

Experience
Job shop

GRÖTSCHEL GMBH

THE SOFTWARE AT EVERY STAGE OF THE PROCESS TO OPTIMIZE IT

“If that is the future, we must absolutely be part of it. Otherwise, we might close in a couple of years”. By investing in a LT8.10 Lasertube and a LS5 sheet laser cutting machine from BLM GROUP, complete with programming and control software, the GRÖTSCHEL GRUPPE laid the foundation to ensure its future growth.

Often things go differently than you think. A visit from GRÖTSCHEL GROUP to the BLM GROUP ADIGE company in Levico Terme, in northern Italy, was in fact more interesting than expected and became a key event for the further development of the company. *“We traveled*



to Trentino to look for sheet metal laser cutting and tube bending machines,” said Sven Grötschel in autumn 2017.

There, however, the managing partner of Grötschel GmbH from Bernsdorf in Saxony was mostly interested in all the possibilities available today that Lasertube cutting could open up to metal construction industry. Especially with the LT8.10, which uses fiber laser to cut tubes, special, closed or open profiles, with diameters from 12 mm to 240 mm and bar weights up to 40 kg/m. In addition, it carries out 2D and 3D cuts on materials such as steel, stainless steel, aluminum, copper, brass.

We already use 3D CAD files

Regardless of the product: stairs, stands, canopies, conveyor belts, machinery components, control panels,

equipment or other metal structures – Grötschel has used for years 3D CAD systems to prepare production. *“In the era of Industry 4.0 and integrated production processes, it is logical that CAD data flows directly into sheet metal and tube laser systems,”* says Grötschel, summarizing what the experts of the BLM GROUP have shown to their team in Italy, making use of the latest software solutions.

BLM GROUP demonstrated to the manager and his colleagues how the 3D CAM/CAM Artube software automatically converts STEP files, after importing them, into production programs for Lasertube systems. It was also shown how Artube could recognize single components of an assembly, automatically create the job orders, send the information necessary to the machines and at the same time optimize the production process as a whole.

The software suggests the most efficient solutions and, if necessary, allows you to modify them flexibly during the production preparation phase. This applies, for example, to “hook & slot” connections where one tube end has features cut out to fit into slots on another tube. Adding “hook & slot” features simplifies joining of tube assemblies.

Process optimization: brilliant

An Artube specialty is the cut-bends. Up to now, rectangular frames were made of four tubes welded at corners, Artube reduces the four tubes in a single longer tube. At defined positions, the software conceives cuts that will then allow bending of the part next to the right angles. The result is a frame consisting of a single piece that can be cut and bent rapidly. Many times welding is not necessary either, as Artube may suggest locking joints that, as a result of laser cut accuracy, are stable enough to be supported on their own.

In other words: A few simple elements are sufficient to produce entire frames and assemblies. The BLM GROUP software contains the know-how of how to carry out the best process. Grötschel adds: *“Artube gives our customer access to a new world of design possibilities. This means that we can accept jobs that would not be so easily achievable with traditional methods. Traditional methods cannot be competitive with the new Lasertube systems and their software, neither for precision, nor for flexibility, nor above all for productivity.”* So, after the visit in Levico Terme, we considered two machines by BLM GROUP: an LT8.10 for tube laser cutting and an LS5 for sheet metal laser cutting.

A moneymaking growth potential

“Since our company is exclusively a job shop, this type of investment for us is a real feat”, Grötschel affirms. Nevertheless, he sees a huge growth potential for his company. After all, traditional methods are still used in many fields. Especially in plant engineering or air

conditioning technology, knowledge in construction and design all too often lags behind today’s possibilities of tube laser cutting. Grötschel: *“We continue to perceive a lack of skilled workers who can work alongside designers. This is exactly what we aim to do.”*

The entrepreneur also wants to increasingly act as a service provider in the local market, delivering small series and finished assemblies including welding from a single source to metal construction companies: *“Many metal-workers work with a number of different steel frames and constructions that they manufacture for their customers by hand. They basically know that their production is no longer up to date. But they don’t find the time to break*



down their offers into a few basic models with standard components, on the basis of which they can efficiently implement individual expansion stages. Or they lack the know-how to develop appropriate kits.” With their new technology, the GRÖTSCHEL GROUP is more interesting than ever for these companies as a partner.

Active Tools: quality guaranteed

Not only Artube, but also BLM GROUP’s Active Tools ideally support production. Active Scan “erases” imperfections, which with tube material there are plenty of. It measures the geometries of the materials within milliseconds and takes into account the deviations in the laser cut. If the LT8.10 is to cut holes in the center of square tubes, it cuts in the center even if the widths of the tubes fluctuate by a few millimeters. In the future, Active Scan can be expanded to include the Active Weld option, which detects the weld on tubes/profiles.

Active Marking eliminates the manual marking of

sequential numbers at GRÖTSCHEL GRUPPE. Active Piercing automatically optimizes piercing of all materials being processed, whereas Active Speed dynamically checks all the parameters to ensure the best cutting quality is achieved from the first part. Lastly, Active Focus dynamically controls the laser focus, that in this way carries out 2D and 3D cuts as well as piercings and markings in the best conditions.

From the machine operator perspective, automatic weld recognition is also a welcome function. It allows, for example, to avoid that the welds are placed in bending areas: in the last software version, welds can already be defined in the production set-up process.

Flexibility is everything for us

Loading flexibility, a key feature of LT8.10, is very important for Grötschel. “We live thanks to individuality and after all we only manufacture special parts. Using the step conveyor at the front, we can load up to eight

different profiles at once. That perfectly supports our requirements in day-to-day business.” For other orders, the tube laser is busy for days and is loaded via the bundle loader. The machine offers the opportunity to load individual pipes or profiles and cut them in order to continue the current orders.

The 3D fiber laser cutting head is another key element of the LT8.10 for GRÖTSCHEL GRUPPE. It carries out 2D or 3D cuts that allow optimal weld preparation, especially for railings and mezzanines. “With the 3D head, we can chamfer the ends or single holes”, Grötschel explains, another feature that is very useful to the company. In addition, the fiber laser is characterized by the lowest operating costs. And it hardly needs any maintenance, which in turn minimizes maintenance costs.

“From our point of view, BLM GROUP systems are built according to criteria of solidity and compactness”, says Grötschel, citing another characteristic aspect of the Italian business group. It doesn’t matter if it’s the inclusion of a bracket or other materials, every detail has purpose and function. Add to this safety of the operator, all around and without compromises in critical areas with the machine open. Grötschel: “We really appreciated all this at first sight”.





Ready for production without wasting time

Grötschel included his employees in his investment decision from the start, since they had known the 3D CAD world for years and had the appropriate know-how, and the company was able to start tube laser cutting production without any waste of time. *“Our employees enjoy working with new technologies. They fully agreed from the beginning”*, Grötschel confirms.

Already after one week the company was transforming plenty of different tubes and profiles into products to be sold, as if they have had the LT8.10 for years. *“Today we are more autonomous and faster than ever”*, Grötschel underlines the change brought by the new technology. *“For this reason, we can take on more challenging jobs and ensure minimum machining times”*.

With EHP Blechbearbeitungsmaschinen GmbH a sales partner of BLM GROUP in East Germany, GRÖTSCHEL GRUPPE has competent advice on all questions relating to the tube and sheet metal processing and also has support that contributes to the company's success in other ways: *“EHP puts us in contact with the metal workshops of East Germany that use other BLM GROUP machines. This creates a network where we can complete our technologies to offer a complete solution to our customers”*, this is how Grötschel expresses his satisfaction about the support received.

The power of innovation is awarded with the “Zukunftspreis” 2018

“We are still in the initial phase when it comes to tube laser cutting and take all the time that is necessary so that we can cover the requirements of the different market segments in a suitable manner.” This really opened up a wide field for the company. Precisely because it takes its customers by the hand when it comes to constructive design - which sets it apart from most other service providers in the industry. This is very well perceived in the domestic market. Grötschel took second place at the 2018 Future Prize of the Dresden Chamber of Crafts and was thus recognized as a particularly innovative company.

The LS5 covers all the company's requirement for sheet metal laser cutting. With this type of system in our shop, GRÖTSCHEL GRUPPE can cover its customer needs in the fastest and most flexible way as possible. *“It was logical for us to buy both laser cutting machines in one package and from a single source,”* says Grötschel. If you consider that he originally only wanted to buy a laser system for cutting sheet metal, then the investment decision gave the company a strong push towards the future.