

WHAT IS THE REASON FOR CONTINUOUS CUTTING DURING LASER CUTTING?

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REDSAIL CM1610 AUTO FEEDING LASER CUTTER

Redsail Laser Cutter / Engraving Machine
1610 for Cutting Soft Materials

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During the [laser cutting process](#), the pressure of the auxiliary gas has a great influence on the cutting result. The auxiliary gas must have enough pressure to completely clear out the waste generated by cutting. Generally, the air pressure should be reduced when cutting thicker workpieces. The residues stuck to the workpiece will damage the cutting edge.

Increasing the gas pressure can advance the cutting speed, but after reaching a maximum value, continuing to increase the gas pressure will cause the cutting speed to drop instead. Under the high auxiliary gas pressure, the reason why the cutting speed of the laser cutting machine decreases can be attributed to the enhancement of the cooling effect of the high airflow velocity on the active area and the cooling effect of the laser active area by the intermittent shock waves in the airflow.

interference. There are non-uniform pressure and temperature in the air flow, which will cause changes in the density of the air flow field. Such density gradients cause changes in the refractive index in the field, thereby interfering with the focusing of the beam energy, causing refocusing or beam divergence. This disturbance affects melting efficiency and can sometimes change the mode structure, leading to poor cut quality if the beam diverges too much. If the spot is too large, it may even cause serious consequences that cannot be effectively cut.

When we use the fiber laser cutting machine to cut, if we want to cut the products to the most accurate, then we must first understand which aspects will affect the cutting accuracy. Below we will briefly introduce for you:

The beam emitted by the laser is conical, so the cut slit is also conical. In this case, the stainless steel with a thickness of 0.4MM will be much smaller than the 3MM slit. Therefore, the shape of the laser beam depends on a major factor that affects the cutting accuracy of the metal laser cutting machine. With such a conical laser beam, the greater the thickness of the workpiece, the lower the precision and therefore the larger the kerf.

The precision of the worktable, if the precision of the worktable is uneven or other reasons will also lead to high-precision laser cutting effect.

When the conical laser beams are gathered together, the laser beams will become smaller and smaller at this time, so the precision of the laser cutting becomes higher and higher, especially the width of the slit becomes smaller and smaller. At this time the smallest spot can reach 0.01mm. This is also one of the factors that affect the cutting accuracy of the laser cutting machine.

In this case, the cutting accuracy of different materials is also slightly different. Even if it is the same material, if the composition of the material is different, the cutting accuracy will be different. Therefore, the material of the workpiece also has a certain impact on the accuracy of laser cutting.