

# ANALYSIS OF FREQUENTLY ASKED QUESTIONS ABOUT LASER CUTTING MACHINES

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## REDSAIL CM1390E LASER ENGRAVING/CUTTING MACHINE

2-Way Pass-Through  
Professional Laser Machine Manufacturer

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I believe that everyone will have more or less doubts about [laser cutting machines](#). Today, this editor finds answers to common questions about laser cutting machines and laser cutting processing.

## **What is the working principle of laser cutting machine?**

Laser cutting is the use of a focused high-power-density laser beam to irradiate the workpiece, so that the material at the irradiated place is rapidly melted, vaporized, ablated or reached the ignition point, and at the same time, the molten material is blown out by the high-speed airflow coaxial with the beam, and moves through the numerical control mechanical system. A thermal cutting method that cuts the workpiece by irradiating the position of the light spot.

## **Is the laser cutting machine dangerous to operate?**

Laser cutting is a very environmentally friendly cutting method, generally speaking, there is no harm to the body. Compared with ion cutting and oxygen cutting, laser cutting produces less dust, weak light and low noise. However, if the correct operation method is not followed, it will also cause personal injury to the user or damage to the machine.

1. Be careful of flammable materials when using the machine. Certain materials are not allowed to be cut on a laser cutter, including foam core, any PVC material, highly reflective materials, etc.
2. During the working process of the machine, the operator is prohibited from leaving without authorization to avoid unnecessary losses.
3. Don't stare at the laser processing operation. Observation of laser light through binoculars, microscopes, magnifying glasses, etc. is prohibited.
4. Do not store explosive and flammable items in the laser processing area.

# What are the factors affecting the accuracy of laser cutting machine?

There are many factors that affect the accuracy of laser cutting, some are determined by the equipment itself, such as the precision of the mechanical system, the degree of vibration of the table, the quality of the laser beam, the influence of auxiliary gas and nozzles, etc.; some are inherent factors of the material, such as the physical and chemical properties of the material, material reflectivity, etc.; there are some factors that are selected according to the specific processing objects and user quality requirements, and corresponding adjustments are made to determine relevant parameters, such as output power, focus position, cutting speed and auxiliary gas. wait.

## How does the laser cutting machine find the focus?

Since the laser power density has a great influence on the cutting speed, the selection of the focus position is particularly important. The spot size of the focused laser beam is proportional to the focal length of the lens. There are three simple ways to determine the cutting focus in the industrial field:

1. Printing method: Make the cutting head move from top to bottom, and perform laser beam printing on the plastic plate.
2. Inclined plate method: Use a plastic plate inclined at an angle to the vertical axis to pull it horizontally.
3. Blue spark method: Remove the nozzle, blow air, and hit the pulse laser on the stainless steel plate to make the cutting head move from top to bottom.

At present, many manufacturers' machines have realized automatic focusing. With the automatic focusing function, the processing efficiency of the laser cutting machine can be significantly improved: the time for piercing thick plates is greatly reduced; when processing workpieces of different materials and thicknesses, the machine can automatically and quickly adjust the focus to a suitable position.

## **What are the types of lasers and what are their differences?**

The lasers currently used in laser processing and manufacturing mainly include CO2 lasers, YAG lasers, and fiber lasers. Among them, high-power CO2 lasers and YAG lasers are widely used in confidential processing; fiber lasers based on fiber optics have obvious advantages in reducing the threshold, oscillation wavelength range, and wavelength tunable performance, and have become an emerging technology in the laser field. .

## **What is the cutting thickness of the laser cutting machine?**

At present, the thickness of laser cutting machine cutting generally does not exceed 25mm. Compared with other cutting methods, it has obvious advantages for cutting materials with required sizes below 20mm.

## **What are the application ranges of laser cutting machines?**

Laser cutting machine is widely used in automobile manufacturing, kitchen utensils industry, sheet metal processing, advertising industry, machinery manufacturing, Chassis cabinets, elevator manufacturing, fitness equipment and other industries.

The above information is my experience through years of laser cutting machine research, I hope it can be helpful to everyone. More related points need to be discovered slowly by everyone. I will introduce it to you today. If you still don't understand anything, welcome to inquire. We have professional technicians to answer for you! Please log in to the company official website!