INTRODUCTION OF TWO FORMS OF FOCUSING AND TRACKING SYSTEM FOR LASER CUTTING MACHINE

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Laser cutting technology is widely used in the processing of metal and non-metallic materials, which can greatly reduce the processing time, reduce the processing cost and improve the quality of the workpiece. Laser cutting is realized by using high power density energy generated after laser focusing.

The material treatment of optical fiber laser cutting equipment is based on the heat treatment process of the part where the material absorbs the laser energy. The lens components of the optical fiber laser cutting head can be easily removed by pulling without disassembling the overall structure, and the maintenance and replacement time is short, which can effectively solve the problems of difficult disassembly and installation of the lens components in the traditional laser cutting head and slow lens replacement. Aiming at the weak link of domestic laser cutting machine at present - focusing and tracking system - the mechanism of its influence on cutting quality is analyzed, and the design principles of focusing and tracking system are put forward in combination with practical application requirements.

The focusing and tracking system of laser cutting machine is generally composed of focusing cutting head and tracking sensor system. The cutting head is composed of light guide focusing, water cooling, air blowing and mechanical adjustment parts; The sensor is composed of sensing element and amplification control part. The tracking system is completely different according to different sensor elements. Here, there are mainly two forms of tracking system. One is the capacitive sensor tracking system, also known as non-contact tracking system. The other is inductive sensor tracking system, also known as contact tracking system.