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How to Assemble and Adjust Fiber Laser Welding Machine

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First, we will introduce the different parts of the laser device. The inputs of the lower part of the device are (Fig.1):

1. Power supply
2. Chiller power line (install by turning to the right)
3. Laser water output
4. Laser water inlet
5. Auxiliary gas (nitrogen)
6. Water inlet head
7. Water outlet head 8: Foot switch

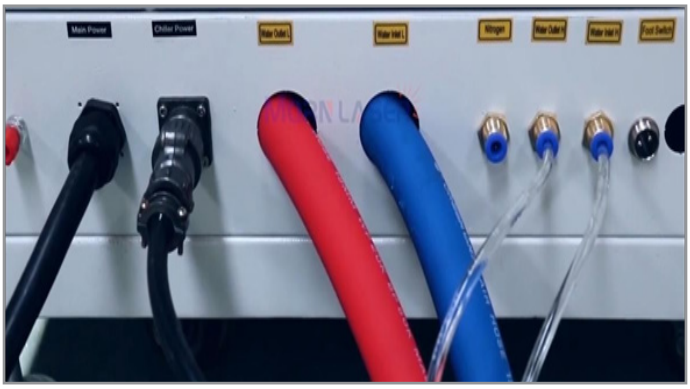

Fig 1: The lower part (the back side of the laser welding machine).

The laser welding machine has a chiller, and the upper part of the chiller has the following components (Figures 2 and 3):

1. Water inlet head
2. Water outlet head
3. Laser water outlet
4. Laser water inlet
5. Water filter (after adding water, see the water level indicator).

Fig 2: Inputs and outputs of the laser machine chiller.

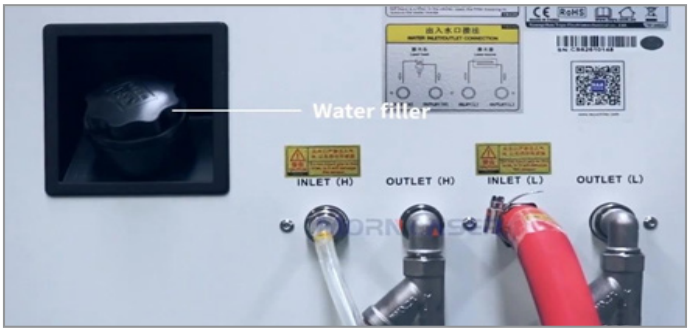

Fig 3: Water filter for chiller.

Open the water filter by turning it to the left and insert the water hose. The amount of water should be entered to fill about 1/3 to 3/2 of the green area (Fig.4).

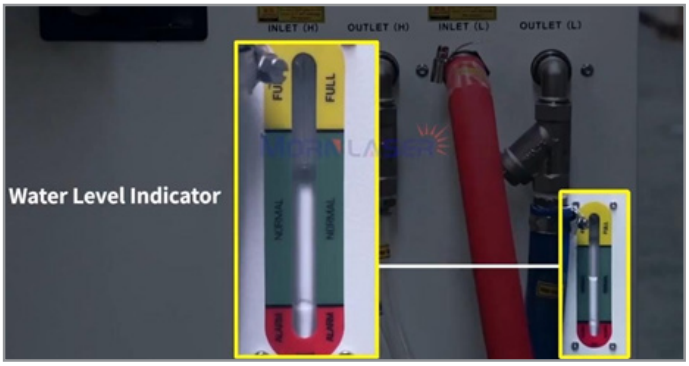

Fig 4: Standard water amount for chiller of laser machine.

The amount of water should be entered to fill about 1/3 to 3/2 of the green area. Then add auxiliary gas and connect its hose. Open the gas valve until its pressure reaches 0.2 Mpa (Fig.5).

Fig 5: The required gas of the laser welding machine and its pressure.

Connect the power supply wire to the laser device and connect the other end of the power supply wire to the switch (Fig.6).

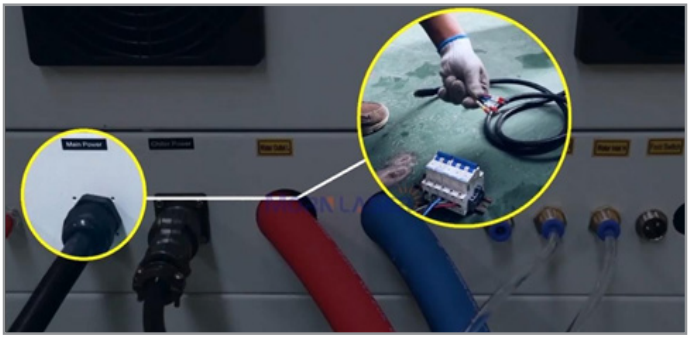

Fig 6: Power source of the laser device.

When placing the wires, make sure that each wire is in place (Fig.7).

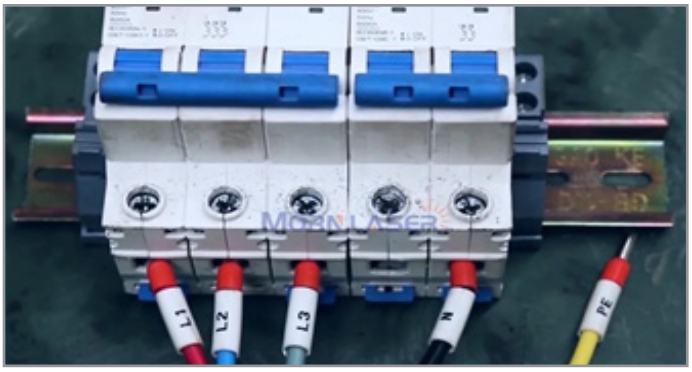

Fig 7: Accurate placement of power supply wires.

Open the wire feeder frame and open the fixed page and put the wire feeder in it and then close the screw (Fig.8).

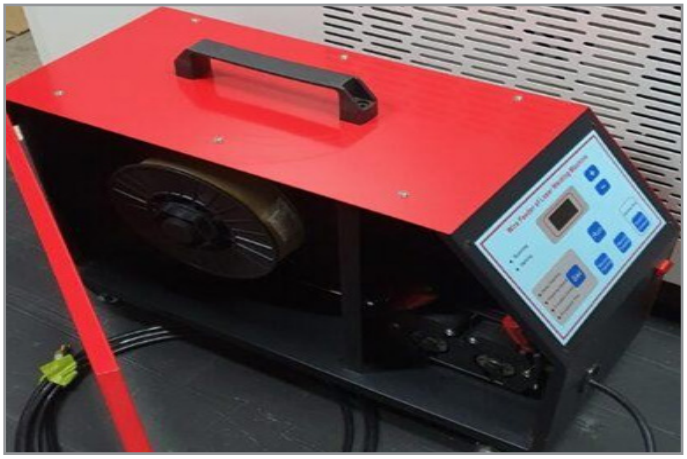

Fig 8: Laser welding wire feeder.

Find the beginning of the wire and cut the part that is not straight. The feeder wire should rotate counterclockwise and cross the guide line (Fig.9). Also, open the wire feeding wheel so that the wire passes more easily. Then close the feed wheel backwards.

Fig 9: Feeder wire rotation direction.

Now turn on the emergency button and turn the switch. Then turn on the chiller switch (Fig.10).

Fig 10: Laser welding machine chiller.

Wait until the temperature reaches 20-25 (Fig.11).

Fig 11: Laser machine chiller temperature.

Turn on the laser switch to turn on the laser pointer (Fig.12).

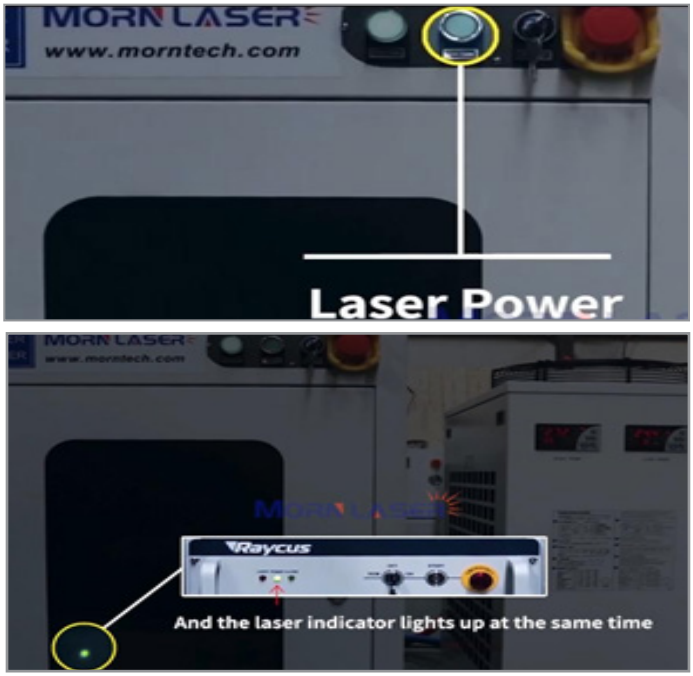

Fig 12: How to turn on the laser device.

How to set the main parameters of the laser device (Fig.13):

Fig 13: How to set the main parameters of the laser device.

Power: controls the actual power of laser welding, which can be adjusted according to the material and thickness of the weld. Working Mode: Shows different welding modes (Fig.14).

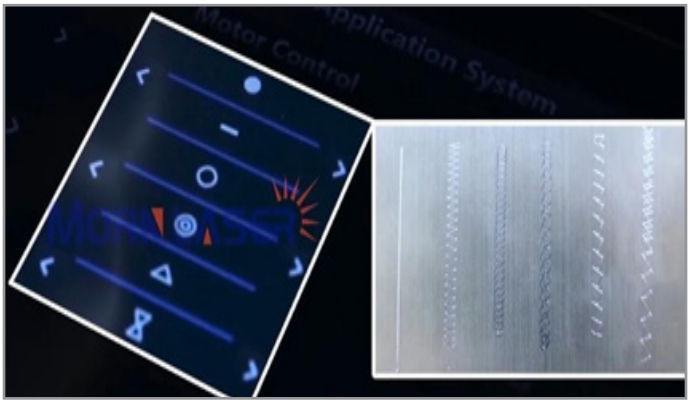

Fig 14: Different modes of welding.

Page 2 is for adjusting the red light offset (Fig.15).

Fig 15: Adjust red light offset.

X and Y axis should be kept at zero. Page 3 is for the smart laser application system (Fig.16).

Fig 16: It is a smart laser application system.

When moving the fiber (the hose connected to the torch), be careful not to bend it and do not place any object on it. When placing it on the device, it is better that the curvature of the fiber hose is 30-40 cm (Fig.17).

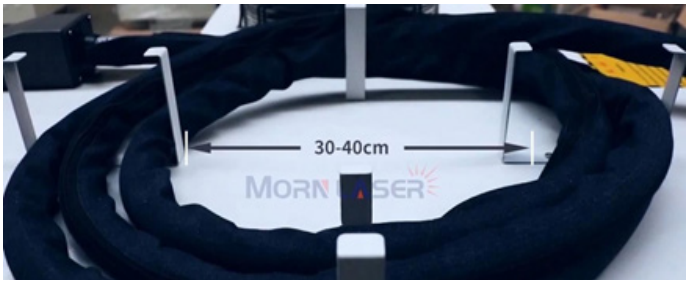

Fig 17: Torch hose.

Check the protective lens. Place a piece of white paper on the device and place the torch in front of it to check the red light. If there are black spots in the halo, the lens should be cleaned and if there is no black spot, then you can use it (Fig.18).

Fig 18: Check the protective lens.

Install the protective clamp to the workbench (Fig.19).

Fig 19: Protective clip.

To turn off the laser welding machine, turn off the power button (Fig.20).

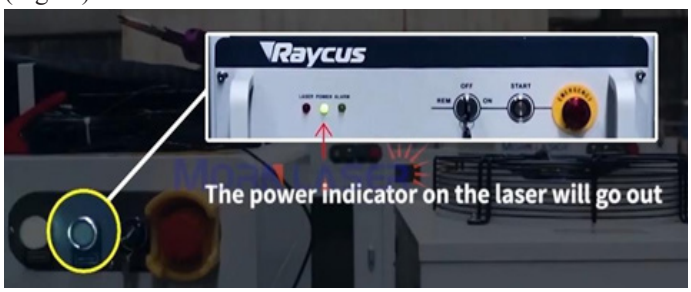

Fig 20: Power button.

Then turn the chiller switch to the left to turn off the chiller (Fig.21).

Fig 21: How to turn off the chiller.

Then turn the switch of the laser device to the left to turn off the laser device (Fig.22).

Fig 22: How to turn off the laser device.

Open the protective lens mounting port and remove the protective lens from the corner of the torch and clean it with alcohol and cotton (Fig.23).

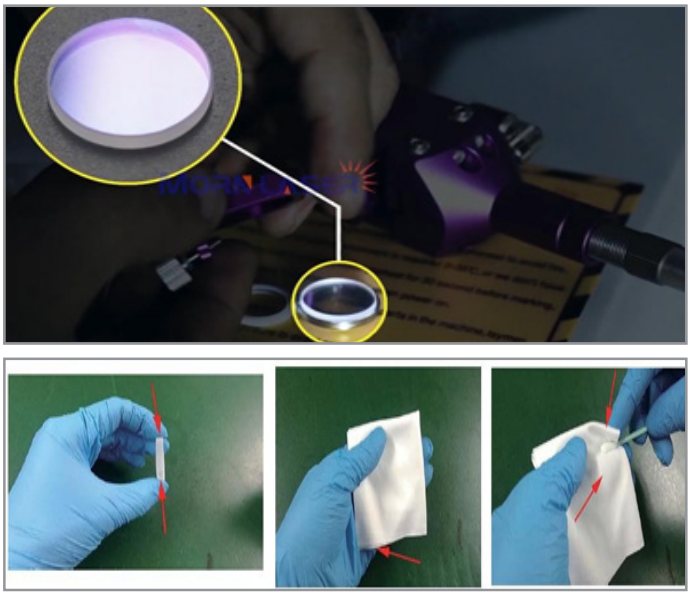

Fig 23: How to clean the protective lens.