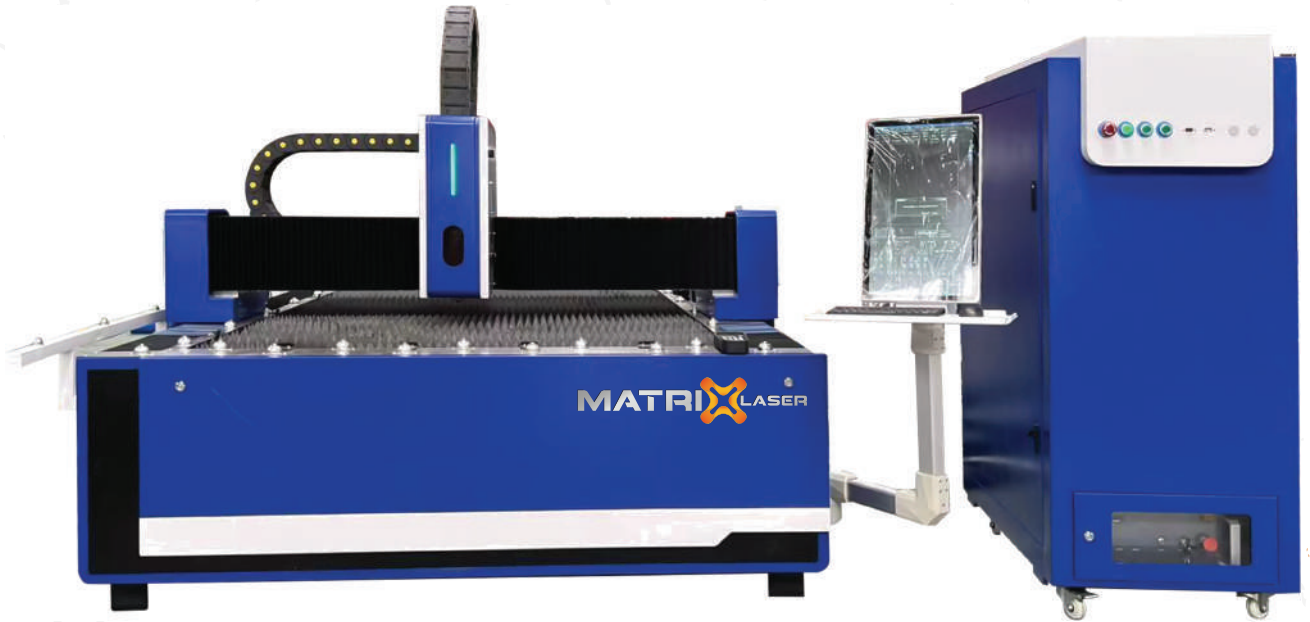


MATRIX LASER

FIBER LASER CUTTING MACHINE

Unleash Precision and Power



MXL-3015 (3000W)

Authorized Dealer

شركة النجم الرقمي للألات و المعدات
DIGITAL STAR MACHINERY AND EQUIPMENTS

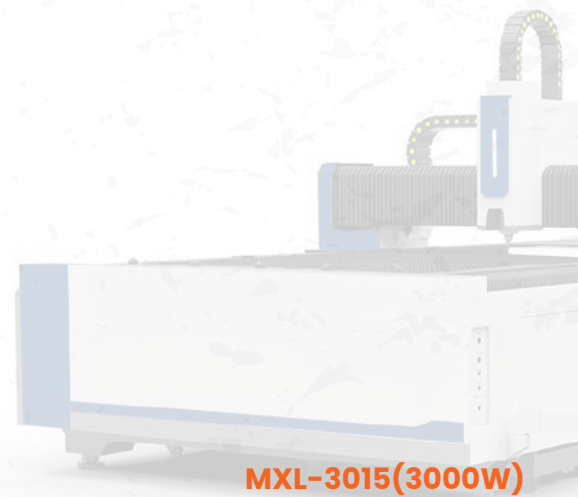
About Us

Source of Digital Solutions...

Welcome to Digital Star, your trusted partner in the world of cutting-edge printing solutions. As a leading printing machines, materials, and ink authorized dealer in Riyadh – Saudi Arabia (KSA), we pride ourselves on delivering state-of-the-art technology that empowers to achieve unparalleled levels of efficiency and quality.

At Digital Star, we understand the pivotal role that printing machinery plays in the success of your operations. With a commitment to innovation and excellence, we curate a diverse range of top-tier printing machines to meet the unique needs of our clients. Our product line-up reflects the latest advancements in the industry.

As a responsible printing machines supplier, we prioritize sustainability. Our commitment to eco-friendly practices is reflected in the products we offer, promoting energy efficiency and environmentally conscious manufacturing processes. When you choose Digital Star, you're not just investing in cutting-edge technology – you're partnering with a company that values the planet as much as your success.



MXL-3015(3000W)

PRODUCT OVERVIEW

- This machine is specially developed for cutting metal sheets. The advantages of this machine are reasonable price, high cost performance and reliable performance.

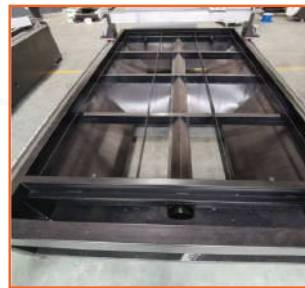
Application materials:

- The fiber laser cutting equipment is suitable for cutting various metal sheets, such as carbon steel sheet, iron sheet, stainless steel sheet, low carbon steel sheet, alloy steel sheet, spring steel sheet, galvanized iron sheet, aluminum sheet, copper sheet, brass sheet, bronze sheet, gold sheet, silver plate, titanium plate, etc.

Application Industries:

- The Fiber Laser Cutting Machines are widely used in manufacturing sheet metal processing, metals components and parts, ironware, chassis, racks & cabinets processing, metal crafts, metal art ware, elevator panel cutting, hardware, auto parts, billboard, advertising, signs, signage, metal letters, LED letters, kitchen ware, advertising letters, glasses frame, electronic parts, nameplates, refrigeration machinery, agricultural machinery, food machinery, kitchen stainless steel countertops, aerospace, railroad locomotive, auto parts manufacturing, car body processing, medical equipment, smart home, home appliances, kitchen equipment, fitness equipment, machinery manufacturing, sheet metal processing. etc.

Heavy duty pipe and steel plate welded machine frame



Our machine frame is welded by heavy duty steel plate. And we have the aging vibration process, annealed process. So the machine will not get deformed for long time use.

Here is the process of how we make our machine frame:

Using the thick steel plate to weld the machine frame → Annealing process → Rough machining → Vibratory Stress Relief → Fine machining

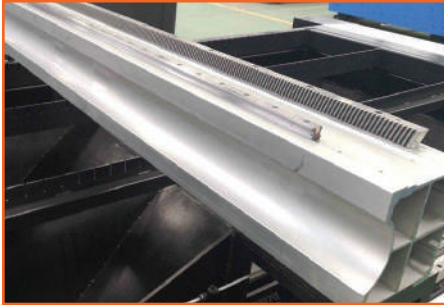
1. The steel plate we use for welding the machine frame very thick, so machine frame will allow the machine bear heavy material.
2. The Annealing process: Annealing is a metal heat treatment process in which the metal is slowly heated to a certain temperature for a sufficient period of time and then cooled at a suitable rate. It is for improve or eliminate various structural defects and residual stresses caused by steel during casting, forging, rolling and welding to prevent deformation and cracking of the frame.
3. Vibration aging treatment is a commonly used method for eliminating internal residual internal stress of engineering materials. It is caused by vibration, so that the vector sum of residual internal stress and additional vibration stress inside the workpiece exceeds the yield strength of the material. The plastic deformation causes the internal stress inside the material to relax and reduce.

From the process that we make the machine frame, you can see we do all the necessary processes to avoid deformation of the bed and make the machine shock resistant



Heavy duty pipe and steel plate welded machine frame

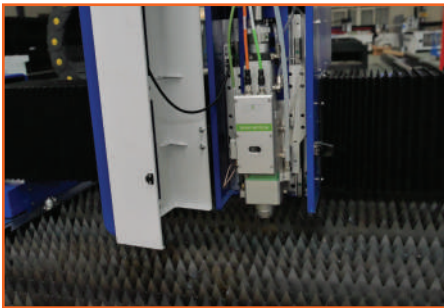
It has the advantages of high electro-optical conversion efficiency, good beam quality, high energy density, wide modulation frequency, strong reliability, long life, and maintenance-free operation



Aluminum Profile Gantry Beam

The gantry beam is aerospace standard manufacturing, strongest strength (6061 T6);

The gantry beam is with high impact resistance performance and light weight, best for high-speed movement.



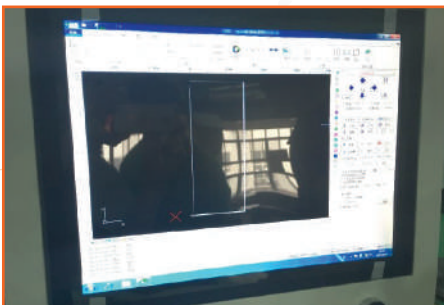
Raytools Laser Head

RayTools AG designs and produces laser beam delivery systems, commonly called beam tools or processing heads. RayTools processing heads have built-in intelligence, incorporating real-time sensing, feedback control loop, and adjustment capabilities. RayTools has grown to be one of the largest beam tool suppliers in the world.



Height Controller – BCS100 V3.0

- BCS100 capacitive height controller is a high-performance control device which uses closed-loop control method.
- Adapt to any cutting head and nozzle.
- Support alarm while hitting the board and beyond the edge.
- Support leapfrogs and segmented piercing.
- Support functions to detect the head height in realtime.



Functional possibility

- Supports flying cutting, frog jumping, electric focusing, double exchange workbench.
- Supports two levels of perforation
- Support communication control of most mainstream lasers in the market



Control

- Support track accuracy 0.05mm, positioning accuracy 0.01mm.
- Maximum cutting speed 100m / min, maximum moving speed 100m / min.
- Support Maximum acceleration 1G



Japan Fuji servo motor

Japan Fuji servo motor is top brand in all over the world. Fuji servo motor is installed on XYZ axis.

The big powerful servo motor on Y axis, makes the machine cutting at high speed, the Max. speed can be 80m/min. Moreover, the Juji servo motor is famous for the high precision and stable performance.



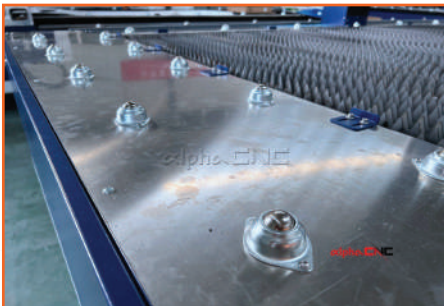
Japan Shimpo Gear Reducer

Japan Shimpo gear reducer is with high transmission efficiency, low energy consumption and superior performance. Service life is much longer.



Taiwan TBI ball screw on Z axis

As the top brand of the ball screw, TBI ballscrew is famous for the high precision, and long service life.



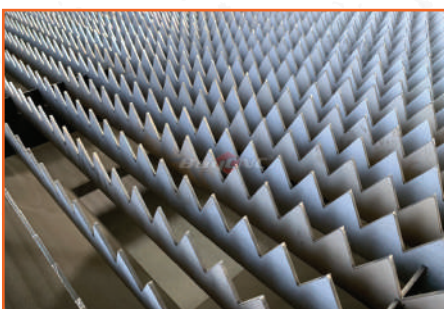
Feeding roll

The machine comes with the feeding roll. The feeding roll will help the worker feeds the material easily



Electrical Proportional Valve

It can realize the endless adjustment of pressure and speed, and avoid the impact phenomenon when the normal switching valve changes direction



Serrate working platform

The steel serrated table can withstand heavier work pieces and has only a small area to touch the workpiece when cutting, maximizing the melting of the table surface by the heat of the laser.

Each piece is independent for easy replacement and maintenance.



USB Data interface

There are three USB data ports, which can be easily inserted U disk and read files.



Rotatable monitor support frame

The monitor is fixed on a rotatable support frame, which is convenient for the staff to adjust the angle according to their needs.



Big Independ Control Cabinet

Control panels, drivers, and other low voltage components are installed in the control cabinet. Larger space helps to place and dissipate electrical components. It can prevent interference to the greatest extent.



Automatic lubrication system

The function of the automatic oil pump is mainly to perform regular quantitative oiling on the easily wearable guide rail, ballscrew and the rack gear. It is by the digital controller to control the lubrication pump working cycle; lubrication time and intermittent time.



Water Chiller

The function of the water cooler is to reduce the temperature of the laser generator and prevent the laser from being burned out. We only use brand-name water coolers with reliable quality.



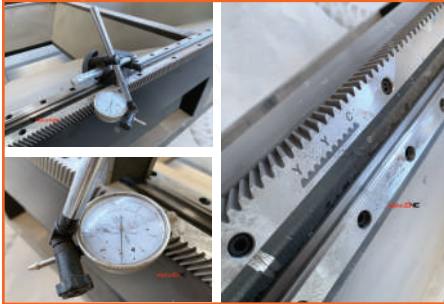
Exhaust Fan

The main function of the fan is to remove the smoke from the cutting, to ensure that the workshop air is clean, and to prevent the smoke from contaminating the lens.



Air conditioner

There are three USB data ports, which can be easily inserted U disk and read files.



XY AixsTaiwan Hiwin Guide Rail& Taiwan YYC helical rack & pinion

Extremely high load capacity in 4 main bearing directions. High torque carrying capacity Optimized roller circulation system and guide element design for smooth, quiet operation Standard end seal. Optimized lubrication channel design minimizes lubricant consumption
Lubricated interface on all sides for easy maintenance. Integrated induction, wear-free measuring system with a maximum measuring

length of 4m and a resolution of less than 1 μ m Hiwin guide system allows you to move the heaviest loads with minimal force while ensuring the design rigidity and precision required by high performance machine and robot users. A variety of precision roller guide systems are available. XY AixsTaiwan Hiwin Guide Rail& Taiwan YYC helical rack and pinion The rack and pinion on XY axis is from Taiwan YYC or German Vastun. The high hardness of the material makes the rack more wear resistant.



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Optional Items



Air compressor + freeze dryer + filter

1. The special air compressor for laser cutting adopts an integrated design, which is simple and convenient to install.
2. Adopt well-known brand freeze dryer to make the freeze drying effect better.
3. The filter adopts imported filter element five-stage filtration to purify the air and improve the air quality.
4. Adopt large main engine and super large oil separation barrel design, complete oil separation, low oil content, customized laser special oil content, oil content is less than 1ppm.
5. Quiet design stainless steel tube to ensure no leakage.



Stabilizer

The function of the voltage stabilizer is to stabilize the power supply voltage that fluctuates greatly and does not meet the requirements of electrical equipment within its set value range, so that the light cutting machine can work normally under the rated working voltage.

For countries and regions with unstable voltage, it is recommended that customers choose this device.



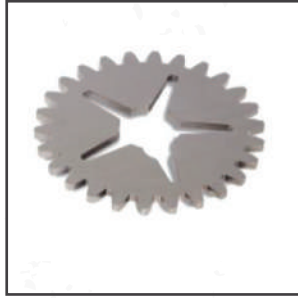
Four filter cartridge dust collector

1. The filter area is increased by 3 to 5 times, and the filter wind speed is greatly reduced
2. The dust removal efficiency is increased to 99.99%
3. The length of the filter cartridge is short, and there is a large excess space, which is conducive to dust settlement
4. Extend the life of the filter cartridge
5. The filter element is short and few, easy to install (top mounted), easy to repair and replace

PRODUCT SAMPLES



Carbon Steel



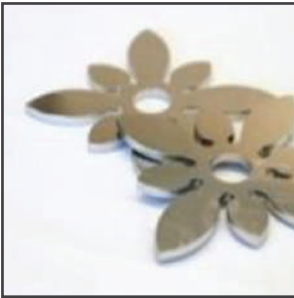
Stainless Steel



Carbon Steel Cutting



Carbon Steel



Carbon Steel



Stainless Steel



Carbon Steel



Brass



Carbon Steel



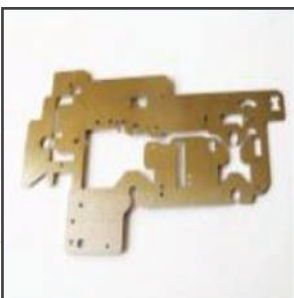
Brass



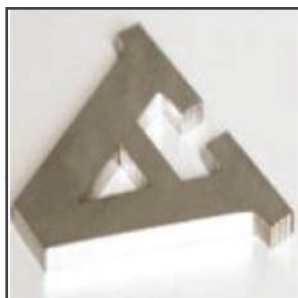
Aluminum Alloy



Stainless Steel



Titanium Alloy



Stainless Steel

LASER CUTTING PARAMETERS

MATERIAL	THICKNESS(mm)	SPEED (m/min)	POWER(W)	GAS	PRESSURE	NOZZLES(mm)
CARBON STEEL	1	28-35	3000	N2/Air	10	1.5 Single
	2	16-20	3000	N2/Air	10	2.0 Single
	2	3.8-4.2	2100	O2	1.6	1.0 Double
	3	3.2-3.6	2100		0.6	1.0 Double
	4	3-3.2	2400		0.6	1.0 Double
	5	2.7-3	3000		0.6	1.2 Double
	6	2.2-2.5	3000		0.6	1.2 Double
	8	1.8-2.2	3000		0.6	1.2 Double
	10	1-1.3	3000		0.6	1.2 Double
	12	0.9-1	2400		0.6	3.0 Double
	14	0.8-0.9	2400		0.6	3.0 Double
	16	0.6-0.7	2400		0.6	3.5 Double
	18	0.5-0.6	2400		0.6	4.0 Double
	20	0.4-0.55	2400		0.6	4.0 Double
22	0.45-0.5	2400	0.6	4.0 Double		
STAINLESS STEEL	1	28-35	3000	N2	10	1.5 Single
	2	18-24			12	2.0 Single
	3	7-10			12	2.5 Single
	4	5-6.5			14	2.5 Single
	5	3-3.6			14	3.0 Single
	6	2-2.7			14	3.0 Single
	8	1-1.2			16	3.5 Single
	10	0.5-0.6			16	4.0 Single
ALUMINUM	1	25-30	3000	N2	12	1.5 Single
	2	15-18			12	2.0 Single
	3	7-8			14	2.0 Single
	4	5-6			14	2.5 Single
	5	2.5-3			16	3.0 Single
	6	1.5-2			16	3.0 Single
	8	0.6-0.7			16	3.5 Single
BRASS	1	20-28	3000	N2	12	1.5 Single
	2	10-15			12	2.0 Single
	3	5-6			14	2.5 Single
	4	2.5-3			14	3.0 Single
	5	1.8-2.2			14	3.0 Single
	6	0.8-1			16	3.0 Single

Note: The red-label parameters in the table are proofing parameters, which are greatly affected by various factors in actual processing.

They are only suitable for small-batch production and are not recommended for large-scale production.

It is recommended to use a higher-power laser.

PRODUCT SPECIFICATION

Model	MXL-3015(3000W)
Working Area	3000*1500mm
X axis working area	3,000mm
Y axis working area	1,500mm
Laser Power	Raycus 3,000W/ Max 3000W
Positioning accuracy	±0.03mm
Repeatability positioning accuracy	±0.02mm
XY Axis Maximum Acceleration	0.5-0.8g
XY Axis Max. speed	80m/min
Working Table	Serrate working platform
XY Axis Transmission system	German helical rack and pinion
Z axis Transmission system	Taiwan TBI ballscrew
Cooling System	Industry water chiller
Power Supply Rated Voltage	3-phase 380V/50Hz
Machine Weight	2500KG
Dimension	4600*2250*1900mm
Chiller Unit	S&A or Hanli Water Chiller
Dust Unit	Extraction Pump

*Specification are subject to change without prior notice, all rights reserved.

SYSTEM REQUIREMENTS (PC's)

Refer to the appropriate section below for the minimum and recommended computer system requirements necessary to use this machine.

Operating System*	Windows 10 (64 Bit) or Later
Processor	i7 - 2.6 GHz or faster
Memory (RAM)	Min. 8GB
Video Card and Monitor	1280x1024 or Higher Resolution
Working Hard Disk Space	1 TB SSD or more recommended
Graphics Card	2GB or more (Optional)
Optical drive	DVD-ROM
Other requirements	Ethernet connection for network capable printers
	Available USB ports
Recommended Brand	Lenovo / Dell

* Note: You can use a laptop or desktop computer

* Use the original operating system and software. If you are using pirated operating system or software, we are not responsible for any damage to Machine workings, and also the warranty terms will become void.

POWER REQUIREMENTS

Voltage Regulator	8000W Stabilizer
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OTHER REQUIREMENTS

Coolant	Min. 10L Distilled Water (For Chiller)
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Terms and Conditions

01. Payment to be made in SAR currency.
02. Payment Terms : As mentioned in Quotation.
03. Bank Charges: Any bank charges relevant to the above transactions will be to your account.
04. Any charges, duties, taxes or levies at the ports of entry will be to our account.
05. The charges of loading, boarding and local conveyance of the technician will be to our account.
06. Any required electrical, mechanical and civil site preparation should be done by the customer according to our engineer's requirements.
07. Digital Star Machinery and Equipments will not be held responsible for delays caused by any damage in the equipment due to shipment, unloading accidents & any related reasons, which is beyond our control.
08. Warranty will be applicable as per our Warranty Policies. The Warranty will be valid after signing of Warranty Policies.
09. Service will be free of cost within 12 months from the date of installation.
10. Any claim will be invoice directly to you then we will send for claiming procedure which will take 45-60 days, if the claim got approved credit note will issued directly.
11. Delivery: As mentioned in quotation

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