

3 FOCAL RELATIONSHIPS OF LASER CUTTING MACHINES

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Do you know the focal relationship of the [laser cutting machine](#)? It has three forms of cutting focus on the workpiece, cutting focus inside the workpiece and cutting focus on the surface of the workpiece, which are the so-called negative focal length, positive focal length and zero focal length. Let's introduce the laser cutting machine in detail below. 3 focal relationships.

The cutting focus is on the workpiece

In this way we also have a negative focal length, because the cutting point is not located on the surface of the cutting material nor inside the cutting material, but is positioned above the cutting material. This method is mainly used for cutting materials with high thickness. The reason why this method positions the focus above the cutting material is mainly because the thick plate requires a large cutting width, otherwise the oxygen delivered by the nozzle is very likely to be insufficient and cause the cutting temperature to drop. But one disadvantage of this method is that the cutting surface is relatively rough, which is not suitable for high-precision cutting.

The cutting focus is inside the workpiece

This way also becomes positive focal length. When the workpiece you need to cut is stainless steel or aluminum steel plate, the mode where the cutting point is inside the workpiece is commonly used. However, a disadvantage of this method is that due to the principle of focus to cut the surface, the cutting width is relatively larger than that of the cutting point on the workpiece surface. At the same time, this mode requires a large cutting airflow, sufficient temperature, and a slightly longer cutting and perforation time. So when you choose the material of the workpiece is mainly stainless steel or aluminum lamp with high hardness, choose it.

The cutting focus is on the workpiece surface

This method also becomes 0 focal length, which is commonly used when cutting workpieces such as SPC, SPH, SS41, etc. When using it, the focus of the cutting machine is selected close to the surface of the workpiece. In this mode, the smoothness of the upper and lower surfaces of the workpiece is different. It is said that the cutting surface close to the focal point is relatively smooth, while the lower surface away from the focal point of cutting appears rough. This mode should be determined according to the process requirements of the upper surface and the lower surface in

practical applications.

The above are the three focus relationships of the laser cutting machine, summed up as positive focal length, negative focal length and zero focal length. From this we also know that when using a laser cutting machine to process different workpieces, different focus modes need to be used correspondingly, which can give full play to the performance advantages of the laser cutting machine.