



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



“
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.
”



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.

