

# Laser Machine Maintenance

Laser cutting machine is with high precision, there need pay more attention during operating, and dairy maintenance could make sure equipment use long time, saving cost, create more benefits.

## I: Working Environment

**1.1 Environment temperature: 0-35 °C;**

**1.2 Working Voltage: 220V±10.**

If the voltage is unstable, the electronic accessories will be damage with high rate.

**1.3 Environment humidity: 5-80% (No condensate)**

The machine need run in dry conditions. If the wet environment, the machine is easy to rust, the electronic accessories will be damage with high rate.

**1.4 Keep the room clean, capacious and ventilated.**

## II: Maintenance

### 2.1 Keep working table, guild rail clean

After the end of working day, use dry cotton cloth clean the cutting waste on working table, guide rail & chain first, then use rust proof oil spray on the guide rail & linear axis for maintenance, keep them clean and dry.

(Note: rust oil corrosion on the belt, can not be sprayed on the belt).

### 2.2 Keep Focus Len & Reflector Mirror clean

Turn off laser machine, clean focus lens & reflect mirror at the end of each working day. No. 1 and No. 2 reflector mirror do not need to be removed when cleaning, simply dipped in anhydrous ethanol cotton or cotton balls, carefully along the center of the lens to the edge of the rotary wipe. No. 3 reflector mirror and focusing lens need to be removed from the frame, wipe with the same method, after wiping, the original can be loaded back.

Note: ① the lens should be gently wiped, can not damage the surface coating; ② wipe the process should be gently, to prevent falling; ③ focus lens installation, please be sure to keep the concave down. Not allowed to rub back and forth, not to be scratched by the material, because the lens surface coated with anti-reflective film, film damage will greatly affect the laser energy output.

The lens is easily stained with dust or other contaminants, resulting in loss of laser or lens damage.

Focusing lens and mirror inspection, the lens surface color rust, stripping, cracking are belong to the object to be replaced. In particular, many customers with air pumps and air compressors, so that in the focus of the lens caused by water, it is necessary to regularly ensure that the optical system in the lens cleaning and quality.

**2.3 Timely clean up the debris on exhaust outlet filter to ensure smooth ventilation duct.**

### 2.4 Replacement of purified water in chiller each week

Note: The machine must ensure that the laser tube filled with circulating water.

It is recommended to use pure water for chiller (circulating water quality, a direct impact on the life of the laser tube), every 5 to 7 days after the replacement of pure water.

## **2.5 Clean Exhaust fan (it is recommended to check and clean every 2 weeks)**

After working for long time, a lot of solid dust will be inside exhaust fan, so that the fan produces a lot of noise, is not conducive to the exhaust gas and absorb odors. When the exhaust fan suction is not enough smoke exhaust, first turn off the power, the fan into the air duct and the outlet to remove the dust inside, and then inverted fan, and pull the inside of the leaves until clean , Then install the fan.

## **2.6 Laser Light path checking**

Recommended to check the light path before machine start working every day. Laser beam system is completed by the reflection of the mirror and the focus of the focus lens. There is no offset problem for focus lens in the optical path, but the three mirrors are fixed by the mechanical part and the possibility of offset Larger, although usually does not happen offset, but it is recommended that the user before each work need check whether the normal light path.

## **2.7 Laser tube working power should be less than 85% of total power**

Laser tube can not be long-term work in full power, otherwise the laser tube premature aging and rupture. Laser tube working power should be adjusted to less than 85% of the total power, and then adjust the work according to the material speed, this is the best working condition of the laser tube.

## **2.8 Fastening Screw and Coupling**

After a period of time, the movement of the joints of the screws, coupling will be loose, it will affect the smooth movement of machine. In the machine running, to observe the transmission parts any noise appear or abnormal phenomenon, found that the problem should be timely and maintenance. The first time of fasting should be around a month after the machine running.