



More Capacity, More Versatility, More Opportunities: BLM GROUP Raises the Bar in 3D Laser Cutting

Building on its extensive experience in 5-axis laser cutting of straight and bent tubes, as well as complex 3D components, BLM GROUP is expanding its expertise to the processing of large three-dimensional metal profiles.

Roberto Costantino, Product Sales Manager for 3D laser cutting cells, introduces the new **LT-FREE** with an enlarged working envelope, designed for the automotive, aerospace and many other industrial sectors.

What led to the development of a new 3D laser cutting cell?

As a leader in tube laser cutting, BLM GROUP originally developed its 3D technology to overcome the challenges associated with machining already bent tubes. Deformations caused by the bending process can compromise the accuracy of machining operations performed beforehand. Laser cutting directly on the bent component eliminates this issue, ensuring parts that fully comply with design specifications.

Since 2015, it has been used in sectors such as automotive, where it allows high-strength materials to be processed without contact and with exceptional flexibility. Continuous investment in research and development, combined with close collaboration with customers, has enabled our technology to evolve and expand into new application areas.

To meet new manufacturing requirements, BLM GROUP has developed the new **LT-FREE**, featuring a working envelope of up to **3,000 × 1,500 mm** and a **750 mm Z-axis stroke**, available in two configurations. Increased dimensions have been achieved while maintaining outstanding levels of precision, structural rigidity and dynamic performance.

What are the advantages of a 750 mm Z-axis stroke?

The usable height of the Z-axis is often the main limiting factor in three-dimensional applications.

It is important to consider not only the size of the workpiece itself, but also the space required by the fixtures used to hold it in place. With a 750 mm stroke, the machine can easily process particularly large components and multiple parts, complex bent tubes, frames, and large stamped and deep-drawn sheet metal parts which can also be positioned at an angle to make the best possible use of the available working volume.

This design delivers an exceptionally versatile machine without compromising the speed or precision required by even the most demanding production environments.



Which industries is this new solution primarily intended for?

While the automotive industry remains a strategic market, today's target audience is much broader.

With its larger working area, the machine is ideally suited to a wide range of industries, including aerospace, automotive, white goods (household appliances), yellow goods (construction and earthmoving equipment), industrial plants, HVAC and ventilation systems, commercial kitchens, stainless steel components, light metal fabrication, and three-dimensional sheet metal applications in general.

In short, any industry requiring high-quality 3D laser processing can benefit from the capabilities of the **LT-FREE 3015**.

What are the machine's dynamic performance characteristics?

One of the project's main objectives was to maintain high performance despite the machine's increased dimensions. The machine has been engineered with an extremely rigid structure, achieving a natural frequency close to **30 Hz**. This enables high acceleration rates and extremely accurate tool paths, even at maximum operating speeds.

For customers involved in high-volume production, cycle time is a critical parameter. The new machine has been specifically developed to meet these demanding requirements.

What are the key strengths of the new machine?

The main advantages can be summarized in three key points:

- Outstanding dynamic performance, thanks to an extremely rigid and fast machine structure.
- Exceptional versatility, made possible by the large working envelope and the 750 mm Z-axis stroke.
- Compatibility with the existing market, making the machine an ideal solution for retrofit projects and machine replacement.

These benefits are complemented by ease of use, BLM GROUP's proprietary **ArGo** software, the ability to integrate third-party software solutions, and the wealth of expertise the Group has built through more than sixty years of innovation in laser cutting and metal processing.

How does BLM GROUP's accumulated experience contribute to process quality?

It plays a decisive role. Over several decades, we have built an extensive database of application knowledge covering materials, thicknesses, geometries and cutting conditions. After all, a bent tube is essentially a complex three-dimensional component.



This wealth of expertise enables us to deliver stable, reliable and consistently high-quality machining processes.

Can the new LT-FREE 3015 open the door to new markets?

Absolutely. In addition to the industries where we are already well established, we see particularly promising opportunities in the aerospace sector, where machining special alloys and advanced materials requires exceptional precision, a minimal heat-affected zone (HAZ), and the ability to produce complex geometries.

These are precisely the types of applications in which our technology can fully demonstrate its performance.

For more information:

Chiara Vaccari – Corporate Communication Coordinator BLM GROUP

E-Mail: pr@blmgroup.it

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BLM GROUP presents itself as a global partner for the entire tube and sheet metal working process, with a widespread presence worldwide and with thousands of applications. The companies that are part of the Group are:

- BLM SPA, of Cantù (CO), specialized in the production of tube bending, tube end-forming, wire bending machines and 3D laser cutting cells.
- ADIGE SPA of Levico Terme (TN), specialized in the production of laser tube cutting systems (Lasertube), sawing machines for tubes, solids and profiles with brushes and measuring, washing and collection systems.
- ADIGE-SYS SPA of Levico Terme (TN), specialized in the production of sheet metal laser systems for tubes, systems for the laser processing of large tubes and profiles.