

# REGULAR MAINTENANCE AND MAINTENANCE OF LASER CUTTING MACHINE

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The normal operation of many mechanical equipment requires corresponding regular maintenance and maintenance, and [laser cutting machines](#) are no exception. Regular maintenance and maintenance can effectively delay the decline in cutting efficiency of laser cutting machines and avoid sudden failures. So how should the laser cutting machine be maintained and maintained?

## **Cooling system maintenance**

The water inside the water chiller needs to be replaced regularly, generally every 3-6 months. If the water is not changed for a long time, scale will be formed and the waterway will be blocked. The water quality and temperature of the cooling water will directly affect the service life of the laser tube. The water temperature is recommended to be within 35°, and deionized water or distilled water should be used. When the temperature is below zero, it is recommended to add antifreeze to prevent the liquid from freezing and cracking the pipe.

Keep the flow of water flowing at all times. The cooling water is responsible for taking away the heat generated by the laser tube. The higher the water temperature, the lower the optical output power.

The best water temperature is 15-20°C; when the water is cut off, the heat in the laser cavity will cause the end of the tube to burst and even damage the laser power supply. . Therefore, it is very necessary to check whether the cooling water is unblocked at any time. When the water pipe is hard bent (dead bend) or falls off, so that the water pump fails, it must be repaired in time to avoid power drop or even equipment damage.

## **Dust removal system maintenance**

If the fan is used for a long time, a lot of dust will accumulate inside, which will affect the exhaust and deodorization effect, and will also generate noise. When you find that the suction of the fan is insufficient and the smoke exhaust is not smooth, first turn off the power, remove the air inlet and outlet pipes on the fan, remove the dust inside, then turn the fan upside down, and move the blades inside until it is clean. Then install the fan. Fan maintenance cycle: about one month.

After the machine has been working for a period of time, the surface of the lens will be covered with a layer of dust due to the working environment, thereby reducing the reflectivity of the reflective lens and the light transmittance of the lens, and ultimately affecting the working power of the laser. At this time, use absorbent cotton dipped in ethanol to carefully wipe along the center of the lens

and rotate it to the edge. The lens should be wiped gently, and the surface coating should not be damaged; the wiping process should be handled gently to prevent falling; when installing the focusing lens, be sure to keep the concave side down. In addition, the use of ultra-high-speed perforation should be minimized at ordinary times, and the use of conventional perforation can prolong the service life of the focusing lens.

## **Transmission system maintenance**

During the long-term cutting process of the equipment, smoke and dust will be generated. The fine smoke and dust will enter the equipment through the dust cover, and thus adhere to the guide rail rack. Long-term accumulation will increase the wear and tear of the guide rail rack. The rack guide rail is a relatively precise accessory. A large amount of dust deposits on the surface of the guide rail and linear shaft for a long time, which has a great impact on the processing accuracy of the equipment, and will form corrosion spots on the surface of the linear shaft of the guide rail, shortening the service life of the equipment. Therefore, in order to ensure the normal and stable operation of the equipment and ensure the processing quality of the products, it is necessary to do a good job in the daily maintenance of the guide rails and linear axes, and to do dust removal and cleaning regularly. After cleaning the dust, put butter on the rack, and lubricate the guide rail with lubricating oil. Each bearing should also be oiled regularly, so as to maintain flexible driving, precise processing and prolong the service life of the machine tool. The equipment should be kept away from electrical equipment sensitive to electromagnetic interference to prevent the equipment from being subjected to electromagnetic interference for a long time. Stay away from sudden large power interference from large power and strong vibration equipment. Large power interference sometimes causes machine failure. Although it is rare, it should be avoided as much as possible. Therefore, such as large welding machines, giant electric mixers and large power transmission and transformation equipment, etc., should be kept away. It goes without saying that strong vibration equipment, such as forging presses, vibration caused by short-distance motor vehicles, etc., the obvious vibration of the ground is very unfavorable for accurate engraving.