

Structural

STL

A COMPLETE MACHINE PARK

“In Italy there is great competition, it is not easy to emerge, and companies are certainly not facilitated.” These are the first words from Engineer Kristian Mazzobel, owner of STL together with his sister Giada Mazzobel, a lawyer responsible for managing the legal and contractual affairs with Italian and foreign clients. You can feel the commitment and determination that these two Italian entrepreneurs put into their business making it grow; investing with judgment and with a long view on the future. STL produces medium-heavy structures for sectors such as oil & gas, off-shore, naval, large construction; all fields in which steel is often found in the form of heavy plates, large pipes and open-section beams in large quantities. The collaboration with BLM GROUP for laser processing has been active for a long time. *“Ten years ago we started with what was little more than a bet, installing the first LT20,”* a Lasertube system capable of cutting tubes with a maximum diameter up to 20 inches and thickness up to 16 mm. At that time they did not have much commercial experience, but the results were there and brought growth and further investment. *“Today we have more than 2,000 active customers and we have purchased other laser machines, an LT24 even bigger than the first one, then, in the last year an LT7 and an LT8.10, always from BLM GROUP. For the larger structures, we also purchased a plasma cutting system that cuts pipes up to 2.5 m in diameter, over 400 quintals (40,000 kg) per pipe,”* Kristian explains.



The principle of the right machine for every job

The importance of having the right machine is clear in the words of Mr. Mazzobel, *“In the naval sector, pipes for transporting fluids or oil are mostly made of tubes up to 600 mm in diameter that can be processed with lasers, but we also need to work on the 10% of cast pipes with poor quality, calamine crusts, variable sections, non-standard lengths, and very wide tolerances that cannot be processed with lasers. That’s why, next to the laser systems, it was necessary to add a plasma system to complete the machine park”*.

Thanks to this impressive fleet of machines, the first in Europe, STL was able to participate in a contract to cover the Al Bayt stadium in Qatar, where the 2022 FIFA World Cup will be held. *“In forty days we cut 1,400 tons of large pipes up to a maximum diameter of 1.4 m and a thickness of 80 mm.”*

Not only large tubes

However, not everything in the world is made of the huge tubes used for the structures of large buildings, and when customers asked for cutting smaller tubes in addition to heavy machining, the only solution was to outsource. *“We relied on subcontractors who had Lasertube systems, but we realized that this way of working involved obvious commercial risks. In addition, customers often want to work with a single supplier. I remember, for example, the case of a heat exchanger in 400 mm tube, 10 mm thick, from which came thin tubes of 48 to 60 mm in diameter. Cases like this made us realize that it was really time to enlarge the machine park and diversify the sectors.”*

Kristian and Giada came to visit ADIGE with the idea of a Lasertube LT8, that was the size machine immediately below the ones we already had, but then things turned out differently. *“The LT8.10 and LT7 are similar machines. Having invested in a very short time*

twice in an LT20 and an LT24, the idea of a faster and more flexible machine on the smaller diameters was our goal with a preference for the LT8.10 that we had already seen on numerous occasions. In the ADIGE show room, however, it’s like entering a car dealership, you go in thinking about a machine, then you are fascinated by what you see and you want more.” Giada and Kristian remember this episode with a smile, *“As experts in laser processing, we asked some precise questions and the answers we got made us realize that the LT8.10 covered a wide dimensional range below the LT20, but also that there was another lower dimensional range for which there were more suitable machines. In short, after we completed the tour we sat down and signed orders for two machines.”* As we said, there is the right machine for every job.

The LT8.10 and LT7 are the top of the range Lasertube systems in their respective dimensional sectors and offer flexibility and exceptionally high performances on an expansive range of tubes and production sectors. Having both, means being able to provide answers in the medium size and weight tube sector with unmatched performance with the LT8.10 and having the highest productivity, reliability and technology on small size tube. *“Our customers use medium size profiles of a material that, as a quality, is not the classic S355 cold rolled steel, they often ask for hot rolled as well. The LT8.10 is widely used in this field. But thank goodness we also took the LT7 that, compared to other products of the same size, has the 3D head. This allows us to realize the bevel cutting that our customers require, even on tubes of smaller size and thickness.*

Complex tasks that become doable, if not easy

Composite structures require precise pieces with tolerances far greater than those characteristic of the starting material. When very long structures are worked on and there is no precision in the individual processes, errors of centimeters can be found from top to bottom. The beginning of the process is the laser cutting of the



tube and it is from there that precision starts. This is a very important advantage of laser processing that also guarantees important time savings that are especially evident in the assembly and welding phases. *“BLM GROUP’s Lasertube systems have tools and features that are the added value of the investment; a set of hardware and software that, in many years of experience, has been modeled according to the real needs of customers. The combination of our experience in the construction field with the potential of Lasertube systems has allowed us to take several jobs,”* explains Kristian, who continues with a concrete example. *“In the structure of the roller coaster of a well-known amusement park we had to make about ninety columns ranging in height from 1.2 m up to over 13 m high, all different from each other. They were mostly composite columns with joints to be welded in full penetration and were made of hot-rolled steel, so they were difficult to machine due to the presence of a large amount of calamine on the surface. We worked on the cutting parameters and got perfect results with compliments from the customer, which doesn’t happen often.”*

On the LT7 and LT8.10, the second shift is completed

unmanned. By choosing the right jobs, you load a certain number of bars in the evening and find the job done in the morning. More critical or fast production runs that require quick production changes are done during the manned shift.

Consultants by experience

STL also works for companies that manufacture machine tools for which they make the tubular base. *“The customer sends us the 3D model but often it’s a model that doesn’t include the laser processes, that allow us to create efficient joints, which are included as a library in ADIGE’s software package. When I describe to the customer how the structure can be made more efficiently and qualitatively better, they look at me like I’m talking science fiction,”* Kristian explains and continues with another example, *“even in agricultural machinery, technology has been undergoing a terrific evolution for some years, but there are still companies that cannot conceive the advantages of these new technologies compared to traditional machining. Let’s think: the bar of tube arrives, I have to make a production sheet for the employee who has to take the overhead crane and bring*

the piece to the saw and measure it manually, then we have to make 10 holes of two different sizes, I have to bring it under the drill etc. Half an hour of work instead of one minute of laser cutting. If you count all the costs associated with traditional machining, the advantage is obvious. The more structured companies have been adapting for some time now.”

The advantages of software

Software has long been one of the strengths of BLM GROUP systems. *“Fundamental was the fact that we could program the machine with Protube Enterprise,”* says Kristian. *“With the new LT7 and LT8.10 we had to implement the interconnection according to Industry 4.0 criteria. At first it seemed like a dramatic event, but then, also because of the way the machines are designed, we realized that it was an opportunity to work in a more orderly and organized way. Protube Enterprise is connected to our company MES on one side and to the machines on the other, but not only the new machines; it was also possible to integrate the LT24 and even a plasma system that is not from BLM GROUP. Now we are able to retrieve all the time and cost data of each system in real time and interweave the data to get the times and costs of the different jobs. The availability of real data allows you to work much better in the negotiation and budgeting phase. Industry 4.0 gives you a methodology that is very useful in a company like ours that actually acts as a service center. A lot depends on the mindset of the companies. Young and flexible companies that see the long-term perspective seize these opportunities and invest, otherwise they fall behind. We are also investing a lot in research and development, especially in engineering and architecture. We are in contact with the University of Venice, Ca Foscari and IUVAV (architecture), there is a partnership project between the two universities, then there will be the University of Padua and Turin. The aim is to give an opportunity to young people to grow so that companies can believe in them,”* Giada Mazzobel concludes.

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