HOW TO JUDGE THE CUTTING QUALITY OF LASER CUTTING MACHINE

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The quality of a laser cutting machine mainly depends on its cutting quality, which is the most direct way to check the quality of laser cutting machine equipment. For new customers, when purchasing equipment, they will ask to see the laser cutting machine proofing first. In addition to the cutting speed of the equipment, proofing also depends on the cutting quality of the sample. So how to judge the cutting quality of the laser cutting machine? What aspects should be paid attention to? The following Redsail Laser will provide you with a detailed introduction:

How to judge the cutting quality of laser cutting machine? The following nine standards are essential:

1. Roughness: The laser-cut part will form vertical lines, and the depth of the lines determines the roughness of the cutting surface. The lighter the line, the smoother the cut. Roughness affects not only the appearance of the edge, but also the friction characteristics. In most cases it is necessary to minimize roughness, so the lighter the grain, the better the cut.

2. Verticality: If the thickness of the sheet metal exceeds 10mm, the verticality of the cutting edge is very important. As you move away from the focal point, the laser beam becomes divergent and the kerf widens towards the top or bottom depending on the position of the focal point. The cut edge deviates by a few hundredths of a millimeter from the vertical, the more vertical the edge, the better the cut.

3. Cutting width: Generally speaking, the cutting width will not affect the cutting quality. The width of cut only plays an important role when forming particularly precise contours inside the part. This is because the width of cut determines the minimum internal warpage of the profile. As the thickness of the sheet increases, the cutting width increases accordingly. Therefore, in order to ensure the same high precision, no matter how large the cutting width is, the processing area of the laser cutting machine should remain constant.

4. Texture: When cutting thick plates at high speed, the molten metal will not appear in the incision below the vertical laser beam, but will be ejected at the rear of the laser beam. As a result, a curve is formed on the cutting edge and this curve closely follows the moving laser beam. To correct this, reducing the feed rate at the end of the cutting process can greatly eliminate line formation.

5. Burrs: When burrs are formed, it is a very important factor to determine the cutting quality of the laser cutting machine. Because the removal of burrs requires additional workload, the severity and amount of burrs can intuitively judge the quality of the laser cutting machine.

6. Material deposition: Before the laser cutting machine starts to melt and perforate, a layer of oil-containing special liquid is first encountered on the surface of the workpiece. During the cutting process, due to gasification and no use of various materials, the customer uses the wind to remove the cut, but upward Or downward discharge can also form deposits on the surface.

7. Depression and corrosion: Depression and corrosion will adversely affect the surface of the cutting edge and affect the appearance. They occur among cutting errors that should generally be avoided.

8. Heat-affected zone: In laser cutting, the area near the incision is heated. At the same time, the structure of the metal changes. For example, some metals harden. The heat-affected zone is the depth of the area where the internal structure changes.

9. Deformation: If the laser cutting machine cuts and heats the part sharply, it will deform; this is especially important for fine processing, because the contours and connections here are usually only a few tenths of a millimeter in width; control the laser power and use short Laser pulses reduce part heating and avoid deformation.