

# THE ADVANTAGES OF LASER CUTTING

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## Laser cutting machine

Compared with other hot cutting methods, laser cutting has the characteristics of fast cutting speed and high quality. The specific summary is as follows.

### Good cutting quality

Due to the small laser spots, high energy density, and fast cutting speed, laser cutting can achieve better cutting quality.

The laser cutting incision is narrow, with both sides parallel and perpendicular to the surface, and the dimensional accuracy of the cutting component can reach  $\pm 0$ .

The cutting surface is smooth and beautiful, with a surface roughness of only a few tens of micrometers. Even laser cutting can be used as the final process, and the parts can be directly used without mechanical processing.

After laser cutting, the width of the Heat-affected zone is very small, the performance of the materials near the cutting joint is almost unaffected, the workpiece deformation is small, the cutting accuracy is high, the cutting joint geometry is good, and the cross section of the cutting joint is relatively regular rectangular. The laser cutting, oxyacetylene cutting, and plasma cutting methods are shown in Table 1, and the cutting material is 6.2mm thick low-carbon steel plate.

Due to the transmission characteristics of laser, laser cutting machines are generally equipped with multiple CNC workstations, and the entire cutting process can be CNC controlled. During operation, you only need to change the CNC program to cut parts of different shapes, which can be used for 2D and 3D cutting.