COMMON FAULT SOLUTIONS FOR LASER CUTTING MACHINES

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Category: Laser Cutter News

During the use of the laser cutting machine, due to the long continuous use time, the dusty working environment and the low quality of the operators, problems often occur. How to deal with some common problems?

1. Normal startup without program operation:

Symptoms:

The main power switch indicator light is off, the motherboard indicator light is off, the panel has no display, the motor drive indicator light is off, and there is a buzzing sound inside the machine.

cause of issue:

Solution | Poor contact of the main power supply, damage to the DC power supply, failure of the control board, failure of the motor driver, mechanical failure. The operator can solve it step by step.

Specific inspection method:

1. Observe the indicator light on the visual inspection machine, observe the fault location, the main power switch indicator light is not on, check whether the input power supply is in poor contact or the power fuse is blown, and the main board LED light is on but not turned on. On or the control panel does not display, check whether the DC 5V, 3, 3V power output is normal, and the motor drive indicator is not on. ? Check whether the power output is normal. When checking whether the power supply is normal, any output lead of the power supply should be disconnected for testing to determine whether it is the power supply or the power supply element.
2. Check whether all displays are normal. If you can hear a noticeable humming noise, it must be a mechanical failure. Check whether the trolley and beam are smooth and free of obstacles. See if anything else is blocking it.
3. Check whether the motor shaft is separated and whether the synchronous wheel is loose.

4. Check whether the wires or plugs connected to the drive block (equipment) on the main board, power supply, and plugs are in good contact.

5. Check whether the wiring connector from the drive block (equipment) to the motor is disconnected. The 18-core wire from the main board to the small board is damaged. Are there any uninserted images.

6. Check whether the parameter settings are correct. The parameters on the left are the same, and those with differences should be corrected and written into the machine.

7. There is no display on the panel, and the button cannot be started:

Symptoms:

The most likely reason is that there is no display on the boot panel, the keys are out of sequence or there is no action.

cause of issue:

Indicates that the power supply of the control block is abnormal, the control wiring is in poor contact, and the panel is faulty.

Specific inspection method:

1. Restart the machine and check whether the crossbeam and trolley reset normally.

2. Press the power-on reset button, press the direction keys and function keys on the panel of the machine to see if it is normal, whether the buttons can be automatically reset, and whether there is any difference.

3. Check whether the socket and connector on the connection display control are loose and not in contact.

4. Replace the display control block, check whether there is a display, whether the indicator light on the control block is on, whether the power supply is normal, and whether the beam laser

5. Replace the data cable.

The main board measures whether P5 has power and whether the voltage is 5V. If it is not normal, check the output of the 5V power supply, if there is no output, replace the 5V power supply.

6. If there is a display, but the button does not work, replace the button membrane to see if it is normal.

7. If it still doesn't work, try another motherboard.

8. Continuous light emission, intermittent light emission, unstable or uncontrolled current: (leather laser cutting machine will also have this problem)

Symptoms:

The light output is abnormal. On the high-voltage side, the ammeter is connected in series. It can be seen that the ammeter displays abnormally, or there is current for a long time, or it is absent from time to time, and sometimes it is out of control.

cause of issue:

The main reason is wrong selection of laser model, failure of laser power supply, damage to main board, wiring board or failure of control line connection and cooling water circulation system.

Main inspection and exclusion methods:

1. In the parameter setting, check whether the laser type is correct. It is the main reason for continuous lighting failure.

2. Pull the control line of Jiurui to see if there is any loose control line. The connection is unreliable.

3. Remove the control wire (DB nine-core wire) on the power supply, use a fool switch to light up,

and analyze whether it is a power failure or a motherboard failure.

4. Continuous shooting is not normal, indicating that there is a problem with the power supply.

5. When the power supply is normal, connect the control line and use a multimeter to measure the switch control pin on the wiring board. When the light is off, the normal voltage is above 4 volts and below 3 volts, and the main board output is abnormal; , the voltage of this pin should be below 2 volts, and the output is abnormal if it is above 2 or 5 volts. 9. For the old model, unplug the data control line connecting the main board and the laser power supply, and restart the machine. If there is still laser output, it means that the laser power supply is faulty.

6. Adjust the potentiometer marked IP in the power supply to change whether the preset current is too high, or replace the laser power supply.

7. Unplug the laser power supply control line, no more light, which proves that the main board is faulty (the old machine is ignited by high voltage, and this fault is likely to occur).

8. The reset is abnormal, the starting trolley or the beam shakes, and the starting hits the wall.

Symptoms:

The starting reset direction is wrong, the trolley beam vibrates, the reset trolley or the beam hits the wall; when the motor is running, obvious noise can be heard. snort.

cause of issue:

For such faults, check whether the connecting lines are in good contact.

One is to start the machine and check which axis the jitter occurs on, the trolley is still the beam, disconnect the power supply of one axis, and test the motor and driver of the other axis (stuck mainly occurs after replacing the main board and motor driver, rewiring, and the parameter settings are incorrect. or wiring errors; the second is the loose connection of machinery, sensors, motor drivers and drivers.

Method of exclusion:

1. If you reset the abnormal board or driver after replacing the main power supply, first check whether the parameter settings are correct. By changing the parameters of the motherboard, the problem of abnormal reset can be solved.

2. Turn off the machine, push the trolley and the beam to see if there is any resistance by hand, if the obstacle is removed or cleared, check whether the left tensioning wheel is tight.

3. Check whether the timing belt, bald head, blowpipe, and drag chain are stuck. Check whether the beam is seriously offset, and the left and right sides should not be greater than 2MM. Check the support wheels on both sides for damage.

4. Check whether there is too much dust on the guide rails to block the trolley, clean up the dust and add lubricating oil to the slider.

5. Push the car to see if there is friction or shaking. If the gap between the sliders is too large, the sliders need to be replaced.

6. Check that the push is smooth.

7. Check whether the motor is connected to the driver (block) for faults. Interchangeable tests to determine if the problem is with the motor or the drive (block).

8. For models equipped with resistor bars, measure the resistance. If the resistance is incorrect, the resistor set needs to be replaced.

9. The direction is correct when resetting, but eventually the trolley or beam cannot stop and hits the machine. It is necessary to check whether the parameters of the motherboard are correct. The sensor wire is broken or the sensor is damaged, and whether the magnet is in a reasonable position.

When the YM model does not reset, pay attention to whether the 18-core data cable is in poor contact or open circuit, and re-plug or replace the data cable.

10. If the problem persists, the motherboard may be faulty.