

Automation – A Game Changer for Italian Manufacturer

By Vittorio Pesce

To better understand the growing importance of laser cutting automation systems, we recently visited MAI S.r.l. (Salvirola, in the province of Cremona). This company has 17 employees and has been active in the field of sheet metal processing since 1979.

According to Andrea Iacomelli, sales manager, MAI is multi-faceted and is directed mainly to the sectors of electrical distribution, professional cleaning machines, vending machines, machines for the textile industry, domestic and industrial heating, etc. Since 2002, the company has achieved a new level in its production process by introducing different in-house processing technologies over the years, such as robotic press-bending, punching combined with shearing, and both CO2 and fiber laser cutting capability. "Today, our philosophy is to manage our customers' entire order, starting from the product engineering to the delivery, including the welding, painting, assembly and packaging," explains Iacomelli.

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The company's strength is the high level of automation achieved by highly sophisticated equipment and software, which make it possible to meet the various customer requirements in a short time. "We seek to build long-term relationships with customers with large volumes of production on long-range, even if the individual batches are very fragmented and typically consisting of just 50-100-150 pieces. It is the level of automation that allows us to change the type of piece to produce very frequently and to be competitive in the production of parts in small quantities," says Iacomelli.

The Right Choice

A collaboration that began in 2005 between MAI and Prima Power was essential in achieving a high level of modernization and innovation despite the small business size.

"In 2014 we decided to invest in a new laser cutting machine," recounts Iacomelli. "After a period of research and review with the



Piece processed M.A.I. with the Platino Fiber of Prima Power.

Detail of a piece machining produced by M.A.I. and manufactured with Platino Fiber of Prima Power.



Cristiano Porrati, South Europe Sales Manager of Prima Power (left) shakes hands with Andrea Iacomelli, sales manager of M.A.I. srl.

Prima Power technicians, we chose the 2D PLATINO® Fiber machine with 4 kW source. We were initially skeptical about the use of laser fiber, but we immediately changed our minds, because it is a very reliable, fast, easy to use, and above all, very versatile machine."

The PLATINO® fiber laser has allowed the company to cut any type of material, such as iron, steel, stainless steel, Aluzinc, aluminium etc., and to cover the full range of MAI's production up to 4 mm. "We have added a loading/unloading system and a sorting and automatic stacking system, called LST in order to ensure versatile and fully automated production," says Iacomelli.

The Versatile and Efficient Fiber

The Platino fiber's small wavelengths cut a wide range of materials, even those highly reflective materials such as aluminium alloys, copper, brass, etc. There are many benefits of using this machine, including very low energy consumption, high beam quality, absence of "laser gas", low maintenance, compactness and ease of use.

According to Cristiano Porrati, Prima Power's Vice Chairman South Europe, Sub-Region Manager, "The latest generation of Prima Power's numeric control is intuitive and functional, and provides high computing power and advanced algorithms for the optimal management of cutting trajectories."

The laser head is equipped with a single focusing lens adapted to any type of cut. This makes it possible to change the production without interruptions and loss of time.

Guaranteed and "Organized" Stacking

The LST is Prima Power's innovative automatic stacking system that can be matched to the Zaphiro® and PLATINO® laser machines. The LST avoids the manual separation of finished parts from the sheet metal skeleton, thereby reducing human intervention, increasing the finished product quality and expanding the productivity level even in unmanned operation.

This is achieved by means of a sophisticated robot which collects the pieces one by one directly from the cutting head and stacks them accurately on tables, or on trolleys, or deposits them in the dedicated boxes. The LST is a radically different solution, available in both short (PS) and long (PL) version to meet specific process and layout needs. It collects and stacks each piece according to programmed coordinates. This allows the possibility to freely arrange the stacks of material according to the production needs. The automatic stacking system is associated with NC Express, the CAD/CAM software for the automatic programming of laser cutting and pick-up and stacking functions of the LST system, by Tulus® graphical user interface with icons.



Laser head of Platino Fiber in a cutting operation.



System with Platino Fiber and Compact Server for handling sheets.

Results Above Expectations

The system, consisting of the laser fiber 2D PLATINO® and the Prima Power LST automatic sorting and stacking system, has been operating at the modern plant in Salvirola since January 2015. After a few months of operation, the company managers were well pleased with the system's performance. "The automatic stacking system was already known to us, and we were sure of its quality," explains Iacomelli. "As for the fiber cut, my initial concerns have been allayed. I did not think this technology would prove to be so efficient and reliable, as well as fast and precise. In fact, compared to the previous generation machine with CO2 source, the fiber has allowed us to not only reduce energy consumption, but also to cut production times in half."



Platino Fiber with LST.

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These advantages may allow the company to acquire new contracts, expand the market and increase the volume of work. Furthermore, since the unloading, scrap separation and piece stacking are managed by the LST system automatically, today workers that were once responsible for these activities may be reassigned to more productive operations. "It is a huge savings, and therefore a further reduction in our cost per piece," adds Iacomelli. "The 2D PLATINO® fiber laser with LST automatic piece detachment, sorting and stacking system turned us into a versatile, lean, and advanced company in the field of automated flexible production. More simply, it allows us to offer the market high-quality products with very competitive costs."

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Compact Server for loading and unloading blanks and processed sheets.

Future Growth

"We have very clear ideas," concludes Iacomelli. "Our goal is to build a cutting, punching and shearing production unit with automatic warehouse, in order to bring the production processes to an even higher level of flexible automation. Ours is a company that is still operating on a little more

than regional level, but we believe that the potential of the company is such that we can greatly enlarge the market area. Soon we will try to attack a little more of the domestic market, but the most ambitious goal for the next two-year period is to internationalize the company, looking for customers across the border."

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