Factory Smart

PENTA LASER

FIBER LASER CUTTING MACHINE
BOLT VII 3015

FEAUTURES:

- Full symmetrical layout: it suits in every customer’s factory
- Embedded electrical cabinet: plug-n-play for no start-up issues on installation
- Quick installation: 4 days, 2 people
- Door and sliding window per each side: for an easy use and maintenance
- Double CNC monitor 24" and industrial keyboard: modern and professional looking
- New elevator design (lifter): more stable and faster than current one
- Sealed enclosure
- Optimized dust collection
- Automation-ready: compare to previous model, both pallets have the same cutting height
- Nozzle exchanger-ready
- Beam centering device-ready
- Transport into std. container (1 x 40 and 1x20')
- CE compliance

CUTTING SAMPLES





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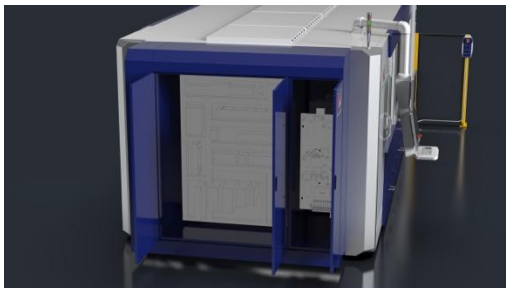
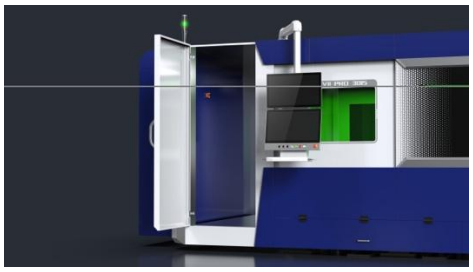




TECHNICAL PARAMETERS AND SPECIFICATIONS

MAIN TECHNICAL PARAMETERS

Technical parameter	
Model	BOLT VII Pro
Power	6000W-30000W
X-axis travel	3000mm
Y axis travel	1500mm
Accuracy of positioning of axis X (GB/T 17421.2-2023)	± 0.04mm
Accuracy of positioning of axis Y (GB/T 17421.2-2023)	± 0.03mm
Repeatability of positioning of axis X (GB/T 17421.2-2023)	± 0.01mm
Repeatability of positioning of axis Y (GB/T 17421.2-2023)	± 0.01mm
Rapid speed	200m/min
Maximum Acceleration	2.8G-4G

MAIN CONFIGURATION

SERIAL NUMBER	MAIN COMPONENTS	BRAND
1	Laser source	MAXPHOTONICS
2	Cutting head	Precitec
3	Z32 CNC system (including control software)	ELEN Group, Italy
4	X/Y/W axis rack	Gudel, Switzerland
5	Guide rail	Bosch, Germany
6	Reducer	Alpha, Germany
7	AC servo motor	MPC, Italy
8	Proportional control valve	Lanny, Italy
9	Laser cutting process database	ELEN Group
10	Nesting software	Lantek, Spain
11	Chiller	DVT, China
12	Dust collector	Donaldson/Topsinn
Optional		
1	Air compressor	Domestic match

2	Stabilizer	Domestic match

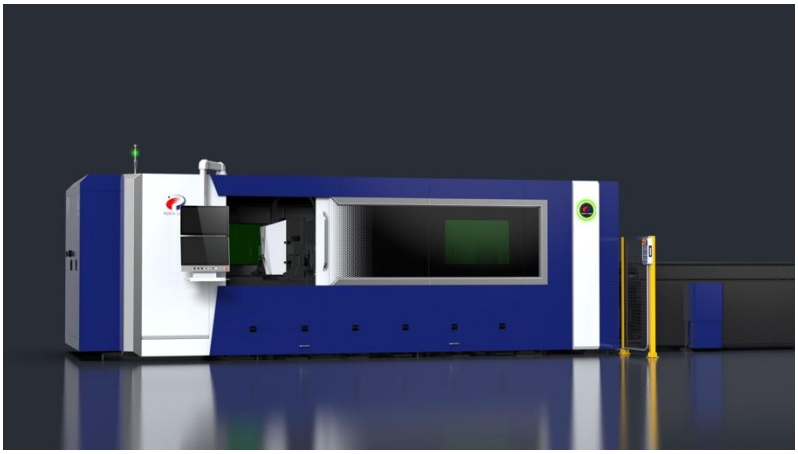
Note:

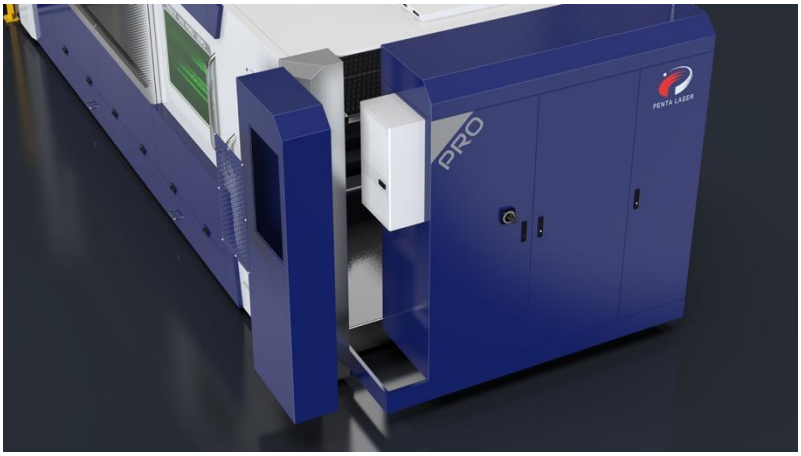
If the customer purchases the above devices themselves,they must purchase the specified brand and model.If the brand is changed arbitrarily,the customer is responsible for any impact on the overall performance of the machine.

The warranty period for Standard Auxiliary Systems provided by us is 1 year.

The connection of the air compressor should be installed by the customer themselves.

MAIN CONFIGURATION DESCRIPTION





LASER CUTTING HEAD

Because the cutting head is equipped with extremely sensitive non-contact sensing device, it can realize very stable Z-axis floating function under the control of the system, directly eliminating the influence of uneven plates on cutting quality and making BOLT CNC laser cutting machine have cutting yield far higher than another domestic laser cutting machines; and users do not need to carry out oil arc extinguishing and other treatment on plates before cutting, thus reducing the workload of users and their installation cost of auxiliary tools.

CHARACTERISTICS

- Stable Z-axis floating
- Anti-collision and breakpoint return
- Auto-focus function
- Performance improvement

Item name	Description	Item name	Description
Cutting materials	MS,SS,AL,Brass, Copper etc	Exchanging time of table	55s
Cutting head	Capacitive height adjuster	Rated supply voltage	380V

MACHINE CONFIGURATION DESCRIPTION

BOLT VII fiber laser cutting machine is one of the best matching laser cutting machines in the world at present, and also the best-sellinglaser cutting machine model in China, with the market share of machines above 6,000 W (inclusive) ranking first in China. With high-power special laser cutting head, it supports the efficient and stable cutting for a long time, and ensures the production continuity for users. The special CNC software Smart Manager 6.3 can optimize a variety of drilling modes, and the new generation of leapfrog management mode makes the movement smoother and the cutting efficiency ahead of other similar products. The machine also has its own cutting process database, which can meet the cutting requirements such as fast drilling, medium and thin plate extremely fast cutting, fine cutting, and glossy cutting. In addition, the cutting thickness limit of thick plates can reach 100 mm.

LATHE BASE

The lathe base is designed by the variable analysis technology of finite element method based on the principle of structure dynamics, obtaining excellent dynamic and static characteristics. It is a frame structure welded with high-quality steel plates and pipes. Various design and machining methods such as welding by professional large-scale OEM partners, secondary aging treatment, and precision machining by large-scale gantry milling machine ensure that the lathe has excellent shock resistance, high rigidity and stability.

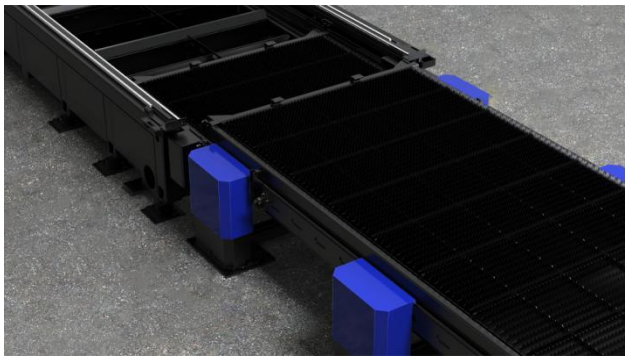
MAIN CONFIGURATION DESCRIPTION

BEAM

We redesigned the crossbeam and drive through cooperation with SmartCae Center in Italy, and conducted the upper simulation analysis by the Nastran Sol 200 Protocol system. The new triangular structure crossbeam is featured by 30% weight reduction, obviously improved dynamic performance, which meets the dynamic response requirements for the movement at a speed of 200 m/min and an acceleration of 2.8 g. The base weight is increased by about 20%, and the lathe fixing mode is improved, eliminating the impact of high acceleration movement.

WORKING TABLE

The BOLT7 series features a modular bed frame design, with separate components for high dynamic motion and high load bearing. This design ensures the loading capacity when cutting thick plate and the long-term stability of the machine tool. Machine adopts hydraulic exchange pallets, and the efficient and stable structure improves the load-bearing capacity of thick plates and ensures higher cutting accuracy when the worktable is moved to the cutting area for processing.



DUST REMOVAL SYSTEM

The worktable of BOLT VII CNC laser cutting machine adopts 16-section partitioned dust collection design, which is used toremove dust, waste gas and other substances in the production process, and makes the working environment comfortable afterfiltering and discharging treatment. Also equipped with imported Donaldson dust collector, it can meet better environmental protection requirements.

MAIN CONFIGURATION DESCRIPTION

PNEUMATIC SYSTEM

Various pressure control valves, pressure switches and solenoid valves are installed in the gas circuit system, which can automatically select the gas under the electrical control. The gas circuit mainly provides cutting gas and auxiliary gas, mainly including oxygen and air. There is a proportional valve for oxygen, which can automatically adjust the cutting pressure according to different material thickness and process database, and air can cut plates with a certain thickness, and is also the auxiliary gas for cooling the cutting head and other mechanisms.

LASER

The professional fibre laser has the following characteristics:

- Electro-optic conversion efficiency of up to 35%-40%, which greatly reduces the use cost.
- High stability, which greatly reduces the requirements for monitoring laser quality in operation.
- Long service life, high precision and free maintenance.
- Superior to traditional lasers in the industrial application, which shows that it has the best wavelength and beam quality suitable for metal processing.
- Semiconductor fibre used as laser generation medium, which is green and environmentally friendly with no need for laser generation gas, and has low cost.

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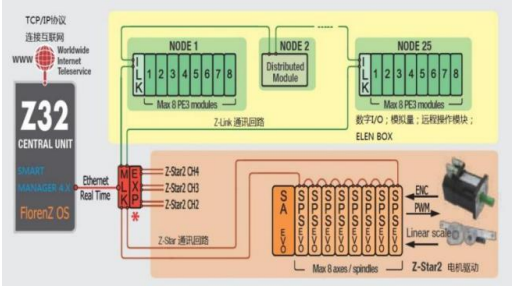
CNC SYSTEM

THE CNC SYSTEM IS THE LATEST Z32 REAL-TIME CONTROL SYSTEM WITH DYNAMIC AND GEOMETRICIMPACT PROTECTION

- New Z32 real time CNC system, with dynamic and geometric JERK control.
- The date exchange between CNC system and machine drive system is adopted with bus.
- 27''TFT with LCD.
- USB port, ethernet interface, can achieve remote assistance.
- Power modulation for the ultimate cutting quality in the corners.
- Z axis following to eliminate the influence of uneven plate.
- Automatically choosing gas type and pressure (N2, O2 and Air).
- Auto restart procedure.

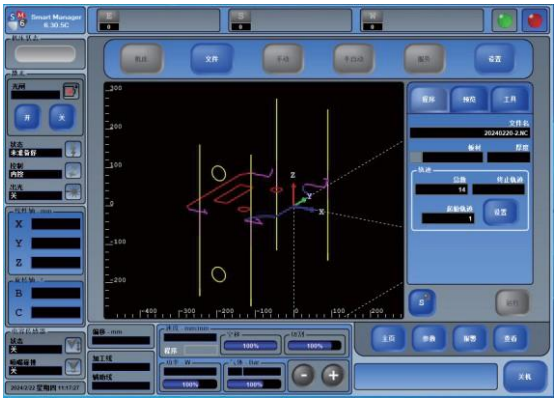


OPERATING SYSTEM SMART MANAGER

Smart Manager is originally imported from Europe. This software is based on the Windows 10 system and can fully interface with Italy CNC system which original imported also. Therefore the real control of the machine, the laser source and software update is more convenient and faster.

MAIN CONFIGURATION DESCRIPTION

- Friendly interface, easy to learn and operation; easy to edit the numerical control program and high readability.
- Cutting parameters database is available, at the same time the real time adjustment to the cutting quality.
- Optimize various fast-moving modes, have the function of frog jump and turn off the assisting gas automatically when fast moving.
- Easier and faster in automatic edge-finding function.



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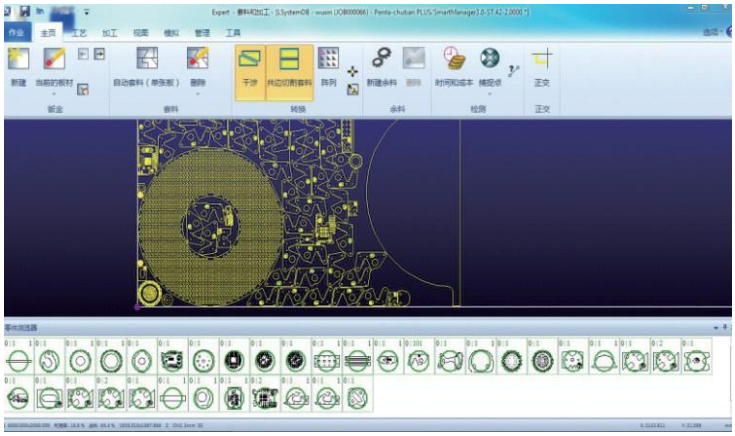
PROFESSIONAL NESTING SOFTWARE

BOLT VII NC laser cutting machine is configured with the Spanish Lantek automatic nesting software for professional laser cutting, which has powerful functions such as automatic programming, nesting, layout, word processing, and process setting, and maximizes the management and utilization rate of sheet metal. Lantek nesting software has the following functions and features:

- Based on AUTO CAD/CAM automatic program nesting software and easy to use.
- Multilayer nesting functions to intensively increase the sheet usage rate
- Use divisional cutting path to avoid overheat.
- Parameter setting automatically apply different cutting parameters to different materials and thickness based on customer's requirement.
- Edge-sharing cutting function optimizes the cutting efficiency and increase the sheet usage rate.
- Pre-perforation: Accomplish the pre-perforation as settled.
- Make use of the rest materials



AC SERVO MOTOR, DRIVE AND REDUCER

The CNC laser cutting machine is equipped with MPC AC servo motor and special customized drive, which has good precision and fast response to ensure the stable operation and operation precision of the lathe.