

FIBER LASER CUTTING MACHINE MODEL : PG6025 - 12000W





TSF
MACHINERIES

Technology Solution
Factories Machines TR L.L.C
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TECHNCIAL PARAMETERS

MAIN SPECIFICATION		
1	Laser Source	12000W RACUS
2	Laser cutting Head	BOCI Autofocus BLT442
3	Body	AORE Laser
4	Beam	AORE Laser
5	X / Y – axis precision rails	AORE Laser
6	X / Y – axis precision racks	AORE Laser
7	X, Y, X – axis servo motors and drivers	China Innovance
8	Reducer	China kofon
9	Electrical components	AORE Laser
10	Electronic control cabinet	EU standard strong and weak electrical separation electronic control cabinet
11	Control system	FSCUT 6000
12	Pneumatic components	AORE LASER
13	Water Chiller	HANLI
14	Exhaust Smoke system	Exhaust Fan
15	Machine Total Power	12kw ; About 72.3kw

LASER CUTTING HEAD PARAMETERS = BLT442

PARAMETERS	VALUES
Laser Wavelength	: 1030 ~ 1090nm
Laser Power	: ≤15 kW
Fiber Interface	: Q+, QD, QBH, ADD, EOC
Spot Magnification	: M=2.0
Max. Focus Adjustment Range	: -45 ~ +50 mm
NA	: Max. 0.13 at Fc100
Centering Adjustment Range	: ±1.5mm
Focusing Acceleration	: 7.5 m/s ²
Cutting Gas Interface	: ø 10, max 25 bar (2.5 MPa)
Nozzle Cooling Gas Interface	: ø 6, max 5bar (0.5 Mpa)
Water Cooling Interface	: ø 8, max 5 bar (0.5 MPa), min flow 2.0 L/min
Working temperature	: 5 ~ 55°C (41 ~ 131°F)
Storage Temperature	: -25 ~ +55°C (-13 ~ 131°F)
Dimension	: 448 mm x 122 mm (QD)
Weight	: 6.1kg

MACHINE CONFIGURATIONS:

	COMPONENT	DESCRIPTION	BRAND / ORIGIN
	12000W RAYCUS	High-Power Multimode Continuous Fiber Laser Series with high electro-optical conversion efficiency, high light beam quality, high energy density, wide modulation frequency 100,000 hours life time more stable and cost-efficient maintenance free.	
	BOCI BLT 442 AUTO FOCUSED LASER HEAD	World Leader in Laser Tools. Auto-Focus Laser Cutting Technology. High Speed, High Thickness, Lower Cost of Consumables.	
	INOVANCE SERVO MOTOR & DRIVER	Servo Signal, high Transmission through the position, torque, speed, fast response.	
	CONTROL SYSTEM (FSCUT 6000)	FSCUT6000 an EtherCAT control system for single-chuck pulling machine's. Compared with other tube cutting systems in the market, it has the advantages of improving cutting efficiency, supporting various bevel processing, and ensuring cutting stability	

	ELECTRIC COMPONENTS	Highly stable Electrical Control Components.	AORE LASER
	SMC PNEUMATIC COMPONENTS	Steples control of air pressure proportional to an electrical signal. Serial communications specifications, Compact/ Lightweight (Integrated communications parts)	AORE LASER
	WATER COOLING SYSTEM	Water chiller of Fiber cutting machine's water system adopts double temperature water chiller, one is cooling laser and the other is cooling cutting head	HANLI
	REDUCER	More Powerful, High Efficiency, High Rigidity, Output Diversification. 100,000 hours life time cost-efficient and maintenance free.	KOFON REDUCER
	AORE LASER GUIDE RAIL	Linear guide design, carrying capacity. Long-life high-speed, high precision and smooth linear motion.	AORE LASER
	AORE Laser GEAR & RACK	High precision, long life can provide rigorous support for quenching helical gears and grinding helical gears.	AORE LASER

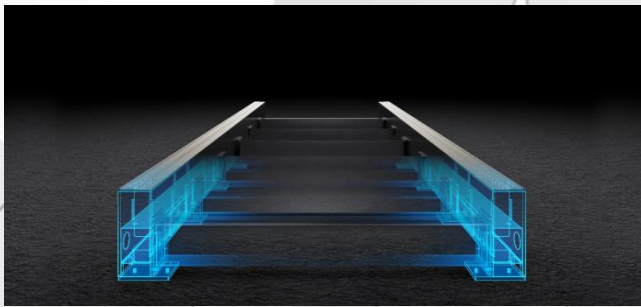
	AUTO / HIGHER	Raise system adjust the focal length automatically according to the height of the plate	AORE LASER
	Security/Stability IPAD DESIGN SCREEN	A vertical screen display, different from the traditional horizontal one with good response speed, higher contrast, wider view, lower consumption as well as high resolution.	AORE LASER
	VOLTAGE STABILIZER	Voltage deviation 80KVA Stabilizer 380V/3Phase, 50Hz/60Hz	AORE LASER

MACHINE ADVANTAGE



Modular Workbench Design

- ❖ The workbench features a modular assembly design, ensuring a stable structure, strong load-bearing capacity, and easy disassembly, replacement, and maintenance.



New Double-Keeper Bed Structure

- ❖ Targeting high-efficiency machining needs, the self-developed double-keel design with interlocking stop joints ensures no deformation during long-term cutting and guarantees stable equipment operation.



Intelligent Control System

- ❖ Intelligent nesting and automatic focus adjustment reduce manual intervention, lowering costs and increasing productivity.



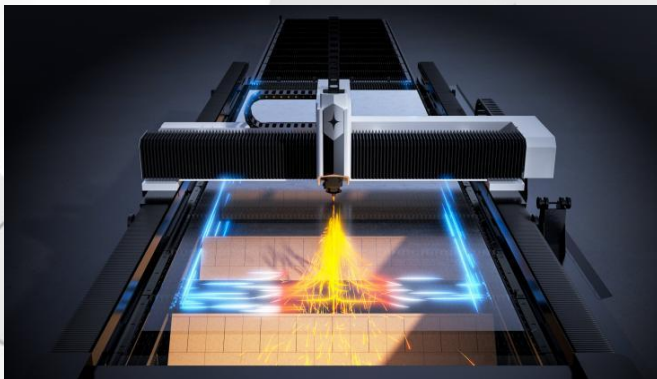
Smart Dual-Platform

- ❖ Streamline loading and unloading workflow and reduces processing periods for better efficiency.



Advance Heat-Resistant Design

- ❖ The machine bed uses mineral fireproof materials to significantly reduce the risk of heat distortion during heavy-duty processing, extending the equipment's service life.



Follow-up Zoned Dust Removal

- ❖ The zoned dust collection system achieves dust removal efficiency of $\geq 95\%$, effectively improving the cutting environment.



Engineering for Heavy Sheet Cutting

- ❖ Effortlessly handles ultra-thick metal sheets from 30mm to 120mm. Equipped with a high-power laser source, it delivers deep penetration, high-speed cutting, and stable performance.

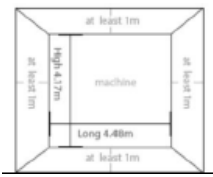
CUTTING CAPACITY

LASER SOURCE	ITEM	MILD STEEL	STAINLESS STEEL	ALUMINIUM
LASER 12KW FOR SHEET	Regular Cutting (mm)	30mm	20mm	25mm

MACHINE PARAMETERS

Model	PG-6025 - 12000W
Processing format	: 6050mm × 2530mm
X – axis stroke sheet	: 2530 mm
Y – axis stroke sheet	: 6050 mm
Z – axis stroke sheet	: 375mm
Positioning precision X/Y-axis sheet	: 0.03mm
Repositioning precision X/Y-axis sheet	: 0.02mm
X/Y maximum move speed	: 120 m/min
The maximum acceleration of the X/Y axis	: 1.5G
Power Supply Voltage	: 380V/3Ph/50Hz
Brand New	: CHINA

PREPARATION BEFORE ORDER:

Power Supply	 Industrial Electricity 380V 50HZ	(1) Rated output voltage : 380V (2) Voltage Frequency : 50Hz (3) Three-phase voltage stability: +5% (4) Output voltage regulation
Position to Show Machine		Put machine evenly on ground. Position follows 6 “No rules-no inflammable, no explosive, no volatile solvent, no dust, no corrosion, no fumes.
Cutting Assisted Gas	 Oxygen	When using oxygen as assisted gas, the pressure is to be up to 1MPa and purity of 99.9%; when cutting iron, an additional small carburetor has to be added with vaporization capacity 30NM3/H or vaporization flow amount 50NM3/H.
	 Nitrogen	N2 cut for stainless steel, its pressure reaches 2MPa, in other name 20KG, purity of 99.999%; A capacity for Carburetor is 50N3/H with design pressure 2.5MPa. When using with small cylinder of N2 for cutting, a high pressure nitrogen meter is a must with range from 0 to 6MPa.
		Air cut mainly used in cutting for thin sheet steel: It is better to use the screw type air air compressor (stable pressure of 1.2MPa, the displacement of 100 L /min). Prepare with you a 3- grade filtration device (Q.P.S) and that equipped with air dryer (treatment capacity 2.5Nm2/min), an air storage tank (0.6 cubic meters). Recommend to select the quality filter, the higher the configuration, the least possibility of being contaminated the protective lens by oil and water. Thus, the cutting effect is better.)

EXCLUSIVE OFFER IN COLLABORATION WITH BROTHER GAS

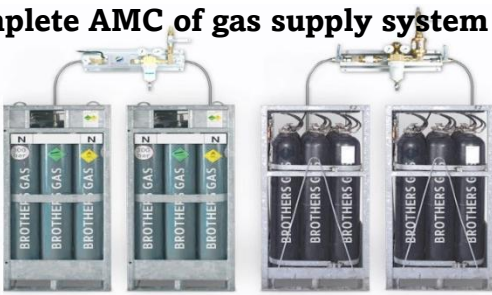
Initial 2 racks will be provided FOC to customer upon purchase of Laser Cutting Machine for its commissioning upon dealing with Brother Gas.

Brother Gas will support installation and commissioning of total bulk gas solution along with pipeline, FOC upon minimum volume commitment with Brother Gas.

Special liquid price will be provided to customer with an additional 15% discount compare to market price along with tank and pipeline investment.

****tank investment and bulk installation is completely subject to minimum volume commitment from customers.**

Complete AMC of gas supply system will be taken care by Brothers Gas to customers, FOC.



Nitrogen Rack - 1x16 Cylinder (160Nm3) - 99.999%



Oxygen Rack - 1x16 Cylinder (160Nm3) - 99.5%



Gas Dura Cylinder

CRITERIA FOR GAS SUPPLY SELECTION:

Supply Solutions	Purity (min.)	Pressure (Bar)	Civil Work	Min. Gas Consumption (m3/month)	Capital Investment
Loose Cylinders	4.6	200	No	<500	Low
Cylinder Rack	4.6	200	No	> 500 – 1500	Low
Bulk – Dura/Mini Bulk	5	17 - 32	No	> 500 – 1500	Low

NOTE: TSF PROVIDES A UNIQUE DEAL TO ITS CUSTOMERS IN CORPORATION WITH BROTHER GAS. THE PRICE COMMITMENT WILL SOLELY BE BETWEEN BROTHER GAS AND CUSTOMER.

OPTIONAL CONFIGURATION:

Save your Gas Cost, below is an Estimate of Cutting Capability by Compressor to Save Gas Cost. Contact our experts to know more about our Compressor.

OPTIONS :	DESCRIPTION	BRAND
	Air Compressor Up to 10 Bar Pressure can be used so save cost up to 35% of your thickness capacity. (Save Nitrogen/Oxygen Cost)	ATLAS COPCO
	16-Bar Screw Compressor 60-70% of the thickness capacity can be easily cut by the 16 Bar Pressure Compressor, providing you a great saving on Cost per cut. (Save Nitrogen/Oxygen Cost)	PIONEERAIR
	18-Bar Screw Compressor 75- 85% of the thickness capacity can be easily cut by the 18 Bar Pressure Compressor, providing you a great saving on Cost per cut.	PIONEERAIR
	COMPRESSED AIR SYSTEM FOR LASER 30-Bar Booster Compressor Cut 95% of the thickness capacity by the 30 Bar Pressure Booster 0.3Mpa reciprocation air compressors, directly get 30 bar compressed air Ø 300 liters vertical air storage tank integrated. No dust, No oil, No water for pure air source. Centralized automatic water drainage system, easy, convenient. (Save Nitrogen/Oxygen Cost)	PIONEERAIR

DELIVERY & INSTALLATION:

1. Delivery at your site within UAE.
2. Training & Installation by our skilled Engineers at your site.

AFTER SALES SERVICE:

1. Two years warranty (One year spare parts & 2nd year free Service).
Except for consumable items e.g Nozzle, Lens etc.
2. Complaint will be solved within 12 working hours, by our in-house skilled Engineers

CUTTING SAMPLES :

