

TEACH YOU HOW TO SOLVE THE BURNING MARKS OF THE FIBER LASER CUTTING MACHINE

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When using a [fiber laser cutting machine](#) for sheet metal processing, especially some workpieces have many sharp corners, it is easy to have sharp corner ablation problems during cutting. So how did this problem arise? How should we solve this problem?

The cause of sharp corner ablation problem:

When using a fiber laser cutting machine to cut the sharp corner area of the template, when the laser beam turns to the other side after the sharp corner is processed, the moving speed of the laser beam is first reduced to zero and then re-accelerated to the normal speed, so the residence time in the sharp corner area is relatively long, and the energy of the laser beam does not decrease during the time of speed change. The laser beam is always in working condition, so the heat of the processed template is highly concentrated in this area, and the cutting paths overlap each other, which makes the temperature at the sharp corner rise. Although the heat-affected zone of the CNC laser cutting machine is small, the heat dissipation surface area at the sharp corner is small and the effect of heat transfer is poor. The heat-affected zones on both sides of the sharp corner overlap each other, resulting in the melting of the material due to high temperature, and the erosion of the high-temperature auxiliary gas. Corner ablation and "lack of meat" phenomenon.

Second, the solution:

The cause of sharp corner ablation is mainly caused by the change of cutting speed at the sharp corner, so preventing sharp corner ablation can be prevented in theory by adjusting the cutting route of the fiber laser cutting machine and reducing the speed change.

During the cutting process, the circular arc can be circumvented to ensure that the cutting speed remains unchanged. During the time of idling the circular arc, the temperature of the working side of the cut side can be cooled down. At this time, the sharp corner is located when the other side is processed. The heat is not too concentrated, which ensures that the sharp corners are cut completely and smoothly.

Although the sharp corner ablation problem can be avoided by adjusting the cutting path of the fiber laser cutting machine, manual adjustment is required by the processing personnel, which is very labor-intensive and time-consuming, and is not conducive to mass production. If we want to solve the problem of many sharp corners and large cutting volume, we can use the method of adding and

adding. Addition refers to adding a small piece of supplement at the sharp corner of the cutting. This method can effectively ensure that the sharp corner will not be ablated, and at the same time the size of the sharp corner will not change. For the sample with the sharp corner on the outside, add After the addition, it can not only prevent the template from hurting the user during use, but also ensure that the template will not be bruised during use.