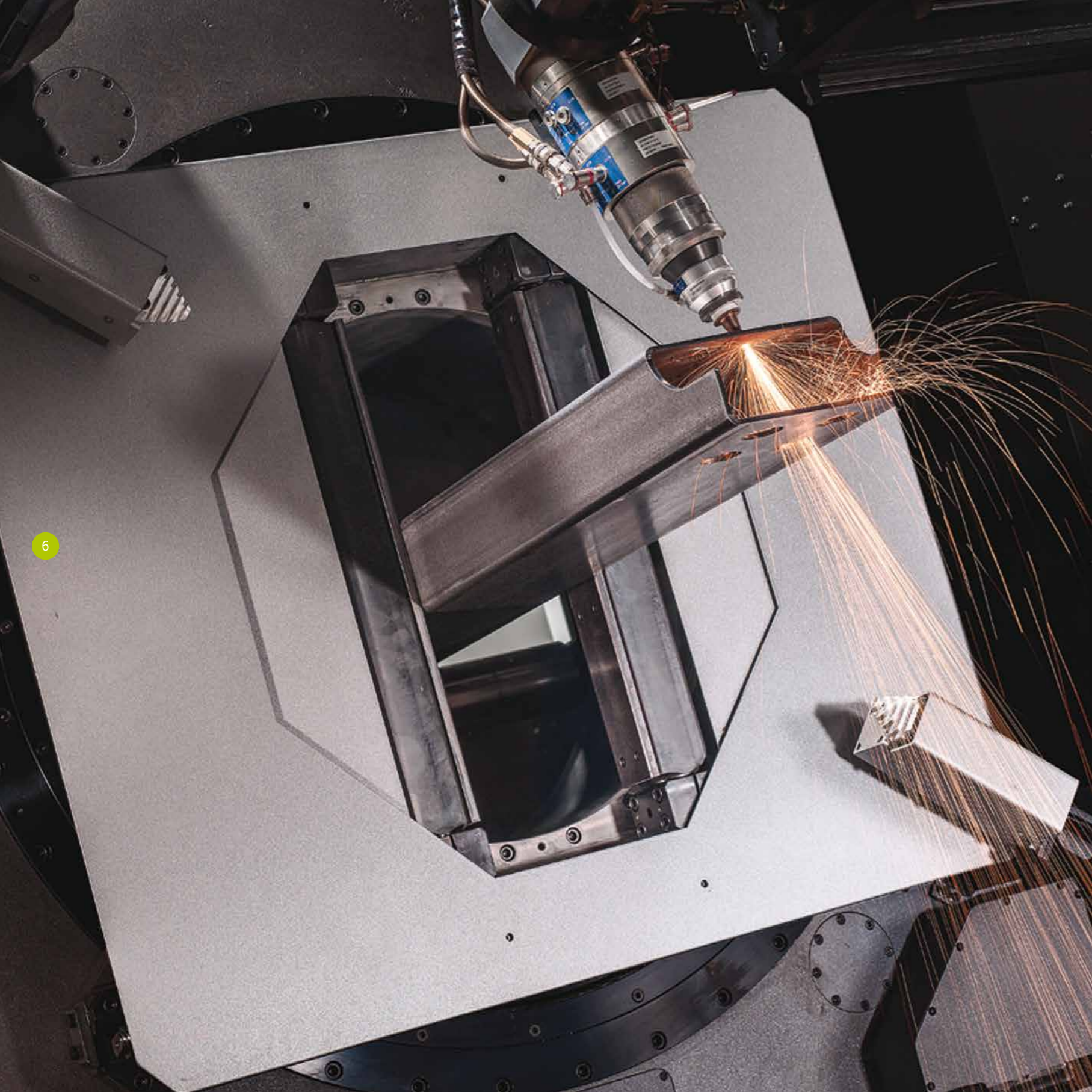


*STRUCTURAL STEEL*

## **GOTHAER FAHRZEUGTECHNIK**

**PERFECT MATCHING AT JOINTS!**

When it comes to structural frames, for example those used on cranes, no compromise on quality can be accepted. In this field, the customers of Gothaer Fahrzeugtechnik (GFT) know that they are in the hands of the right supplier who will also provide useful inputs for simplifying and optimizing their product design.



“Fewer manual operations and shorter production cycles with more flexibility and better quality at the same time: the LT14 laser cutting system offers many advantages for our customers and ourselves”, declared Jens Schwabe summing up their one year experience of working with the innovative 3D profile and tube cutting system.

Schwabe is CEO of GFT, a company specialized in the fabrication of very complex, custom-made tubular and sheet-metal structures that use fine-grained construction steel, for a worldwide customer base. . Established in 1997 with a staff of approximately 90 in Gotha, Thüringen, in the heart of Germany, GFT has more than quadrupled the number of workers now working in two different plants.

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The commissioning of the new ADIGE-SYS machine in the spring of 2014 marked the end of the days when GFT workers used to cut tubes using a plasma cutting system and then prepare the joints by manually finishing them. The weld seam preparation step was a dirty process and it was labor intensive. Quality variations were inevitable and these further complicated the robotic welding process of these structures.

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### A MAJOR STEP FORWARD

“As a result of the extremely high accuracy obtained by LT14 laser cutting machine and their short cycle times, we can offer new opportunities to our customers and simplify the design of their mobile cranes, vehicles and machinery. This implies considerable saving for them. Furthermore, we can improve the quality of their products”, remarked Schwabe.

As demonstration, he showed us a tube with two slots approximately 2 cm wide and 10 cm long at the two ends. The fitment of the corresponding sheet-metal component into these slots was perfect..

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The two components form a perfect joint in which a sheet of paper can be barely introduced. The joint appears to be remarkably stable even without welded.

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“We always have some persuading to do. Furthermore, not all the engineers and product designers working for our Customers are aware of the accuracy and outstandingly high quality which can be achieved by laser cutting today”, said GFT Construction Sector Manager Michael Spanuth.

“A higher cutting accuracy means less work in metal structural fabrication shop.” Even the most complex structures are not a concern anymore.

## SELECTION PROCESS REQUIREMENTS

The specifications drafted by GFT before starting the market survey for selecting the machine contained various parameters which turned out to be excessively demanding for most suppliers. There are not many tube laser cutting systems that can handle tubes longer than 8 meters.

Other manufacturers needed to adapt as far as the feasibility of importing CAD data in DXF format, for a total of some four thousand different products (result of past 10-15 years of activity), to the control system of the new machine. Furthermore, GFT sandblasts all tubes used for the fabrication before sawing to remove the oxide layer on the surface.

“We feared that the surface could be too rough to be successfully handled by the CO<sub>2</sub> laser beam”, said Spanuth. “ADIGE-SYS was very cooperative from the start and ready to experiment. They know their machines in depth”.

8

**14 meters**  
*is the length of the tubes that can be processed by*  
**LT14**



## A FAR-SIGHTED CHOICE

Their first short-list included three machine manufacturers and they decided to visit two of them. In their demo centers, the GFT experts tested the machines on nine complex sample jobs selected from their everyday production. Their mind was made up by the end of the day's visit to Levico. “It was obvious that tubes were ADIGE-SYS' bread and butter”, said Schwabe looking back.

The proximity between sales department and production department was also crucial. “Peter Echtermeyer, as BLM

**9** different types  
of components  
*were used as test pieces during the selection process for finding out the suitable laser cutting machine.*

9

GROUP direct liaison partner in our region, was knowledgeable and played a key role in our investment decision”. The success of the installation and functionality of the machine are the result of the close connection between GFT and BLM GROUP, also considering that the GFT experts had impeccably prepared for the machine installation. . “We involved our machine operators in a timely manner in our investment decision and prepared them to handle the forthcoming new means of production”, concluded Spanuth.





## GROWTH POTENTIAL

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In the meantime, GFT is currently operating two work shifts on their new laser cutting machine. They are expecting further growth in job-shop activity which should occupy the third work shift in the future.

“High flexibility and quality, combined with our extensive expertise make us an attractive supplier”, announced Schwabe.

What changed for machine operators? “Working with the LT14 cutting machine is very versatile and interesting. It is fun!”, declared Tobias Wehr enthusiastically speaking about the LT14. The handy control with automatic loading and unloading of tubes before and after cutting makes his everyday life much easier.

## A CLOSE PARTNERSHIP

The partnership between GFT and ADIGE-SYS intensified considerably after the perfect commissioning of the machine. BLM GROUP Deutschland is already using this installation to demonstrate system performance and flexibility to interested customers.



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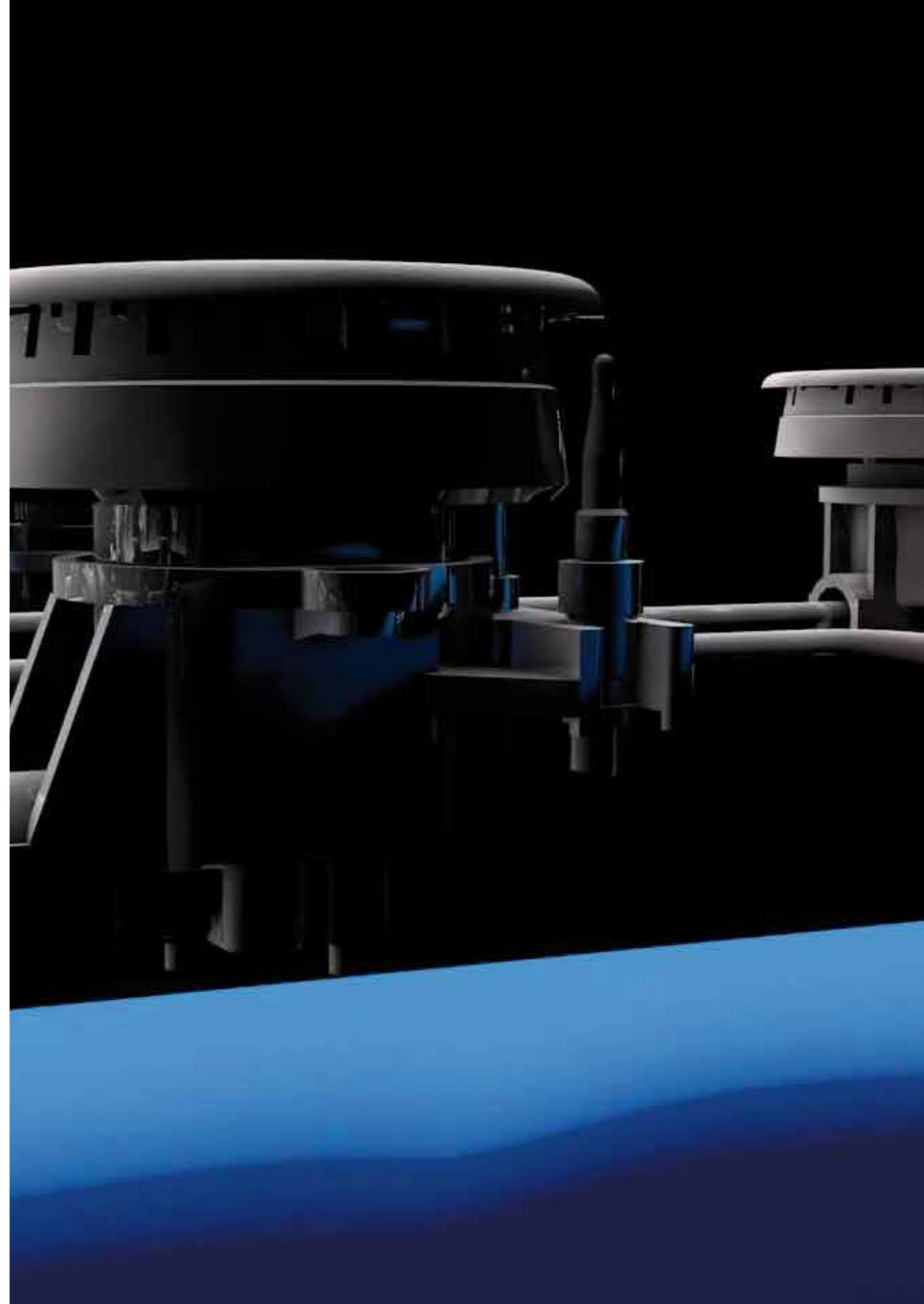


HOME APPLIANCE

## COPRECI SYSTEMS

### NOT A PIPE DREAM

Copreci Systems is a production company specializing in the production of pipes for gas ovens, stoves and professional kitchens. Innovative technology and human resource development are the elements on which the company bases its production competitiveness and which responds to changes in the market.



We're in Mareno di Piave in the province of Treviso to meet the engineer Alberto Bellomo, General Manager of Copreci Systems, a manufacturing specialized in the production of pipes for gas ovens, stoves and professional kitchens. We are speaking about cooking, and free standing cookers or gas barbecue and dryers.

"Our company came from a previous experience of at least 15 years in the field of household appliances as the Rapid Gas - says Bellomo - but in 2001 the Group Copreci decided to acquire it to expand its product range and start to give customers the option to purchase a subset already composed, including piping and valves, which are their core business "

### THE GROUP'S CENTRE OF EXCELLENCE

The Copreci Group is an international manufacturer with seven plants in Spain (home to two), Italy, Turkey, Czech Republic, China and Mexico comparable to Sisters, but not twins, in the sense that each of these has its productive vocation and precise connotation.

"We were not created by the Group, - explains the engineer Bellomo - but acquired as producers of a component different and complementary to that of Copreci, with a strategic objective in mind: to provide clients with a subset ensuring the end customer an important advantage "

“ What makes us special is the know-how of our product and for that reason we are the ones who not only produce, but also give support to all the other Companies in the Group to export it all around the world ”.

Copreci Systems is therefore the center of excellence of the Group with regard to the pipes. For this reason all the issues related to the pipes including the valve assembly comes to Italy.

## COMPETITIVE ON ALL MARKETS

Copreci Systems works on the customer's design, which means that each valve is developed and designed in-house and then, if necessary, be customized to individual customer requirements in terms of components of contour, as the knob. "We need to adapt", Bellomo adds. "Or better, we need to adapt our technology to a geometric drawing of the piping provided by the customer, with all the problems that this implies."

"Our product has to adapt to a path that is determined after placing burners and valves and have already made the molds needed to produce the stove. Only at that point comes the time to place the gas pipe, physical constraints are not indifferent to those who have to bend it. Behold, here comes the complexity of our solutions "

## AN EXPORTED MODEL

Copreci Systems has doubled its turnover without duplicating the workers but making the most of the automation of production processes, where the close collaborative relationship started with BLM GROUP, with regard to the processing of the tubes, has come in the game. This could be more correctly described as an actual partnership, because the production model and many of the technical solutions installed at the Mareno di Piave plant have been exported to other Copreci group plants. This concerned also the ones where the geographic location might suggest a productive organization of work geared towards cheap labor such as in the case of China and Mexico. Instead No. Surprisingly, the Mexican plant is the one in the group which is most similar to Copreci Systems from the tube production point of view even though it is a very large factory where also other components, such as valves, are made. It is therefore a rather wide entity within which was set up a processing area of the tube that reflects what has been done in Italy and that will go to cover the production needs of the whole of North America. "Our choice is to keep the technology for reasons of quality, production reliability and flexibility in the production change" explains Bellomo.

## THREE THOUSAND BATCHES A MONTH

Copreci Systems' numbers are amazing: nearly 3.5 million main pipes (also called "ramps") are made per year and other 9.5 million secondary aluminium tubes going from the valves to the stove burners are processed.

The minimum batch size is striking: "We have made batches of only six parts. Given the technology we have, this means that as soon as the machine is started the production type is ready to be changed", said Bellomo.

"The concept of lean production has deeply changed manufacturing methods and our 'modus operandi' has changed as a consequence", added Bellomo.

"For this reason, we must be equipped with machines and technologies to be flexible to produce cost-effectively a lot of 6 pieces and then move on, immediately after, to produce another few thousands of ramps, and with the same quality and reliability".

## THE CONTRIBUTION OF TUBE BENDING MACHINES

This philosophy ensures optimal use of the opportunities offered by the BLM machines installed in the company.

"Specifically, BLM has been our partner from the start, even before we joined the Copreci Group, and we can say to have nearly developed the technology which today allows us to respect the necessary flexibility together", said Bellomo.

"For instance, being able to set up the machine rapidly in a few steps, in a short time, by calling up a program from a database, making the most of the rapid change of the tools, let us to better face a market characterized by the high number of product codes we mentioned.



6 pieces  
*the smallest batch managed*

As for bending machines, there is also a need of speed in production because these are machines that, compared to the cost of our product, ask for a major investment, with several years of depreciation, so the more pieces I can do the better it is. Speaking of machines BLM a point in their favor is then definitely the speed of work that, over the years and the machines evolution, has been gradually more and more increased."

As for aluminum tubes, Copreci Systems contributed to making BLM history by going from PlaUno and Planet machines to the latest 4-RUNNER. "We have been always one of the first - if not the very first - to choose to invest in the new BLM models. So we can say to have contributed to their developments and improvements", he affirmed. "This was the case with our first Planet, when I was involved personally, and it is the same today with the 4-RUNNER. Both machines are extremely good, but if I have to compare them I must say that the latter stands out for its speed and flexibility.

Another advantage is the production speed that they exploit by connecting directly to BLM for prompt interventions and help in solving any issues or malfunctions. "This means we can relax and exploit the machine to the maximum", concluded Bellomo.

"It is a great advantage for the similar work centre installed in Mexico, for instance".





ARTUBE

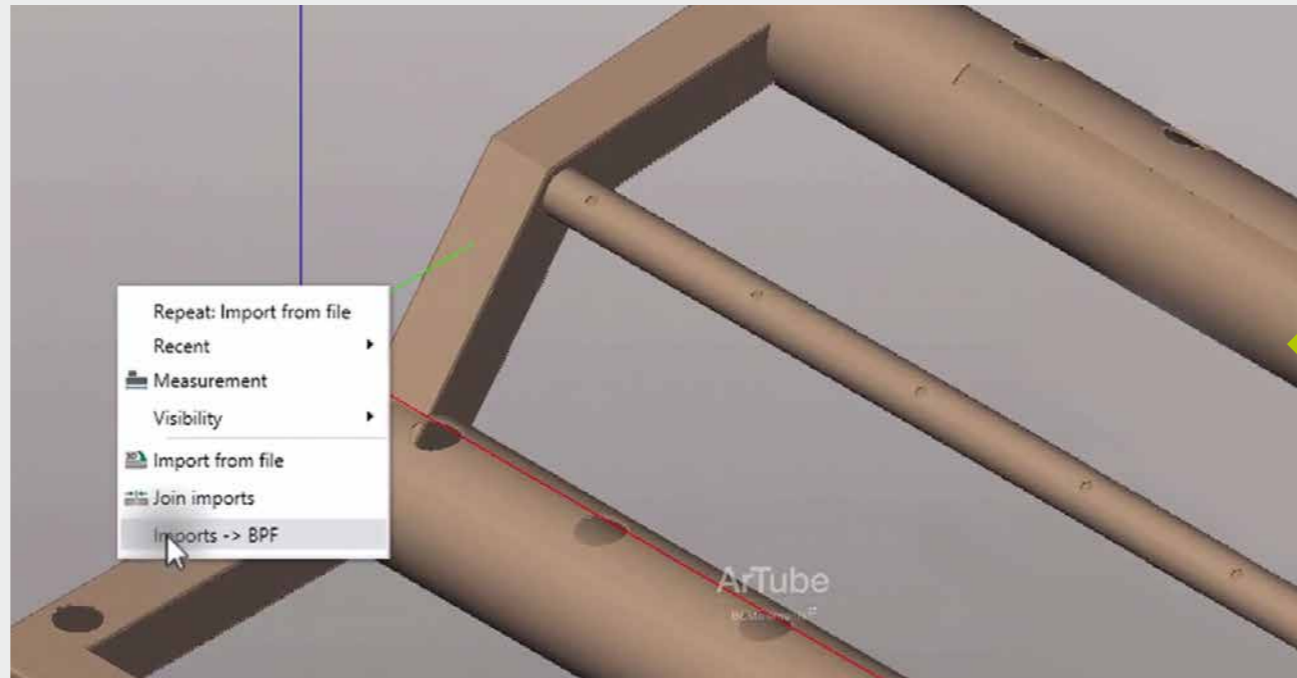
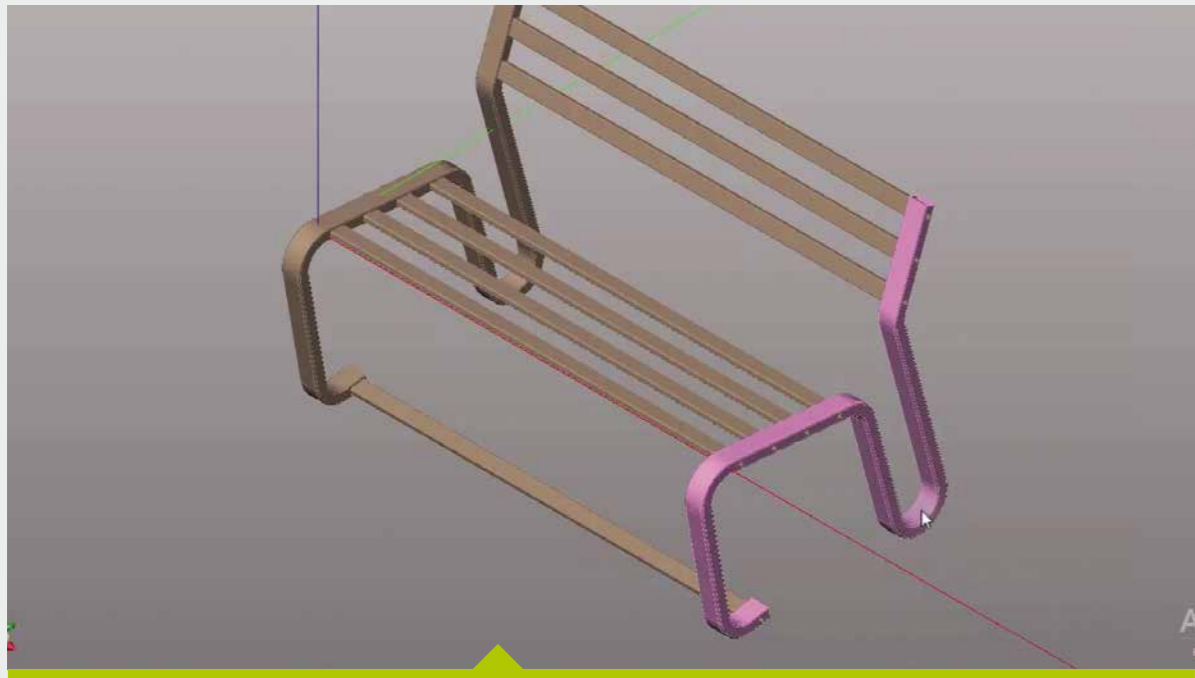
## ENTIRELY NEW, YET IMMEDIATELY FAMILIAR

The production systems need to be more and more user-friendly as the number of functions handled and their performance increases. Higher the flexibility of the system, greater the need for it to be simple, user-friendly and fast in terms of operator accessibility of various functions.

The software development in BLM GROUP is based on these guidelines.

We have put together all the software instruments for designing, programming and production planning for each of the production technology that we propose (Artube, VGP3D, Protube etc.) in a single suite. All these instruments are coherent in appearance and modality of use. The result is something more than just a new suite: it is more functional than ever.





## NEW USER INTERFACE: TOUCHSCREEN AND NEW GRAPHICS FOR ALL BLM GROUP PRODUCT LINES

Everything will be more natural from the first time you use the new display. The new interface has a totally remodeled look but it is familiar at the same time: all interactions follow fundamentally the same logic you are already familiar with; but now everything is even more fluid and reactive. The tool bar is arranged in a clear, tidy manner and the icons are easily recognizable.. In short , interacting with the new interface will be a pleasure, first time and every time.

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## EVERYTHING YOU NEED, AT THE RIGHT TIME AND RIGHT PLACE.

- The workflow is even more intuitive, user-friendly and fast because only the applicable commands appear on the toolbar.
- A short-cut menu associated with each item (part, process-step etc.) appears by right-click of the mouse to view and eventually modify the properties for that item.
- Save plenty of time with the new TreeView of the entire project, which could be a complete frame or a single part, where you can select one or more elements or process-steps and edit common properties.
- More open to the world and more efficient: With a single click, you can import 3D models created using external CAD systems in different formats like STEP, IGES, XT and even IFC.

Id	Part	N.	Rot.	Inv.
1	Newdocument2_Part-4_4	5094	0	0
2	Newdocument2_Part-4_4	4288.89	180	0
3	Newdocument2_Part-4_4	3483.38	0	0
4	Newdocument2_Part-4_4	2878.07	180	0
5	Newdocument2_Part-4_4	1872.76	0	0
6	Newdocument2_Part-4_4	1097.45	180	0
7	Newdocument2_Part-10_10	678.76	90	0
8	Newdocument2_Part-6_6	431.22	90	0

## REAL TIME PRODUCTION MONITORING: ALWAYS HAVE UP-TO-DATE INFORMATION TO BE ABLE TO INTERVENE QUICKLY IF NECESSARY FROM ANYWHERE

Whenever you want, you can check the production status and system operation to decide whether and how to intervene.

It is possible to:

- view machine states
- read active alarms
- monitor the progress of the current order and the remaining time for completion
- watch feed from the video cameras installed on machines
- receive notifications on scheduled maintenance operations or unexpected machine stops

This information - and more - is available on a fixed computer in office or remotely on a mobile device allowing you to evaluate the situation in real-time and take appropriate decisions.

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EXPERIENCE



MOTORBIKE

## ARROW SPECIAL PARTS

### ULTRA BY NATURE

Innovative manufacturer Arrow Special Parts based in Perugia, Italy, has chosen technology as the pillar of all activities to complement their experience gained in the world of motorcycle racing. Laser technology, in particular, allows them to be flexible, make smaller batches and respond to competition with top-notch quality products.

Arrow Special Parts has always had a racing vocation. Since 2000, they have collected more than forty Superbike, Supersport, Motocross and Supermotard championship titles by collaborating with riders of the likes of Everts, Seel, Corser, Charpentier and Toseland, to name a few.

Over the past five years, Arrow has added new involvements on local and national level to the agreements sealed with teams taking competing in world championships to expanded their presence in the racing world. The most recent title was won in September 2014 by Jack Gagne and the RoadRacing Factory Red Bull team in the Daytona Supersport Championship AMA, riding a Yamaha R6 fitting Arrow exhaust pipes.

## ORIGINAL EQUIPMENT AND AFTERMARKET PARTS

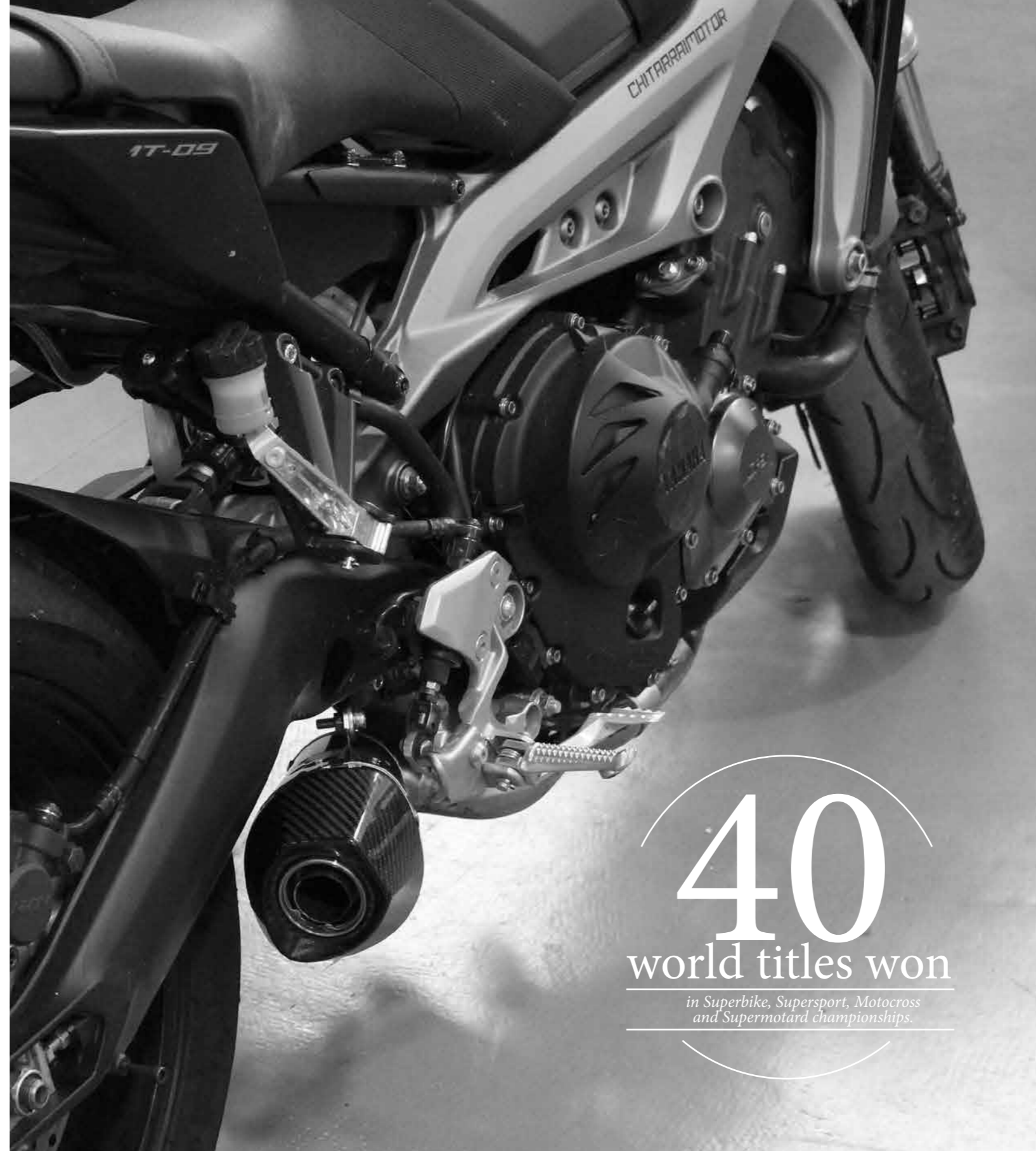
Such an enduring, constant commitment to racing has formed Arrow's consolidated knowledge and expertise in developing and making exhaust systems for mopeds, scooters and motorcycles. This experience has been built up by collaborating with major motorbike manufacturers for developing, tuning and manufacturing original equipment and aftermarket exhaust systems made by Arrow and distributed by the various manufacturers using their sales network.

Currently, Arrow Special Parts has sealed agreements with Piaggio, Aprilia, Moto Guzzi, Triumph, Betamotor, Mv Agusta, Kawasaki Malesia and many more.

R&D and Engineering are fundamental activities for Arrow. The Tooling Department can design and make tools for top level mechanical jobs although today its importance has been greatly reduced in parallel to the introduction of laser technology on the shop floor. The technical experience in the field of die making is still a major asset exploited by Arrow to design and develop new ideas and concepts hand in hand with customers.

BLM GROUP laser technology was the excuse to visit the company located in San Giustino near Perugia and meet Giorgio Giannelli, Mauro Corgnoli and Raffaele Rosi, who are Chairman, Managing Director and Technical Department Manager of Arrow Special Parts.

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40  
world titles won

*in Superbike, Supersport, Motocross  
and Supermotard championships.*

## A CONSOLIDATED UNION

Arrow uses state-of-the-art machinery and technology for automating some critical processes, such as tube cutting, bending and preparation, as much as possible. The entire process is designed to guarantee manufacturing quality, high production rates and, above all, operative flexibility. However, manual processes are still needed to make high-quality exhaust systems, in particular for welding, preparing the various components, assembly and packing. Although the manual assembly of an exhaust system prototype directly on a motorcycle is still one of the most fascinating parts of the work carried out by Arrow, and one that some may say is even poetic, our visit focused on understanding how laser welding technology has changed and influenced the manufacturing methods of this important manufacturer.

Arrow has been using two BLM GROUP laser systems - a CO<sub>2</sub> machine later followed by a laser fiber machine - for some time. More in detail, they have a LT905D for laser cutting bent tubes, which combines the operative efficiency of a five-axis head and a wrist robot, and a 3D LT-FREE laser cutting system capable of processing both tubes and sheets.

Arrow Special Parts is a consolidated, long-standing BLM GROUP customer. The Arrow-BLM relationship may be defined as a technological partnership between two different players which share the same technological vocation from two different points of view: one develops innovation and puts it at the service of other, which manufactures and exploits the technology to produce more innovation, in turn.

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## THE REASONS FOR A CHOICE

"Our process is organized as a concatenated sequence of jobs", declared Mauro Corgnoli. "We chose the first BLM GROUP system when investigating ways to reduce the high accident risk inherent to the use of blades and disc cutters. Our yearly survey indicated that although we had had very few accidents, 80% of them were caused by the obviously incorrect management of the product cutting method. We were aware that laser technology would have allowed us to reduce a number of traditional jobs considerably, but we still

did not know to what extent. Today, I can say that it was the right choice and the best we could have made because laser cutting is a key element of our competitiveness”.

“By implementing laser technology, we can continuously refresh our product range and by exploiting its potentials we have something that our competitors, above all those operating at low cost, do not. In brief, laser technology allows us to continuously stand out on the market”, he concluded.

### MINIMAL LEAD TIME

“There is not much difference from the production cost point of view between before and after the introduction of laser technology”, added Raffaele Rosi. “The real advantages are in terms of versatility and flexibility. For us, time - particularly the lead time for each job and the overall time for the production response - is the key. Actually, from the point of view of economy, I think a laser job costs nearly double a single operation on a press (for instance, an eccentric press stroke costs 30 euro cents) but it has the major advantage of not having needing any investments for die making, and above all we do not have to deal with some batches which are convenient than others”.

### ITALIAN MADE QUALITY

In other words, the process was started by Arrow to expand the product range and optimize production and not to save. “We wanted to obtain a high quality finished product, to improve our internal production flow and to emerge on the market which is dominated by Chinese made products.

We choose TIG over MIG and we use titanium instead of steel”, explained Chairman Giorgio Giannelli. “In practice, we soon understood that some competitors would have given us a kicking in terms of numbers, so there were two options: to follow in their footsteps and open a competitive company in a developing country or to stay in Italy, make this a plus and invest in technology to evolve our product portfolio and our production processes substantially placing the accent on quality”.



“By exploiting the potentials of laser, we can make complex parts, like our manifolds, in a more functional manner. The 4-2-1 and 4-2-2 groupings for example, are simply slanted cuts and old process consisted in blade cutting and flattening to couple them perfectly. Using the laser system we can make a direct cut and obtain perfect coupling, and this allows us to TIG weld downstream since this technology requires coupling with virtual zero gap”.

### LASER SPELLS FREEDOM

“For us, laser means freedom of movement”

declared Rosi giving us some clarifying examples.

“For instance, with it we could define a pre-production batch of exhaust pipes for Triumph without ever having seen the motorcycle and design the aftermarket exhaust in parallel to the design process of the motorcycle itself. With laser technology, we defined the exhaust starting from the 3D CAD model, built the prototype, sent it to the customer and had it approved for production very rapidly. The prototyping step was drastically shortened”.

“For one customer, we make a gas outlet heat exchanger and manage a single drawn part with 13 different codes according to the versions to be made. How could we have satisfied this type of need with batches from 60 to 200 parts each without using LT-FREE laser?”

This is a good question and one that will go unanswered, but it does generate interest in why such a particular system was chosen. What originated your choice?

“It made us even more flexible and more efficient in covering our production needs but also allowed us to start up a contract cutting shop. So we managed to pay for the system nearly without realizing it. It is worth mentioning that we have found answers to our needs and to those of others, and it is the latter to have made our investment remunerative because we are paying for it by using processing under contract jobs”.

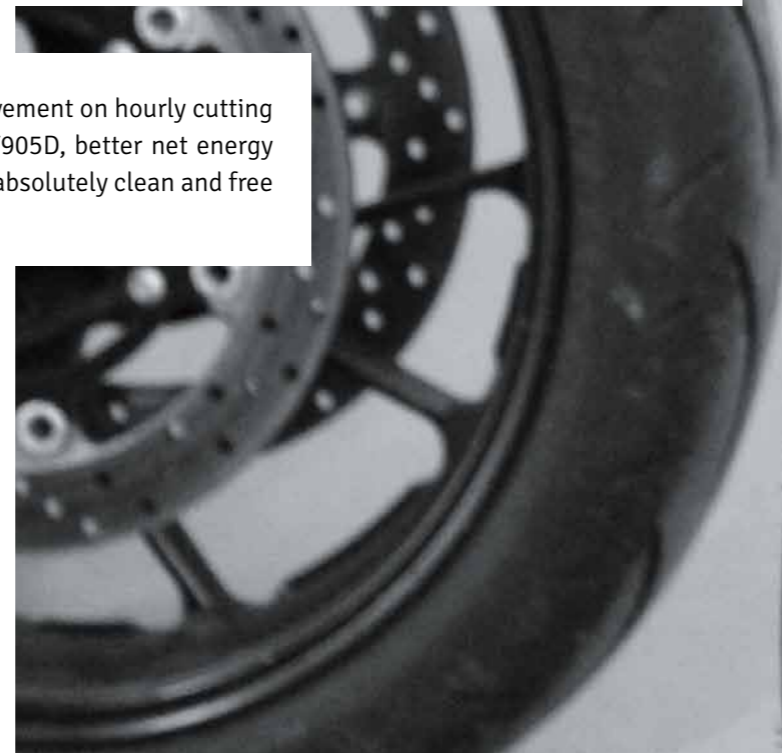


# Quality



By comparing the old system to the new LT-FREE, Arrow has found a 40% improvement on hourly cutting rates. Other benefits include simpler service gas management than on the LT905D, better net energy consumption and considerably boosted performance. Furthermore, the cuts are absolutely clean and free from faults or dirt.

**40%**  
new LT-FREE  
*improvement of the hourly cutting rate found by Arrow by comparing the old system and the*



“We are so satisfied by our fiber laser system that in the future we are planning on buying a fiber laser tube machine for cutting aluminum more efficiently than the miter saw process which are still using now”, said Corgnoli.

## THE ADVANTAGE OF ELECTRIC BENDING

Arrow turns to BLM GROUP for more than laser systems only. The tube production cycle includes bending the various parts which are trimmed, cut and sent to the welding system.

Absolute accuracy is a common denominator and this makes Arrow a convincing test bench also for the BLM tube bending machines for two reasons: the thin materials which are processed (typically only 1 mm thick) and the bend geometries. For this reason, the E-TURN electric bending machine is pivotal in the bending department

in which three BLM hydrodynamic bending machines are installed. The machines have different dimensions so reorganize the department with complementary machines which effectively and efficiently cover the entire range of production processes.

“Titanium processing is important and the E-TURN can carry out accurate bending operations which allow to machine differently from before”, explained Rosi.

In conclusion, Arrow Special Parts is an innovative manufacturer which has chosen technology as the pillar of their activities to complement the experience gained in the world of motorcycle racing.



EXPERIENCE

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STRUCTURAL STEEL

## KERN STEEL FABRICATION

### GOOD WORKERS AND TECHNOLOGY LEADER

Kern Steel Fabrication is based in Bakersfield, California. They design and make steel structures mainly for the aeronautic and Oil & Gas sectors. They make heavy fabrications using beams and lighter structures, such as handrails and ladders, for which the laser tube cutting systems is perfect.



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Kern Steel Fabrication is based in Bakersfield, California. They design and make steel structures mainly for the aeronautic sector. “We structure aircraft stands, maintenance platforms, working stands and docking stations for large aircraft maintenance, including structures for the Boeing 737 and the 747”.

“We have heavy fabrications with beams, and lighter structures, like handrails and ladders”, explained Al T. Champness (Tom), owner of this family business, which today employs one hundred people.

100  
PEOPLE  
*working for the company today.*

### PEOPLE ARE FUNDAMENTAL

The company was founded by Tom’s father and used to make products for concrete. The focus later shifted from constructions to metal structures for the Oil & Gas sector operating supplying the local market.

“We mainly work on large-sized projects and our customers expect two things: respect of deadlines and high quality”.

Tom explained that in order to reach this result the key is to have good workers and be a technological leader.

According to Tom, having and maintaining high-quality, professional, skilled workers is crucial for high quality once a given technological level has been achieved.

## IDEAL TECHNOLOGY AND MORE LOGICS

Despite Tom's business outlook that places the focus on people, human knowledge and skills, they have always explored new technologies with interest and curiosity. Coherently, KSF has six robot welding centers and purchased an ADIGE LT8 laser system, "We needed a sawing machine for beams and tubes and started to see what the market had to offer. We always seek state-of-the-art technology and this is how we learned about laser cutting", explained Tom. He added that given the knowledge and automation experience deriving from the use of the robot welding centers the advantages that the ADIGE Lasertube LT8 could bring to the company's production cycle were immediately obvious.

The LT8 system also allowed KSF to exploit all the advantages offered by robotized welding technology. "We needed cutting accuracy to use the robots to their best and laser appeared to be the ideal technology from the start because it also allowed us to reduce the welding station feeding times."

One of the main difficulties encountered by KSF was in helping customers and designers to think of new ways to employ laser technology to do things that they could not have before.

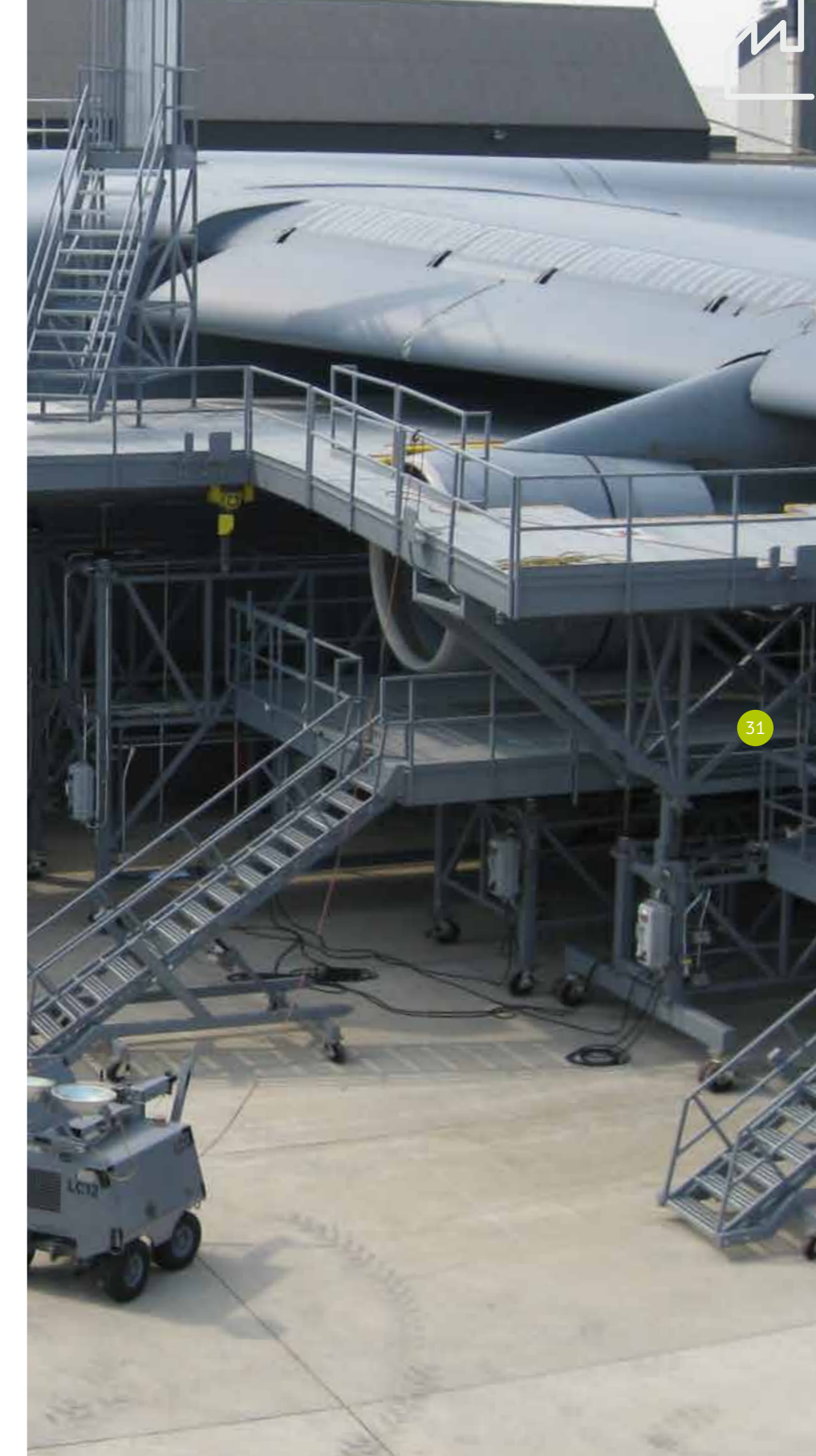
## OIL & GAS EXPERIENCE

KSF also operates in the Oil & Gas sector making products which also benefit from laser cutting. "The advantages of using laser are the same as those in the aircraft stand sector with cost saving resulting from better accuracy and time saving during assembly."

# 20-30%

*is the estimated advantage resulting from processing tubular parts using laser instead of traditional technologies.*

The machine is currently working on two shifts, but the work load is increasing and they will be able to buy an even larger machine when three shifts will be filled. KSF had a rather unusual experience with laser systems because they started with the Lasertube LT8 specific for cutting tubes and only later moved onto sheet processing going in the opposite direction of most manufacturers. This is another way to stand out.







AUTOMOTIVE

# PHANTOM RACING CHASSIS

IT IS ALL FUELLED BY PASSION

Phantom Racing Chassis, located in North Carolina, is a leading racing kart chassis manufacturer. The passion for these vehicles is the spark which spurred Harrill Wiggins to start this business, which today is the largest racing kart manufacturer in the USA.

We came to China Grove in North Carolina to visit Phantom Racing Chassis (PRC), a leading racing kart chassis manufacturer. The passion for kart racing was the trigger to start this activity. Harrill Wiggins, founder and owner of PRC, also designed and engineered the chassis they make. PRC's technical solutions are based on feedback gathered directly on the field from the drivers as well as on the personal experiences of Harrill, and also many other people who work with him.

Additionally, PRC has its own racing team: "This is mainly to stay in touch with the racing world in which our customers operate", explained Harrill. "Karts here are very different from those in Europe, particularly because they are asymmetric in order to run specifically on an oval".

The drivers explain what they need and Harrill and his team implement it.

"Our job is to provide the right product for drivers to work with".

That is a bit like BLM GROUP USA, which supplied the machines and technology most suited to tube processing to PRC.

## HISTORY OF A TALENT

Harrill told us that in this part of the United States car racing is more than just a passion. In the 1970s there were many championships on tracks similar to those on which the Formula One championship is run but then racing on ovals became more popular and NASCAR became more prevalent in the USA. PRC is located in an area where most NASCAR teams are based, and one could even say that most of the businesses in the area are related to car racing.

We felt genuinely Harrill's enthusiasm when he told us the history of his company: "I started kart racing when I was 10 years old. From 1986 and 1987, when I was 16, I built the first two chassis to make the karts I wanted to race".

These two chassis are proudly displayed in the showroom



next to the factory today.

"Then in 1989 I decided to start my own business as Wiggins Kart Shop, later to become Phantom Racing Chassis. I made the first chassis which was sold and raced in the Daytona championship. I was 19 years old. I worked for my father during the day and on my karts at night".

In 1994, when his father retired, Harrill started operating full time and hired his first employee. Since then they have changed location three times due to growth.

## AUTOMATION AS A NECESSITY

PRC has an excellent level of automation with CNC systems for forming and mechanical jobs, welding robots and measuring machines. "We started off with an all-manual tube bending machine, and when we moved to the plant here we built our own hydraulic tube bender", said Harrill.

The production volumes of Phantom Racing Chassis do not necessarily demand the use of automation. Harrill explained that the work could still be carried out by hand but that he feels the need for accuracy to ensure





greater finished production quality and control is important. Exasperated automation is the direct consequence of the difficulty to retain good workers. NASCAR is too strong an attraction for anyone, particularly in the area of welding in which highly specialized personnel are always in demand. “It is no surprise, and I cannot even be upset when a good technician worker leaves us to work closer to NASCAR after having been educated and trained because the attraction is so much stronger”, recognized Harrill.

For this reason, at the end of 1997, PRC started implementing robot welding centres and this determined a great quality leap. Robot welder requires absolute precision in the parts to be welded and obtaining this result with a hydraulic tube bender was a challenge. For this reason, they installed a BLM ELECT-52 in the workshop, as Harrill told us.

“I saw the BLM machine many times at FABTECH in Chicago and I also saw competitors offering cheaper solutions than BLM, but I saw the quality and value we needed in the ELECT-M system. I made up my mind in 2013”, continued Harrill.

1000  
frames *produced in a year*

## THE TUBE BENDER TAKES TO THE TRACK

The result of implementing the ELECT-52 in production was absolutely positive. We did not have other electric machines to compare it to, so they compared what they had with what they saw at the trade fair.

Installation was quick and Harrill and his personnel soon established a close collaboration also on service level with BLM.

“Whenever I pick up the phone and call I know I will always find someone on the other end”.

Harrill declared with satisfaction.

The electric machine increased accuracy and performance with respect to the hydraulic machine which was not equally reliable, but only one thing has not changed: “programming is also very simple”, Harrill confirmed. “It did not take much time to learn how the machine worked. We do many jobs for NASCAR teams and this tube bender helped us gain a footing with these customers”.

PRC sells to private customers and to racing teams. The world of kart racing on oval tracks over the past years has become more relevant over time because of the money in play; In particular, PRC’s customers have won more than \$100,000 a year in go-kart competitions. There are more and more people driving karts for money and the people who work in PRC are personally involved.

“Many members of staff are also kart drivers and their passion fuels our work”, added Harrill.

“Karting is living a golden age and for this reason the number of kids who want to race are on the rise; kart driving is becoming a real job with increasingly bigger prizes”.

We can only wish Harrill to continue reaping successes with this team and his great company and continue to value Phantom Racing Chassis as a valued customer.





**GO**

# ALL-IN-ONE TUBE TECHNOLOGY

BLM GROUP is well conversant with tube processing technology.

The long experience and knowledge base allows us to compensate various process generated effects (like elongation and spring-back) while integrating various manufacturing processes and ensure dimensional accuracy of the component.

Too good to be true!

Single point management for the entire process: from cost estimates and programming to production planning and monitoring.



Laser cutting on straight tube



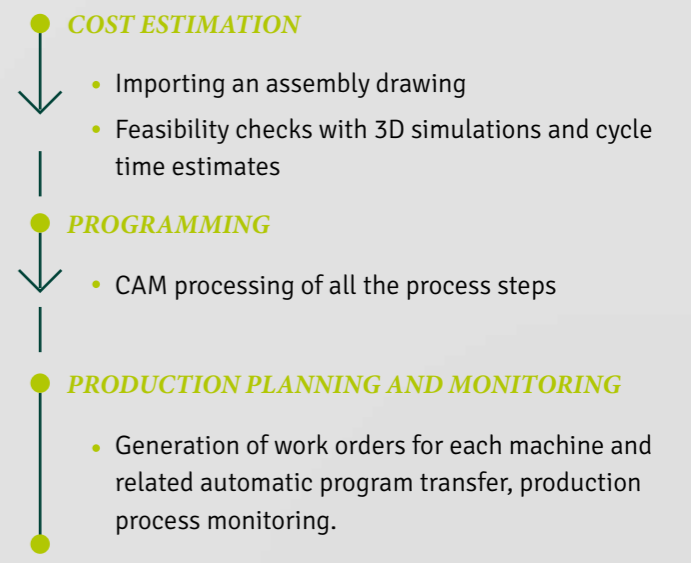
Bending on laser cutted tube



Laser cutting on bended tube

What are the advantages of efficiently integrating a number of technologies?

- Simplified manufacturing process due to reduced handling
- Simplified logistics due to less WIP (space saving)
- Scrap reduction due to 100% on-line process control
- Reduced cost per piece due to completely automated manufacturing process
- De-skilling of manufacturing process means reduced costs and higher flexibility





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*FURNITURE*

## **MINIMALANCE**

**CREATIVITY IS OUR MOTTO!**

Minimalance is a newly launched Indian furniture brand and also a manufacturer of high quality, aesthetically designed furniture. Thanks to the innovative tube bending technology developed by BLM at its disposal, Minimalance is capable of transforming its designs into reality. With the E-TURN machine, Minimalance has flexibility and precision at the same time. With these two characteristics E-TURN's capability of handling large volume production as well as small batches (sometimes even one piece) is once again confirmed.

Hardik and Shreshtha Bhatt is a young couple from Ahmedabad, the capital of Gujarat state in India with a common passion for aesthetic design. They have converted this passion for design into an interesting business proposition. Back in 1978, Hardik's grandfather started a company to manufacture textile machinery. This family owned company still exists and is run by Hardik's father and uncles.

Hardik is also active in the company but his interests in design and furniture were pulling him elsewhere. "After I finished my bachelor's degree in engineering, I went to Florence in Italy to study interior and furniture design" says Hardik. On returning from Italy, he got married to Shreshtha, an economics graduate with a master's degree in business administration. "Since Shreshtha is also interested in design and furniture, we decided to start a new activity in the furniture sector to offer high quality furniture".

Hardik's father encouraged them in this project; they worked on it for quite some time to understand the business dynamics of the sector, from design to marketing and sales. "We considered a number of options at different levels but then the desire of creating something on our own got stronger and with our father's support we started Minimalance" – says Shreshtha.

## FLEXIBILITY IN TUBE BENDING

The family owned company had some experience in sheet-metal working (laser sheet cutters, CNC press-brakes etc), but they did not have any experience in tube processing. "We wanted to bend tubes to make high quality chair frames and hence we were looking for a tube bending machine that would assure high quality and flexibility. Our search took us to BLM" explains Hardik. He further explains that "we required precision, repeatability, quality and above all the flexibility and looking at E-TURN's video clips, catalogues and other information we thought that it was the right machine for us. We wanted it and we bought it. In fact, our selection is right; E-TURN is an extremely flexible machine".

Hardik likes BLM's programming and simulation software VGP3D for its flexibility and user-friendliness.

“The possibility to see the bending simulation for every component and check its feasibility in a reliable manner allows us to save a lot of time because we do not have to make multiple tests on the machine; we are sure about the feasibility and quality when we actually start bending our components”.

The simulation is very reliable and useful: one can simulate a part and decide that it can be bent using only RHS head. Since the simulation is reliable, one can decide that to use the LHS head tooled-up for other parts. This flexibility is very useful for someone trying various creative designs in their preliminary forms.

Hardik says "E-TURN is suitable for high volume production as well as for bending one single piece in a short time".

## MADE IN INDIA WITH EUROPEAN QUALITY

We asked a pointed question to Hardik about suitability of automated systems in India where the manpower cost is low. Hardik's reply was firm when he repeated his earlier affirmation: "we need precision and automation is the only way to get it".



In this context, E-TURN's capability to bend tubes by properly orienting previously made holes, slots etc (laser cut or otherwise) is mentioned. The taste for "beauty and elegance" is well developed in India. It is particularly true for Ahmedabad, home for The National Institute for Design (NID), the oldest and topmost design institute in India. "We have some contacts with NID. To manufacture high quality furniture we need manufacturing capabilities of the same level and with E-TURN that requirement is satisfied as far as tube bending is concerned. We can bend parts that would have been otherwise impossible".

“We are trying to reduce / eliminate welds on our products. We try to have self-locking joints without need of welding so even if the joints are visible they are aesthetically nice. This is possible only if our bending process delivers precisely bent parts. With E-TURN ensuring this fact, we have design freedom because we are sure to make what we design” says Shreshtha.

Minimalance has big plans for the future. They have started receiving enquiries for their furniture not only from various Indian cities but also from some middle east countries. They do not want to limit their activity only to household furniture. Automotive market also interests them because Gujarat is becoming a new hub of activity in that sector with GM, TATA and Suzuki factories in the area. They have produced an automotive seat and have got it certified from an organization in Pune. With E-TURN's flexibility they are able to venture in these different areas. We wish them all the best for their future plans (with some minor vested interest).

The taste for "beauty and elegance" is well developed in India. It is particularly true for Ahmedabad, home for The National Institute for Design (NID), the oldest and topmost design institute in India.



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*FURNITURE*

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## **KGŽ METAL PRODUCTS ŽNIDARŠIČ**

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### **QUALITY MATTERS**

In Slovenia, KGZ Ltd manufactures metal components mainly for office furniture for captive use and also offers job-shop services. They market the furniture with their own brand name. Having the laser tube system turned out to be the most effective step in company's growth.

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In Videm Dobropolje, Slovenia, KGZ manufactures metal components mainly for office furniture. Established in 1990 by Franci Žnidaršič and his father as workshop for making electrical panels, the company gradually grew into the current, modern factory offering job-shop services. They process sheet-metal and tubes using the state of the art machinery to produce high-quality components.

“My father and I opened a small workshop to make electrical panels after our normal working hours”, says company owner Franci Žnidaršič as he begins to tell us the story. “Today, we employ 25 people in this 2800 square meter plant, have modern machinery and serve various sectors”

The core business is office furniture but KGZ is a subcontractor capable of satisfying a wide range of process requirements, making frames for electrical cabinets, components for Inotherm armored doors and even parts for hospital beds.

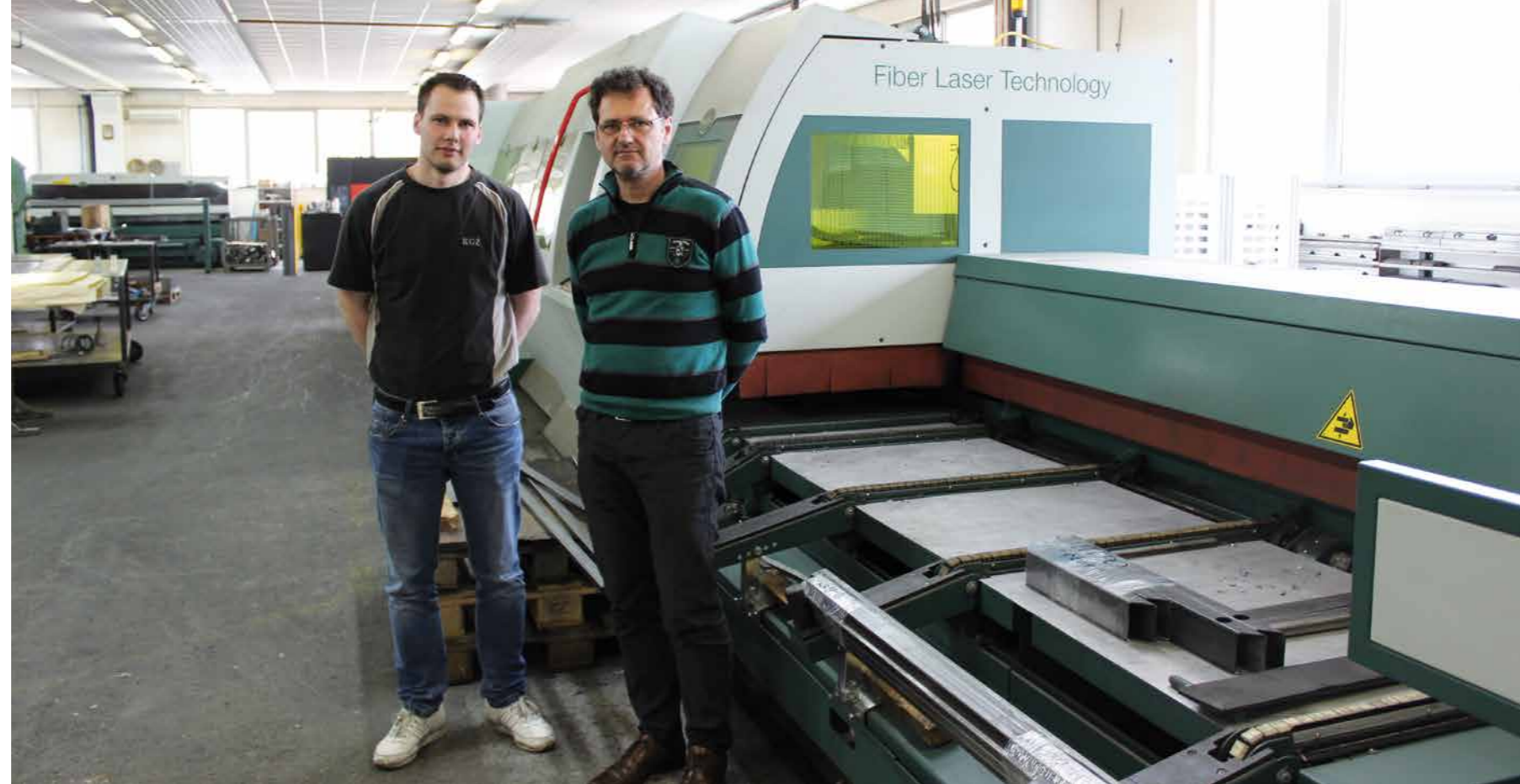
## NICHE POTENTIAL

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The quality leap occurred in 1995 when they started making furniture components as subcontractors for a local company. “High-quality furniture component manufacturers were not yet present in Slovenia and we saw an opportunity for rapid growth”, said Franci.

For over 10 years now, they have had their own brand - KGZ - under which they market their products in Slovenia, Croatia, Serbia, Bosnia and Macedonia. Croatia and Slovenia are the main markets, but as subcontractors they operate in nearly all over Europe as a result of collaborations with several Swiss, Austrian and Slovak companies.

“Our competitive advantage is in the rapidity with which we manage individual products, our quality control system and our capability to satisfy each Customer’s specific requirements”, explained Žnidaršič. “Service, good quality to price ratio, believing in what you do and maintaining an ethically correct approach with customers, suppliers and employees are the essential guidelines of the company and have allowed us to establish good relationships with everyone, and especially with our customers”.



## FLEXIBILITY FIRST

The tubes used to be cut and bent by hand. Then, they started using a miter saw and as the quantities increased they decided to switch to laser and buy an ADIGE LT FIBER system.

Installation of the laser system helped us to develop individual products rapidly and improve product quality.

In future, we are planning on adding a bending machine to complete the range of services we offer and components that we can process.

KGZ puts a special emphasis on quality and for this reason employs qualified expert personnel to operate their high-end machines. When choosing the machinery to be implemented at the plant, the quality of the brand is a key component, followed by machine flexibility, ease of use and programming and consequently everything else indirectly related to the machine..

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Flexibility is a primary need because machines do not work for 15 or 20 hours on the same batch; they have lots of small batches to process and need versatility. This was key element in favor of the LT FIBER Lasertube system when machine to be ordered was decided.

Price of the machine comes after these important factors. All the machines they purchased are high-end and consequently the investment was also high in each case.



The hourly rate for the laser tube cutting  
IS HIGHER BY AS MUCH AS

40%  
compared to laser sheet cutting

### THE LASER TUBE MACHINE IS MORE COST-EFFECTIVE

So, KGZ has state-of-the-art machines; they started off with a miter saw and now have a laser cutting system. Decision to invest on laser was not easy because there were only two laser tube machines in Slovenia in those days but they recognized the potential of this technology, made up their mind and invested. Even now, there are only a few laser tube machines in Slovenia. On the other hand, there are too many laser sheet cutting machines and hourly price for job-work decreasing to the point of being no longer profitable. Hourly rate on a sheet cutting laser is less by 20 to 40% compared to that on a tube laser.

The relationship with BLM GROUP is consolidated and satisfactory: they are happy with the quick responses from the Customer Care service. The relationship is built on mutual respect, sincerity and transparency resulting into an efficient collaboration.

The market in Slovenia is expected to remain stagnated for some more time, above all for political reasons but well organized companies have a lot of work-load. Žnidaršič believes that it is will not be possible for Slovenian companies to gain a footing in the major European markets but is confident that they will be able to find their niche markets and interesting business opportunities offered by them in other countries.

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