

# SOURCE AND SOLUTION OF LASER CUTTING MACHINE FAULTS

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Laser cutting machines often malfunction during use, and without professional guidance, it is difficult to accurately determine the source of laser cutting equipment faults. We can only explore based on our own experience. However, if some faults occur for the first time, we will be at a loss, and even consulting the manufacturer's after-sales service cannot clearly describe them. Next, we will organize the laser cutting faults and corresponding fault sources or solutions for everyone.

### 1. Is the cutting effect poor or not worn?

Low power setting, small twist, light deviation, dirty lenses, inverted focusing lenses, focal length, laser cutting machine workbench not swapped.

Determine power attenuation, high water temperature, unstable voltage, etc. based on actual conditions.

### 2. The device cannot be connected

Whether the driver is installed, whether the USB cable or network cable is plugged in properly, whether the USB cable or network cable is damaged, the adapter board is damaged, the board card, etc

### 3. Turn on the machine and move it back to the original position in the opposite direction

The cutting pattern of the origin switch is not good

Loose screws, broken motor, broken motor, driver, voltage, etc

### 5. If the device cannot be started and the indoor air switch is activated, please check whether the main contactor has bounced, whether the external circuit is connected, whether the internal air switch of the device is closed, and whether a sound is heard during startup.

Control transformers, etc; Water protection leakage leads to a short circuit in the laser power supply due to water ingress (such as the water protection position installed on the side, only the laser power supply below), pump short circuit, indoor air usage too small, etc

6. What is the size of the graphic?

Is the output graphics size the same, changes in Z-axis height position, and file correction

7. Are the colors in the middle and around the image different?

Adjusting the marking coefficient of the W-axis focus

During this process, there will be damages and phenomena

8. Mark graphic position offset

Vibration lens X-axis or Y-axis position offset, locate the center point XY axis position based on the actual offset direction

9. Start the vibration lens XY and randomly place the dynamic motor?

Replace  $\pm 12 \pm$  switch power supply

10. No light output and return water

Is it normal, the position of the W-axis changes, the laser power supply is normal, the laser tube, etc

11. No display on the startup display panel

5V//

Switching Mode Power Supply

Is it normal, display panel, etc

12. Failure to return to home display panel during startup

Replace offline card

### 13. Z-axis not feeding or weak movement

Z-axis motor, driver, bearing, foreign object jamming, etc

### 14. Does the glass tube not emit light?

The output control of glass tubes mainly includes laser tubes, laser power supplies, and water circulation systems

Light output signals, including PWM emission signals provided by the board, water protection signals, door switch signals, etc. Therefore, the laser tube mainly starts from the water circulation system and optical signal of the laser power supply of the laser tube. Generally speaking, first observe whether the laser power supply is powered on normally, whether the inner and outer tubes of the laser tube are abnormal, and whether the water circulation system is normal. If there are any abnormalities, corresponding replacement or adjustment should be made. Under the normal circumstances mentioned above, the issue of optical signals should be considered. Generally, the first method to test the laser tube and laser power supply is to use a short message number (short laser power supply current of 5v and AIN short circuit water protection P and GND using an unlocked switch to control L and GND). If this method can emit light normally, then the laser power supply of the laser tube is not faulty, and signal problems such as water protection switch, relay, door switch, and board PWM can be eliminated in sequence. If the problem with the laser tube or laser power supply is that the method does not emit light, it can be solved by replacing it.