High precision fiber laser cutting machine

High precision fiber laser cutting machine is a high-end fiber laser cutting and processing system that integrates advanced fiber laser technology, numerical control technology, and precision mechanical technology. It is a perfect fusion of laser technology and numerical control technology, representing a leading level of cutting and processing. It is equipped with an independently developed precision cutting control system, with continuous and fast curve cutting functions and the shortest processing path optimization function, which is not affected by the shape of the workpiece, It can process any shape, with smooth and beautiful cutting seams. It can perform precise cutting of any shape on small workpieces, making your production process simpler and more efficient. The high-precision fiber laser cutting machine has the characteristics of high single machine processing efficiency, complete dust free, stress free, burr free, and smooth and neat cutting edges. One time cutting and forming, without the need for mold development and secondary grinding processing, the process is simple, reducing labor and time investment costs. Compared with traditional stamping and forming, the processing cost of a single workpiece is lower, the efficiency is increased by more than twice, and the subsequent maintenance cost is only 1/3 to 1/4 of the same efficiency CNC punch. It can be applied to sapphire, ceramics, silicon, and various metal sheets to quickly achieve precision cutting, punching, chamfering, and surface treatment. It is widely used in industries such as precision machinery and hardware that require high cutting accuracy.

Main features:

- ✧ Strong adaptability to materials, able to adapt to the cutting and processing of various irregular small hardware parts;
- ✧ High production efficiency, which can replace traditional manufacturing processes such as CNC punching, shearing, and manual work;
- ✧ Fast cutting speed, no edge collapse phenomenon, no damage to the workpiece, with a high yield rate;
- ✧ High cutting accuracy, smooth cut surface without burrs, good verticality, and no need for subsequent secondary processing;
- ✧ The operation is simple and fast, with a rich process database embedded, which can be called or modified with one click;
- ✧ Stable and reliable performance, efficient and energy-saving, low maintenance costs, and long service life;
- ✧ Various non-standard models and fully automatic feeding devices can be customized to shorten the feeding time;
- ✧ Green and environmentally friendly processing, no pollutants, no consumables, and high yield rate;

Ordering Guide

Model STC-XXXX-YY-AABB

STC	XXXX Laser power (W)	YY model	AA X-axis stroke	BB Travel Y-axis
laser cutting	one thousand and five hundred	LS: Screw guide rail	04:400mm	04:400mm
	two thousand	LM: Linear motor	06:600mm	06:600mm
	three thousand			
	Q150: QCW150W			
	Q300: QCW300W			
	Q450: QCW450W			

Main technical parameters:

Laser generator	High performance anti high reflection fiber laser
Laser power	QCW: 150W/300W/450W; CW: 1500W/2000W/3000W
X. Y-axis positioning accuracy	Linear motor: ± 0.003mm; Screw rod: ± 0.02mm
Repetitive positioning accuracy	Linear motor: ± 0.005mm; Screw rod: ± 0.03mm
Maximum positioning speed of the machine tool	100m/min
Cutting width	0.05-0.1mm
Processing format	600mm * 600mm, customizable
Z-axis travel	100mm
acceleration	2G
Platform material	Grade 00 marble
Maximum cutting speed and thickness	0.05-3.0mm stainless steel plate, 45, 20Cr
Maximum air travel speed	100m/min
Overall power	11KW
Continuous working hours	24 hours
Cooling method	water-cooling
Power requirements	Three phase five wire system AC380V 50HZ
Equipment size	Dual drive: 1820 * 1450 * 1780mm; Single drive: 1400 * 1400 * 1850mm

Remarks: 1.1 The above parameters are based on the 150W QC W laser and 6060 dual drive cutting cabinet, which can be customized non-standard according to customer requirements. The configuration and parameters of each model are subject to the technical solution provided by our company; 2. Although the processed workpiece belongs to the same specification variety, there may be differences in processing performance and quality due to differences in actual processing parts, surface conditions, material composition, or processing shapes; 3. The positioning accuracy is greatly affected by environmental temperature, and repeated positioning accuracy may be affected by electrical interference, control system errors, etc., resulting in a certain degree of deviation (≤ 1 μm) .

Application field:

Mainly designed for high-precision micro hole cutting of various metal sheets below 5mm, it is particularly suitable for precision cutting of metal materials such as stainless steel, aluminized zinc plate, silicon steel, alloy steel, copper, and non-metallic brittle materials such as sapphire, ceramics, wafer, etc. It is widely used in industries such as 3C electronics, medical equipment, military industry, aerospace, metal crafts, gold and silver jewelry, hardware products, precision machinery, automotive parts, glasses, and saw blades.

Sample display: