

MEERA LASER SOLUTIONS

Laser Cutting Solutions



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Process development for thermal cutting processes

Task

The productivity of laser cutting is decisively determined by a reliable cutting velocity with guaranteed size accuracy and cutting quality. By the use of highly dynamic linear direct drives, fast CNC controls, innovative light weight designs and lasers of excellent beam qualities, the limits of current machine dynamics and the restrictions drawn by the cutting process, can be overcome.

The focus of our activities is on the assistance of our customers to find adequate cutting processes and the corresponding cutting systems (beam source, cutting optics and handling systems).

Solution

Investigation, analysis and evaluation of cutting processes with different system technologies are here of main interest.

Our competencies:

- determination of the productivity (cutting velocity, cycle times) and the cutting edge quality,
- development of cutting parameters and process windows for metallic materials,
- detailed investigation of the gas flow and absorption conditions in the cutting kerf
- characterization of optical systems with respect to the beam quality,

Laser cutting offers various benefits over conventional processes, creating flexibility, productivity and reduced material consumption. One single tool cuts virtually any shape at a high speed – optimum for small batch sizes and for just-in-time production. The last link in the chain of a laser cutting machine, the processing optics, is especially important, has the right cutting head and matching integrated sensor system for every application. Be that for cutting out 2D components from flat sheet metal or holes and breakouts from 3D components, or processing tubes, profiles or beveling cuts, these optics are employed in the most diverse industrial sectors all over world.

The 3D laser technology can produce extremely accurate and complex laser cut geometry on angle, box, channel, pipe and tube, offering increased flexibility as well as rapid turnaround times on high quality products.

Materials which can be processed include:

- ♦ Mild Steel Box, Angle, Pipe, and Channel
- ♦ Stainless Steel Box, Angle, Pipe, and Channel
- ♦ Aluminium Box, Angle, Pipe, and Channel

Cutting by laser reduces the need for traditional manual processes such as sawing or drilling, representing a significant saving to our customers.

Why Disk/Fiber Laser?

The compact fiber-guided TruDisk laser has a simple modular construction. In it, energy-efficient diode lasers are used as the excitation source. After this, the disk results in a high beam quality.

- ◆ Your advantages at a glance:
- ◆ Power levels from 1 to 16 kW *
- ◆ Beam qualities from 2 to 25 mm*mrad
- ◆ Extremely high reliability and availability
- ◆ Not sensitive when it comes to back-reflections because of its patented disk laser principle
- ◆ Energy efficiency of > 30 %
- ◆ Low operating costs
- ◆ The highest power stability on the market
- ◆ Power range of about 2 - 100%
- ◆ Impressive performance in a laser network with a constant beam quality at every output
- ◆ Plug & play of all laser light cable diameters $\geq 100 \mu\text{m}$
- ◆ The laser power can be upgraded in the field (option)
- ◆ The highest possible safety (Performance Level e)

* higher power levels upon request



Laser Partner



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MLS 3015G

Disk/Fiber Laser Cutting

Technical parameters

Model	MLS3015G
Laser source	Trumpf/SPI
Laser power	1000W/2000W(optional)
Volume	46.8CBM
Weight	7500kg
Table height	900mm
Dimension	7900*2950*1900mm
Working size	3000*1500mm
Repeated positioning precision	±0.03mm
Max. Running Speed	120m/min
Max. Acceleration	1.5G
Driving mode	Precision Dual-drive Gear
Specified voltage and frequency	380V 50Hz





Features

1. Low cost and the power consumption is 0.5-1.5kw/h; Customer can cut all kinds of metal sheets by blowing air.
2. High-performance. Imported the original packaged fiber laser, with stable performance and the lifespan is over 100,000 hours.
3. High speed and efficiency, the speed of cutting metal sheets close to tens of meters.
4. The laser maintenance free.
5. The cutting edge looks perfect and the appearance is smooth and beautiful.
6. Imported the transmission mechanism and servo motor, and high cutting accuracy.
7. Dedicated software enables graphic or text to be instantly designed or processed. Flexible and easy operation.
8. MLS has developed a laser machine based on fiber/disk technology. It is a high productivity machine, whose more outstanding features are:
9. High cutting and piercing speeds thanks to the high density beam generated by this solid state laser.
10. High cutting and positioning accelerations due to machine cinematic based on linear motors.
11. Minimum set-up times thanks to the automatic table change.
12. Simple and compact layout. The use of fiber simplifies machine architecture, since the beam is transported through cable.

Samples



MLS 3015C

Fiber/Laser Cutting (500w - 2000w)

Features

1. Moved crossbeam with imported high precision racks and linear guide rail, transmission stable, working with high precision.
2. Machine tool, crossbeam and worktable adopt integral welding structure, machine tool, crossbeam and worktable adopt integral welding structure, in accordance with the standard large machine, to stress annealing after precision finishing and then for vibration aging treatment, it can completely eliminate the welding stress and processing stress, keep high-strength, high precision, and also keep the 20 years of normal use don't deformation.
3. X, Y and Z axis use imported Japan servo motor, high precision, high speed, large torque and large inertia, performance is stable and durable, ensure the high speed operation of the whole machine.
4. Based on Windows operating system, use professional Bochucy numerical control system for fiber laser cutting machine, integrated with laser cutting control special function module which is powerful with a good man-machine interface and easy to operate.
5. Laser-produced without gas, it could use air to cut sheet metal.



MLS 3015M

Tube/Sheet Fiber Laser Cutting (500w - 2000w)



Technical parameters

Model	LF3015C
Laser source	Trumpf/SPI
Fiber laser power	500W, 750W, 1000W (Optional)
X, Y and Z axis stroke	3025mm, 1525mm, 100mm
Weight	5500KG
Appearance size	4800*2600*1750mm
Working size	3000*1500mm
Tube Cutting Length	3000 mm - 6000 mm (Optional)
X and Y positioning accuracy	+0.05mm
Max speed	100m/min
Max acceleration	1G
Max load-bearing of work table	500KG
Transmission mode	important high precision with double driving rack
Power consumption of whole machine	< 15KW (< 12KW-1 KW)
Rated voltage and frequency	380V/50Hz/60Hz/60A



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