

FIBERMAK SL - G FORCE

Side Loading Fiber Laser



NEW

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Side Loading Fiber Laser

- New design of side loading Fibermak SL is a right choice for workshops with limited spaces to fit in, without compromising from standards and quality of Fibermak Momentum Gen-3 G Force.
- The productivity is increased average 15% per hour by higher acceleration of 2.5 G on Servo Motorized Models by Momentum Gen-3 G Force version and consequently the speed and gaining in time is higher.



CONTROLLER

- The controller lets the operator command the machine.
- The controller is durable to all environmental effects.
- Active touch screen and functional keyboard.
- Short cut buttons provide ease-of-use. You can access the desired functions faster and easier.
- Speed adjustment potentiometer allows you to adjust the axes velocities even during the cutting operation.
- NC graphic shows online nesting.



CUTTING SYSTEM

- The laser beam is delivered to the cutting head by fiber optic cable with QBH connector.
- The laser is delivered to the focusing lens after being collimated by collimation lens.
- Laser beam is set to desired focus point by automatic focusing unit.
- The protection glass protects the optics from the particles which are caused by the cutting operation.
- The sensor insert is the unit of height control system and helps to adjust the distance between material and cutting head.
- Height of the cutting head is controlled with the most precise sensors in the market. This helps to produce better cuts.
- The nozzle is used to control the assist gases. It is also a part of the capacitive sensor of height control system.
- Cutting head has three protective glasses, so optics are isolated from outside factors.
- Cutting head has bluetooth connection ability to give details about the cutting head without stopping cutting processes.
- Decreased weight of the cutting head gives ability to move easily between parts.

LASER SOURCE

- The Ytterbium solid state laser beam is created inside the laser unit. Excitation is performed by laser diodes enabling high efficiency with low costs. Laser beam created at the resonator is transferred to the cutting head by a fiber- optic cable without loss of power or quality. This provides a high beam quality appropriate for metal cutting.
- The Power range of resonator source is between 500W and 6 kW. As the power increases so does the cutting speed and capacity respectively.
- Fiber Lasers are inherently made for maintenance free production. The importance is sustainable diode life lasting approximately 100,000 hours.
- In any defective situation, part changing is easy because modules are designed for plug-n-play.



Laser Source



Chiller Unit

CHILLER UNIT

- The chiller unit cools down the laser source, the linear motors, and collimation unit: inside the cutting head.

EXTRACTION UNIT

- It provides a convenient working area by absorbing little particles and smokes occur while in production. It automatically works once the cutting starts.
- The suction cells open actively according to the cutting head's position. This provides accurate absorption.



Extraction Unit

COMPACT AUTOMATION BOARD

- Fibermak's automation equipment modules consist of drivers, IO units, height sensor, focal unit, shuttle table equipment etc. and their connections.
- The automation board enables the correct connection and cabling in the system resulting in a less defective ratio.
- This will provide easy servicing.

CONVEYOR

- The conveyor is situated under the cutting area where small parts and scraps drop to a wheeled container.



Conveyor

TECHNICAL FEATURES		SL 2000.3x1.5
RESONATOR	Watt	YLS 2000
POWER RANGE	%	10-105
POWER STABILITY	%	1 - 2
PULSE FREQUENCY RANGE	kHz	5
LASER WAVE LENGTH	nm	1075 ± 5
OUTPUT FIBER CORE DIAMETER	µm	100
EXCITATION	0	Laser diode
COOLING WATER FLOW RATE	l/min	10
CUTTING CAPACITY (Maximum)		
MILD STEEL	mm	16
STAINLESS STEEL	mm	8
ALUMINIUM	mm	8
COPPER	mm	6
BRASS	mm	6
MAXIMUM WORKSHEET DIMENSIONS	mm	3000 X 1500
MAXIMUM BURDEN CAPACITY	kg	1500
MACHINE AXES	-	4-Axes [X, Y, Z, U]
AXIAL MOVEMENTS		
X, U AXES	mm	3050
Y AXIS	mm	1550
Z AXIS	mm	150
ACCELERATIONS		
X, U AXES	G	1,5
Y AXIS	G	1,5
Z AXIS	G	2,5
MAXIMUM AXES VELOCITIES	m/min	141 (simultaneous) (X, Y single axis velocity 100 m/min)
POSITIONING ACCURACY	mm/m	± 0,03
REPETITION ACCURACY	mm	± 0,015
SHUTTLE TABLE (Automatic Loading - Unloading Unit)	palette	2 (25 sec)
ASSIST GAS		
OXYGEN	-	0,5-6 Bar
NITROGEN	-	0,5-25 Bar
DRY AIR	-	0,5-25 Bar
CUTTING HEAD	-	Precitec Procutter
CNC	-	BECKHOFF
CAD/CAM SOFTWARE	-	LANTEK EXPERT CUT
OPERATION VIA PANEL	-	15-inch display 1024 x 768, alphanumeric keyboard, PLC keys on the sides, touch screen keyboard
TOTAL ELECTRIC POWER NECESSITY	kW	21
MACHINE DIMENSIONS (L x W x H)	mm	5700 X 4680 X 2630
MACHINE WEIGHT	kg	13500

* All specs are subject to change without notice

* Sheet metal cutting thicknesses and speeds varies when the factors such as material quality, assist gas purity, environment conditions, parameter setting, original spare part usage, periodical maintenances, cleanness of optics are not proper.

* Cutting surface roughness increases at bigger thicknesses by fiber laser technology.