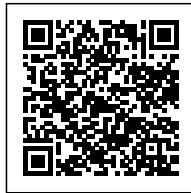


COMPARISON OF DIFFERENT TYPES OF LASER CUTTING MACHINES

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Category: [Laser Cutter News](#)



Fiber laser cutting machine is a CNC laser cutting equipment with fiber laser generator as the light source. Fiber laser has the characteristics of low cost and high efficiency. The advantages of fiber laser cutting metal make it popular in the market, effectively solving the problems of high production cost and low production efficiency, and the market space is large.

The real difference of the laser cutting machine is the precise cutting method, using cutting head and push type, high precision and high efficiency; due to the development of modern cutting machine, the workpiece diameter produced by this cutting machine process is smaller. Laser cutting is very fast, which is not possible with many traditional methods.

Taking laser cutting application as an example, compare the process characteristics of fiber laser cutting machine, [CO2 laser cutting machine](#) and [YAG semiconductor laser cutting machine](#).



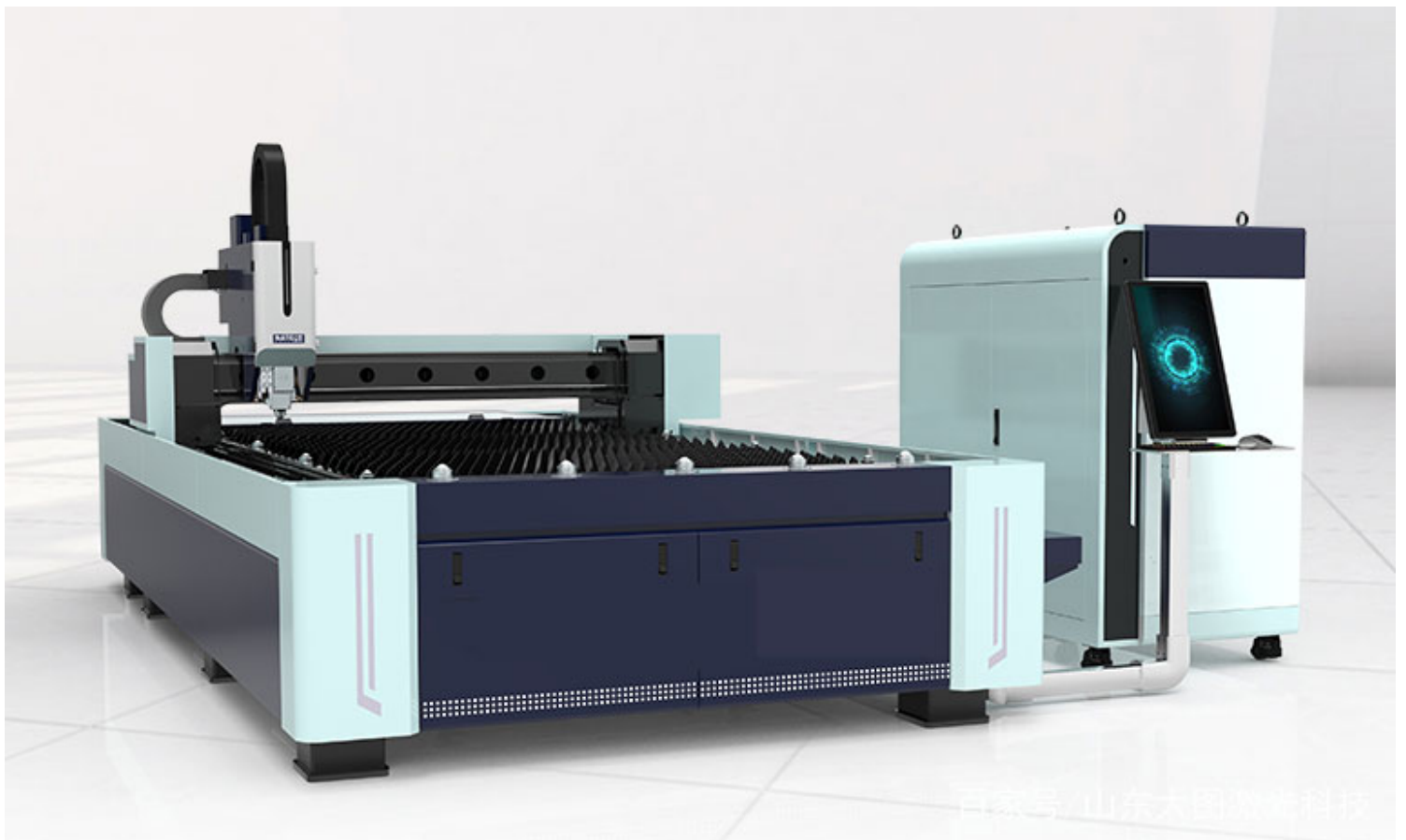
CO2 laser cutting machine

Fiber laser cutting machine VS CO2 laser cutting machine

Advantages of Fiber Laser Cutting Machine

The fiber laser cutting machine has smaller focus, thinner cutting line, higher work efficiency and better processing quality; the cutting speed is very fast, twice that of the same power CO2 laser cutting machine; it provides stable operation and service. The service life of the main components can reach 100,000 hours; the photoelectric conversion efficiency of the fiber laser cutting machine is about 30%, which is 3 times that of the CO2 laser cutting machine, which is energy-saving and environmentally friendly.

The cost of fiber laser cutting machine is extremely low: the power consumption of the whole machine is only 20-30% of that of similar CO2 laser cutting machines; No need to adjust the optical path; small size, compact structure, simple and flexible processing requirements.



Disadvantages of fiber laser cutting machine

Fiber laser cutting machines cannot cut non-metallic materials. Due to its wavelength, it can only cut metal materials, and non-metals are poorly absorbed by it, which affects the cutting area.

Fiber laser cutting machine VS YAG laser cutting machine

Advantages of Fiber Laser Cutting Machine

The cutting speed of fiber laser cutting machine is 4-5 times faster than YAG, suitable for processing and mass production; the operating cost of fiber laser cutting machine is lower than that of YAG semiconductor laser cutting machine; the efficiency of fiber laser cutting machine in photoelectric conversion is 10 times that of YAG about.

Disadvantages of fiber laser cutting machine

The corresponding fiber laser price is higher, so the price of fiber laser cutting machine is much higher than that of YAG laser cutting machine. But the price/performance ratio is actually the highest among the three.

What are the advantages of fiber laser cutting machines in practical use?

Fiber laser metal cutting machine has no cutting force and no deformation during processing; the tool will not wear out and adapts well to the material; whether it is simple or complex parts, it can be cut accurately and quickly by laser; the gap is narrow and the cutting quality is good, high level of automation. The operation is simple, the labor intensity is low, and there is no pollution; it can automatically typesetting and nesting, improve the utilization rate of materials, reduce production costs, and have good economic benefits.

Fiber laser cutting is more precise, the focus can reach 25 μ m, the heat-affected zone is small, the gap is small, and the deformation of the workpiece is small. As a flexible processing method, ACCTEK laser cutting machine can be combined with automatic control system to realize automatic tracking, automatic edge detection and automatic positioning, which greatly improves production efficiency. Widely used in metal cutting, with better performance, can better meet the requirements of fine cutting.

What is the scope of application of fiber laser cutting machine?

The main function of the laser is that it can cut very complicated graphics, and the cutting cost is low. Due to the non-contact cutting, the deformation of the workpiece is small and the product quality is good. Therefore, laser cutting machines are suitable for all types of sheets and tubes.

Fiber laser cutting machines are mainly used in metal processing, aviation, electronics, electrical appliances, automobiles, engineering machinery, agricultural machinery, precision parts, ships, metallurgical equipment, elevators, household items, handmade gifts, metal billboards and other manufacturing and processing industries.

Application of laser cutting machine in pipes: cutting of round pipes, oval pipes, square pipes, double-sided pipes, special-shaped pipes and other pipes; widely used industries include fitness equipment, oil pipelines, construction machinery, automobile manufacturing, and home appliance manufacturing and other processing industries.

Fiber laser cutting machines can be used for both flat and bevel cuts with clean and smooth edges. Compared with traditional CO₂ laser cutting machines, it saves space and gas consumption, and has a high photovoltaic conversion rate. It is a new type of energy-saving and environmental protection product, and it is one of the world's leading technological products.

It can be seen from the above introduction that among the three cutting methods of fiber laser cutting machine, CO₂ laser cutting machine and YAG laser cutting machine, the fiber laser cutting process has obvious advantages. For materials of different thicknesses, the fiber laser cutting machine has a power range of 1000W-30000W to choose from. If you're looking for the right metal cutting equipment, chat now for help.