

Gaetano Lo Guzzo, Director,
Laser Business Europe at
Yamazaki Mazak next to its
new Direct Diode Laser on
display at EuroBLECH

THE LASER REVOLUTION

Mazak
DIRECT DIODE LASER

ISMR SAYS:

"Since 2015, Yamazaki Mazak has increased its turnover by 30% in Europe"

Yamazaki Mazak launched a variety of new laser and automation systems at EuroBLECH 2016, including a new Direct Diode Laser (DDL) cutting system

Yamazaki Mazak had a strong showing at this year's EuroBLECH exhibition in Hanover with new laser cutting and automation systems making their world debuts.

Gaetano Lo Guzzo, Director, Laser Business Europe at Yamazaki Mazak, told *ISMR* at the exhibition, "This combination of new machines, automation systems and the world's fastest new CNC, along with innovative laser technology, offers laser users nothing short of a revolution in laser cutting."

Global launch of diode laser

"We are revolutionising laser cutting with the global debut of our first ever Direct Diode

Laser (DDL) to be developed for flat sheet, at EuroBLECH 2016," explained Gaetano Lo Guzzo. "Direct Diode Laser is an important step forwards in laser. The application is similar to fibre, but the performance is much better (20% faster than fibre). This is because the wavelength is smaller for better material penetration and absorption. Energy-efficiency for the DDL is also around 50%. I am pleased to confirm that we have already sold one of these machines at EuroBLECH."

The new OPTIPLEX 3015 DDL 4kW, using Direct Diode Laser technology, is the next generation of solid state laser for industrial

laser applications, offering high efficiency for laser cutting operations. The machine, which complements Mazak's existing CO₂ and Fiber OPTIPLEX machines, uses a Mazak-manufactured Direct Diode Laser and has been positioned to offer high cutting performance, specifically for those requiring ultra-fast cutting and high-quality cutting edges.

"The OPTIPLEX DDL series can cut thin material 20 per cent faster than fibre lasers and thick materials with unsurpassed surface quality. The machine has an axis acceleration of 1.8G and benefits from rapid traverse rates of 120m/min. Positioning accuracy is maintained to within $\pm 0.05\text{mm}/500\text{mm}$ in the



Mazak's new OPTIPLEX 3015 DDL 4kW, using Direct Diode Laser technology, is the next generation of solid-state laser for industrial laser cutting applications

We are revolutionising laser cutting with the global debut of our first ever Direct Diode Laser (DDL) to be developed for flat sheet, at EuroBLECH 2016

Mazak's Super Turbo X 3015
Fiber laser cutting machine



X- and Y-axes and to within $\pm 0.01\text{mm}/100\text{mm}$ in the Z-axis. The machine also offers exceptional repeatability accuracy of ± 0.03 in the X-, Y- and Z-axes," added Lo Guzzo.

"The OPTIPLEX DDL is also capable of a wall plug efficiency of 40-50 per cent compared to 10 per cent for a CO₂ resonator; 15-20 per cent for a disc resonator and 30-40 per cent with a fibre resonator. It also features our new CNC control, MAZATROL PreviewG."

Laser, automation and control technologies

Mazak's new SUPER TURBO-X 3015 Fiber, the latest generation of its SUPER TURBO-X series of CO₂ laser machines, has sold more than 4,000 units across Europe since 1990. The new fibre machine, which is available in both 2kW and 3kW versions, has been specifically developed for laser users who require high productivity allied to reduced running costs, lower maintenance costs and the ability to cut highly reflective materials, such as copper, brass and galvanised sheet.

The SUPER TURBO-X 3015 Fiber series also boasts reduced floor space of 2,900mm x 7,400mm, which can be fitted with Mazak's existing FMS laser automation systems, enabling easy upgrade to fibre cutting for existing ST-X CO₂ laser machine users.

"the new SUPER TURBO-X 3015 Fiber is capable of significantly faster cutting speeds than its CO₂ laser competition"

"The new laser cutting machine offers significantly lower running costs compared to CO₂ machines, with savings on electricity consumption and maintenance," explained Lo Guzzo. "Typically, laser users benefit from lower running costs due to a circa 80 per cent reduction in oscillator electrical power consumption and a 100 per cent reduction in laser gas consumption, compared to CO₂ lasers.

In terms of cutting performance, the new SUPER TURBO-X 3015 Fiber is capable of

significantly faster cutting speeds than its CO₂ laser competition with high-speed cutting for both thin and mid-thickness materials. The

machine also offers rapid speeds in the X- and Y-axes of 50m/min. and 25m/min. in the Z-axes along with acceleration of 0.2G for thin sheets, 0.12G for middle thickness sheets and a maximum cutting speed of 50m/min.

Mazak also introduced two new automation systems at EuroBLECH 2016. An OPTIPLEX NEXUS 3015 4kW laser machine was equipped with the latest version of Mazak's flexible automation technology. QUICK CELL, designed by Japanese industrial designer Ken Okuyama, is available in three different specifications: 6-stocker, 10-stocker and 14-stocker versions. It is called QUICK CELL, according to Lo Guzzo, because it takes just 55 seconds to change a plate on the machine, a key benefit for fibre laser users who often nest quickly on these machines.

"Mazak also introduced two new automation systems at EuroBLECH 2016"

"New QUICK CELL technology, which is capable of significantly faster processing speeds compared to the original design, enables unmanned laser cutting operations, with the next operating pallet being prepared during processing. The new pallet is loaded as soon as the cutting process is complete with the used pallet moved to the stocker. The version being exhibited at EuroBLECH 2016 is a 6-stocker version," Gaetano Lo Guzzo told *ISMIR*.

Mazak also exhibited its new LaserFlex 4.0 material handling solution fitted to an OPTIPLEX 3015 Fiber 6kW laser cutting machine.

"LaserFlex is a compact, easy-to-use laser automation solution that enables the rapid handling of raw plates, with a process time for the exchange of raw and cut plates of less than 75 seconds when teamed



An OPTIPLEX NEXUS 3015
Fiber laser cutting machine

"Europe is a strong market for us - Italy, Germany and France, in particular"

with the OPTIPLEX machine. The LaserFlex system is easily expandable, depending upon the storage capacity or the number of laser machines it is required to feed," added Lo Guzzo.

Mazak's new laser CNC, MAZATROL PreviewG, is dubbed by the company as 'the world's fastest CNC'. PreviewG combines intuitive touchscreen operations, similar to smartphones and tablets, with new machine hardware and servo systems, which together can dramatically reduce programming and processing time.

An eye on the future

"2016 has been a good year for us - since 2015, we have increased our turnover by 30%. There are a number of reasons for this, including the better economy in Europe, but we have also managed to increase our European market coverage and sales network," Gaetano Lo Guzzo told *ISMIR*.

"Now, with fibre and DDL cutting lasers, we can better meet the material cutting requirements of our customers. Europe is a strong market for us - Italy, Germany and France, in particular. Central and Eastern Europe is a growing market. The Italian market is recovering well and we expect more growth there next year. Government incentives, such as Super Depreciation, have encouraged more Italian manufacturers to invest in machinery this year. My next target is to further increase and extend our sales coverage in Europe (through direct sales and agents)."



Mazak QUICK CELL for
unmanned laser operations