

FREQUENTLY ASKED QUESTIONS ABOUT LASER CUTTING MACHINES

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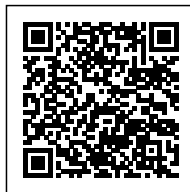
REDSAIL X1390C LASER ENGRAVING /CUTTING MACHINE

20 + years of production experience,
And has a variety of certifications

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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.

How to find the focus of the laser cutting machine?

Since the laser power density has a great influence on the cutting speed, the choice 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 carry out laser beam printing on the plastic plate, and the small printing diameter is the focal point.
2. Inclined plate method: Use a plastic plate inclined at an angle to the vertical axis to pull it horizontally, and look for a small spot of the laser beam as the focus.
3. Blue spark method: Remove the nozzle, blow air, and hit the pulse laser on the stainless steel plate, so that the cutting head moves from top to bottom until the blue spark is the focus.

At present, many manufacturers' machines have realized automatic focusing. With the automatic focusing function, the processing efficiency of the laser cutting machine can be 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 how do they differ?

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 threshold,

oscillation wavelength range, and wavelength tunable performance, and have become an emerging technology in the laser field. .