

WHAT CAUSES THE ERROR OF THE METAL LASER CUTTING MACHINE?

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There will be many problems during the use of [metal laser cutting machines](#), including errors in the process of laser cutting, poor laser cutting effects, etc., so how do these errors occur? The following editor will answer it for you.

1. Workpiece geometric error

Due to various reasons, the surface of the processing object is uneven, and heat is generated during the cutting process. In this way, the surface of the thin plate part is easily deformed, and due to the uneven surface, there will also be differences between the laser focus and the position of the surface of the processed object. The ideal position changes randomly.

2. The cutting thickness of the material exceeds the standard

The thickness of the cutting material exceeds the standard. Take 3000W as an example: the metal CNC laser cutting machine can cut the plate thickness below 20 thicknesses, the thinner the plate, the easier it is to cut,

The quality is also better. If the plate is too thick, it will be difficult for the laser cutting machine to cut it. In the case of ensuring the cutting, the processing accuracy will have errors, so the thickness factor of the plate must be determined.

3. Programming errors

During the processing of the fiber laser cutting machine, the processing trajectory on the complex surface is fitted by straight lines, arcs, etc. There are errors between these fitting curves and the actual curves, and these errors make the relative position of the actual focus and the surface of the processing object and The ideally programmed position produces an error. And some teaching programming systems will also introduce some deviations.

4. Generation of focus position error during laser cutting

In the cutting process of the fiber laser cutting machine, there are many factors that cause the relative position between the focus and the surface of the processed object to change, which is also related to the surface smoothness of the processed product, the workpiece clamping method, the

geometric error of the machine tool and the long time of the machine tool. The deformation of the load, the thermal deformation of the workpiece during processing, etc. will cause the laser focus position to deviate from the ideal given position (programmed position).

These random errors are unavoidable, and only through online detection and control can the generation of errors be subtracted, so as to improve the workability of the fiber laser cutting machine.