

How to connect your Endurance laser to the Ortur Laser Master and Laser Master 2



If you just bought your first Laser from Endurance, welcome! This guide will show you how to connect your Endurance Laser to the Laser Master machines from Ortur.

Before we begin

What you need

- Ortur Laser Master
- Endurance Laser
- Bolts, Nuts, Washers, Spacers
- Some wire
- Heatshrink or electrical tape
- Opt. 3pin Connector
- Zip-Ties or Velcro straps

Tools required

- Screwdriver
- Drill and drillbits
- Optionally a soldering iron

Safety

Make sure to always wear appropriate safety equipment. Especially whenever the laser is turned on, it is paramount to wear protective glasses.



Compatibility

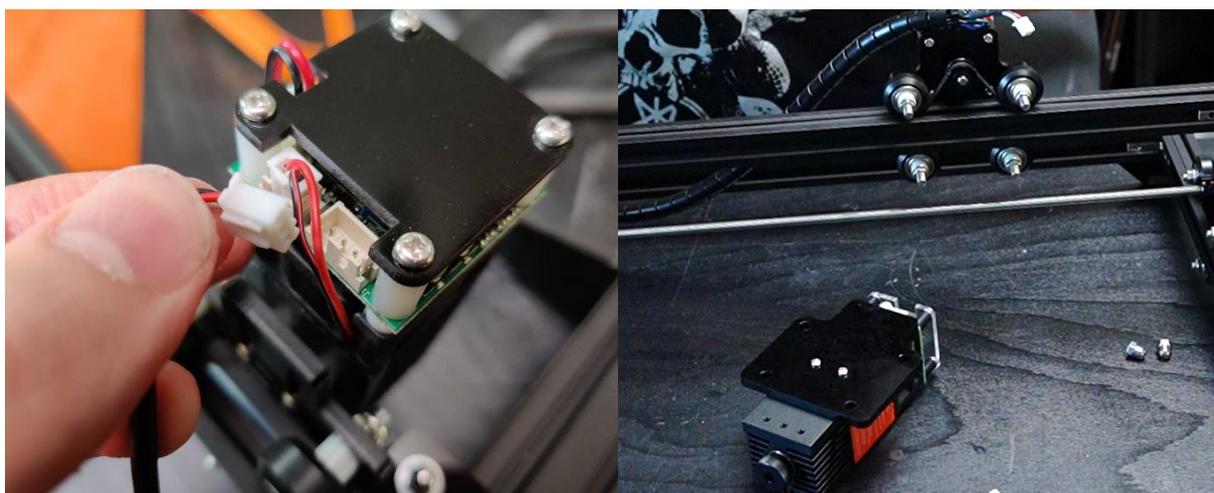
Generally, the Laser Master is compatible with all Endurance Lasers. However, if you have the original Laser Master, which is only supported on one side, some of the higher powered models will need extra bracing, as the higher weight would cause the machine to tip over.



Mounting the Laser

Step 1:

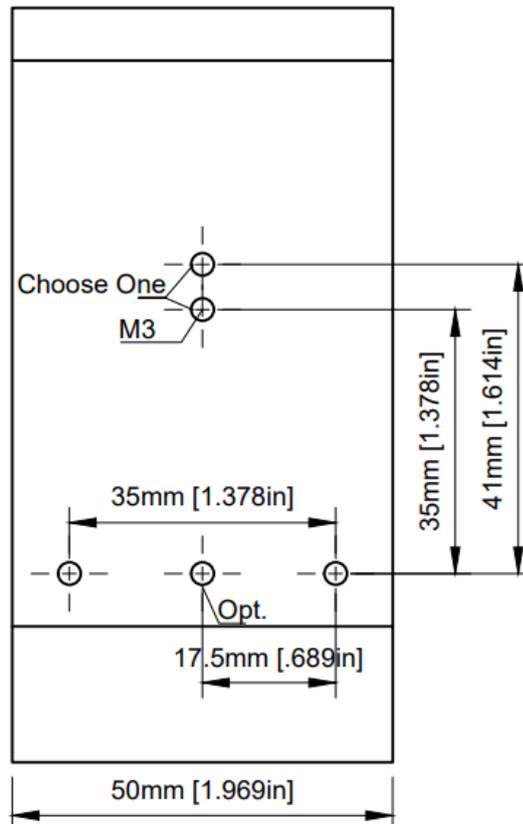
Unplug the cable harness of the default laser unit and remove it by unscrewing the 3 or 4 domed nuts and taking out the screws securing the laser from the back.



Step 2:

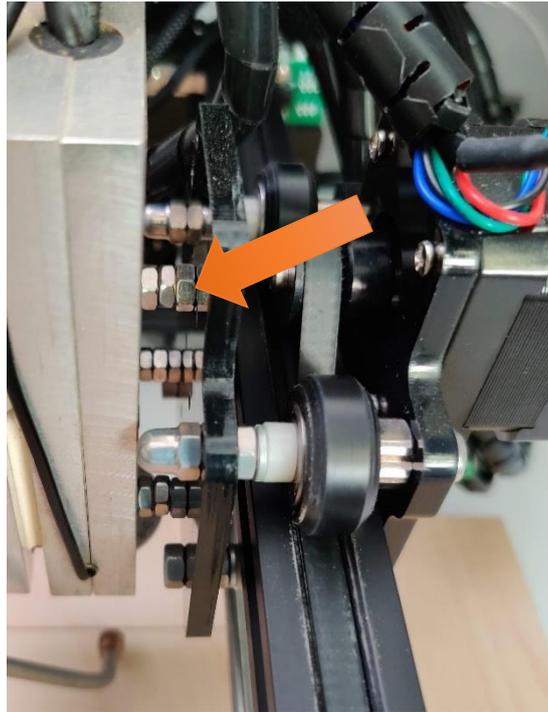
Mark the new mounting holes by measuring or using the stencil below (Make sure to print at 100% and check the dimensions after printing). You want your laser to sit roughly at the same height as the stock laser, however, the exact location doesn't matter too much. Just make sure that it is centered.

You can then use a 3mm or 1/8in drill bit to drill the new holes.



Step 3:

Mount the Endurance Laser to the acrylic. Most likely you will have to use some spacers so that you can still put the domed nuts back on, as the Endurance laser is a bit wider compared to the default unit. To reduce the height of the spacers needed, you can also use regular nuts instead of the original domed ones. As spacers can either use plastic/metal spacers, or some oversized nuts and washers will also work in a pinch.



Step 4:

You can now mount the acrylic plate back on the Laser Master using the domed nuts. You can then test if the laser can move everywhere without interference. Depending on which Endurance Laser model you are using, the decorative cover with the Ortur logo may prevent the laser from going to its home position. If this is the case, you can either remove this panel entirely or cut off the upper part, as it is purely cosmetic.

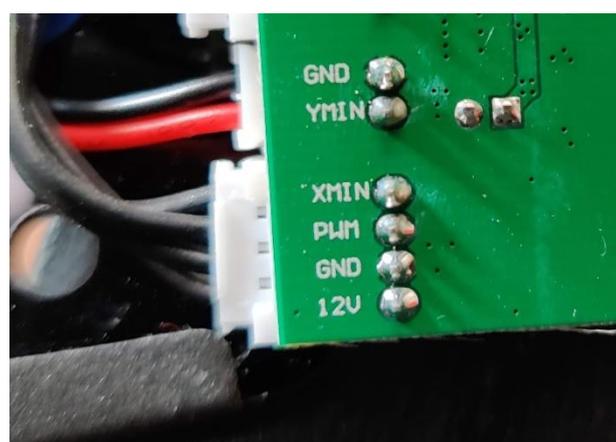


If you are using the Laser Master model that is only supported on one side, you can also test at this point if you need to add some extra bracing to the feet to prevent it from tipping. The easiest option would be to just screw some small wooden planks to the feet, enlarging them and preventing it from tipping.



Wiring up the Laser

Depending on your skill level of working with electronics, you can either extend the existing wiring or solder directly to the controller board.



Step 5:

As the Laser Master uses the same connector for the X limit switch and the PWM signal for the Laser, we can't plug the Endurance Laserbox directly into the Laser Master control board.

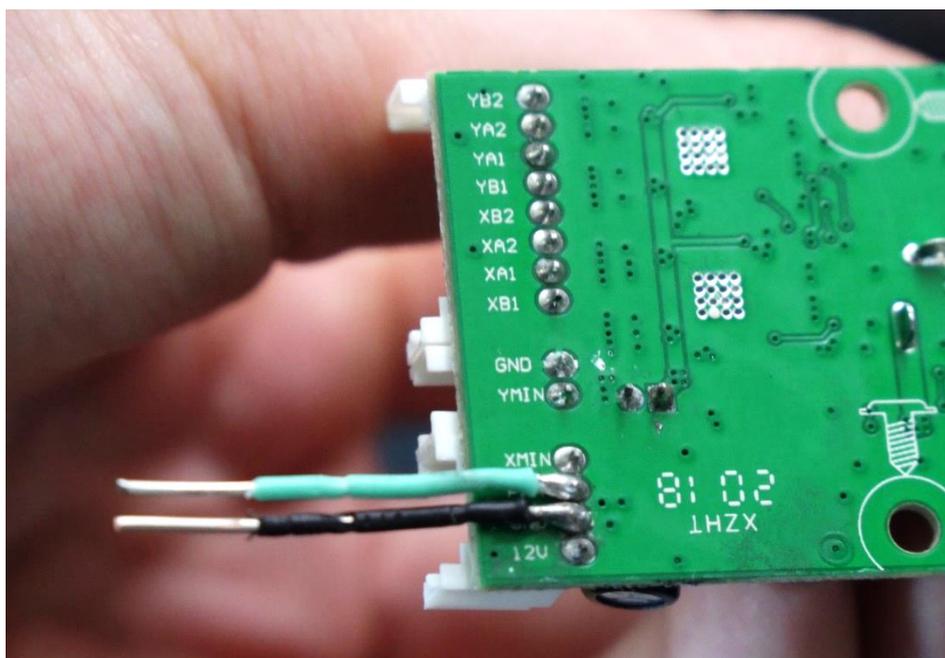
Option without soldering

What we can do, however, is to use some wires to extend the connector that was plugged into the default laser. This creates some extra wiring mess but is the least intrusive way to get the PWM signal to the Endurance Laser controller.



Option with soldering

Do this option at your own risk. The cleanest way to wire up the Laserbox is to solder some wires to the PWM and GND pins on the back of the Ortur controller board. The pins there should be labeled, so it is quite straightforward. You can then just leave the connector plugged in and the X-axis limit switch will continue to work as normal.

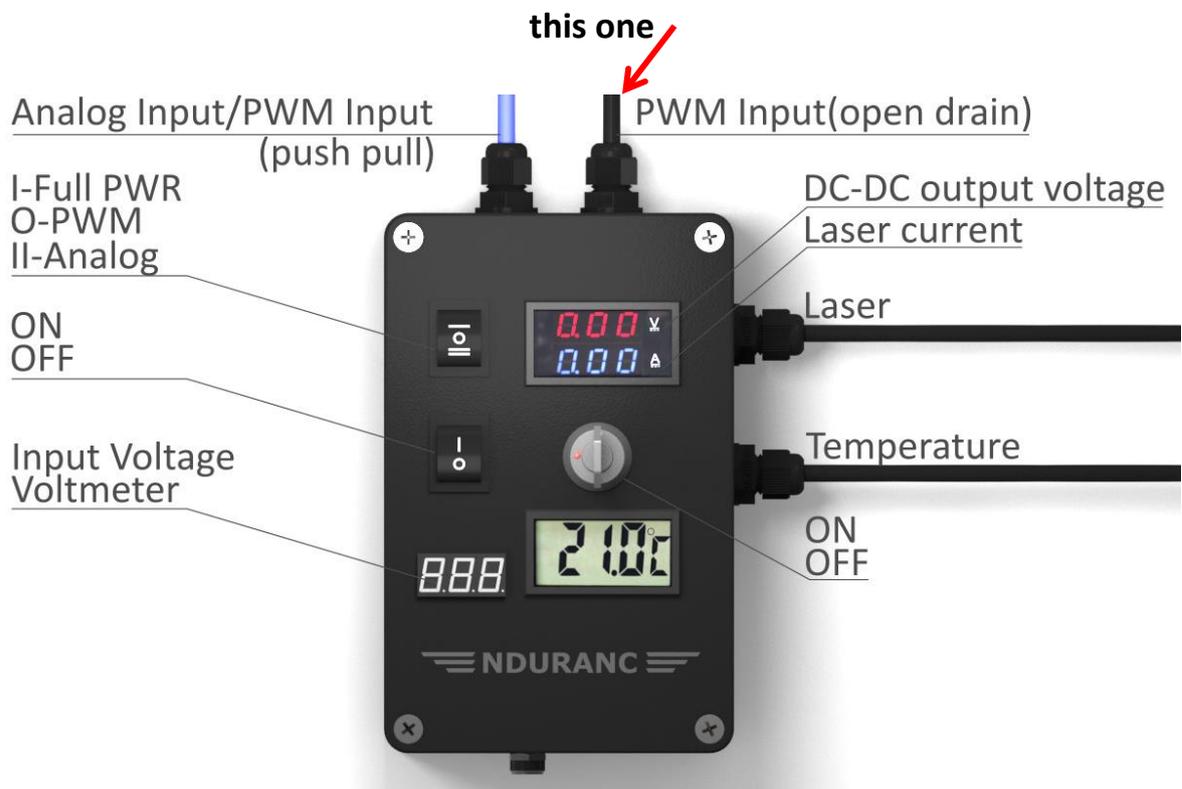


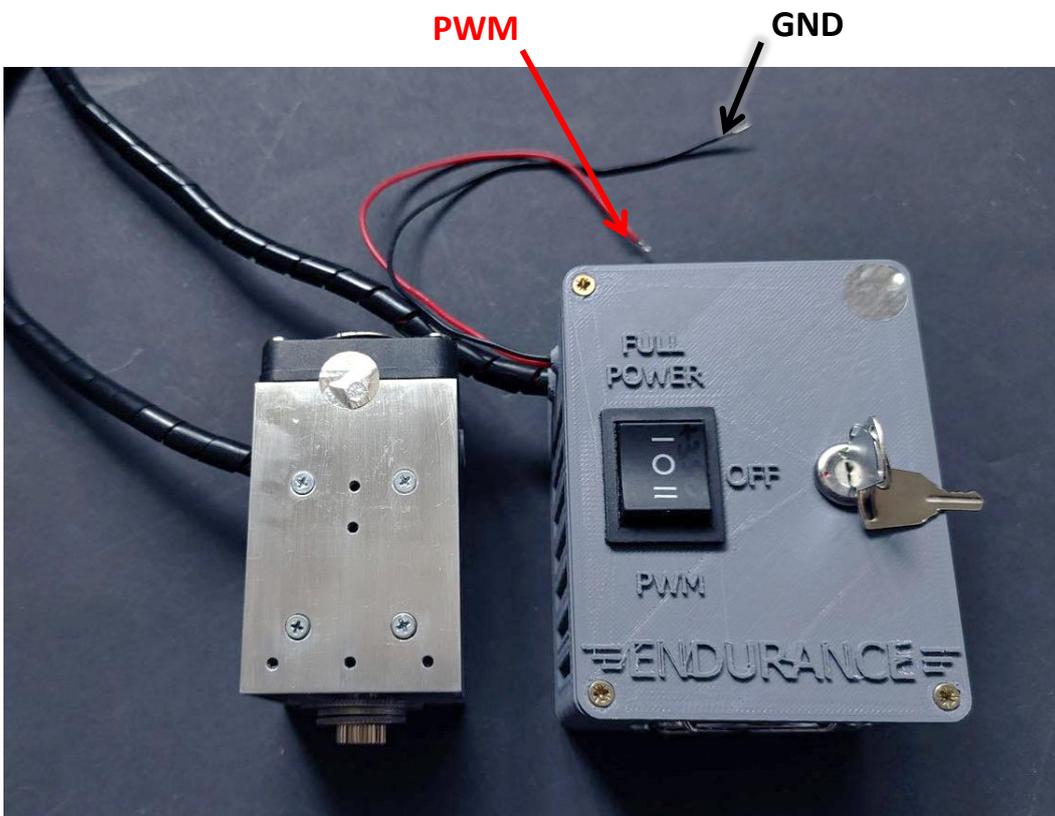
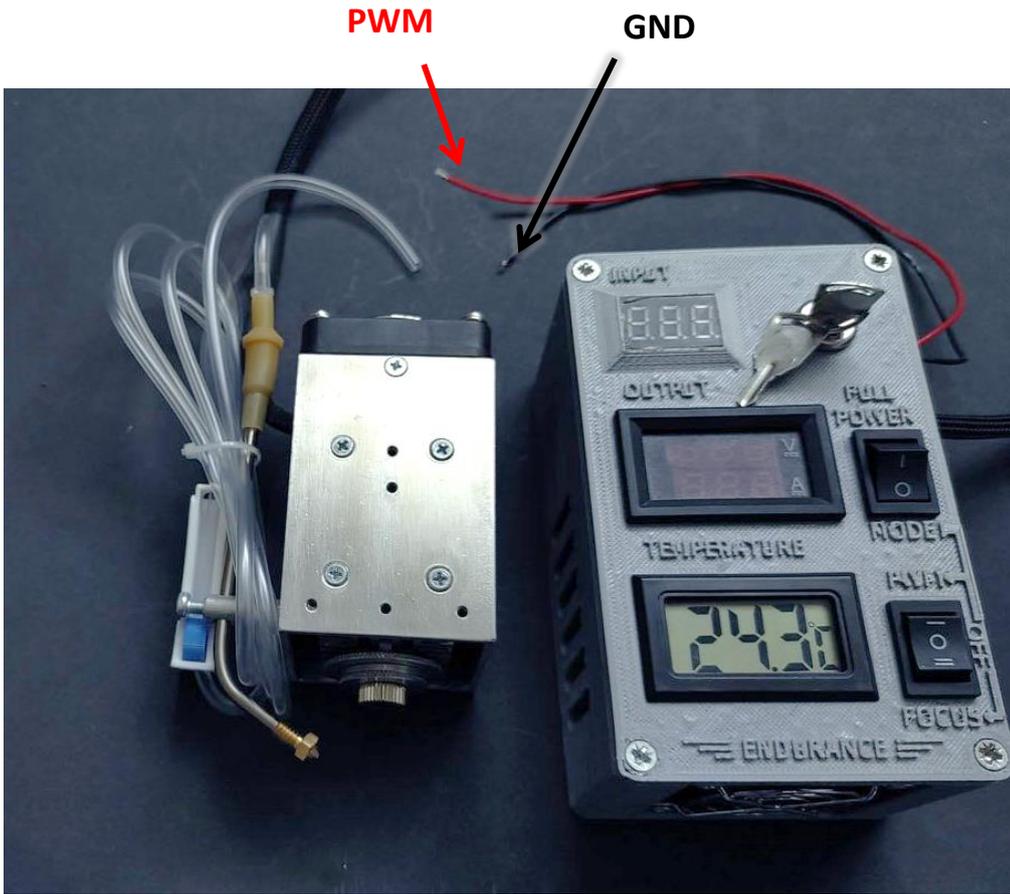
Connecting to the LaserBox

Depending on which Endurance Laser version you have, there are a few different controller box types. However, requiring a PWM signal to control the laser power. You want to connect ground (GND) and PWM of the Laser Master to the Endurance controller box.

You can either solder these connections or use screw/clamp connectors. Just make sure to use heat shrink or electrical tape on any exposed wires to prevent them from shorting.

If you have the Laser Box with two different PWM inputs, use the black one and twist the two wires of the blue one together.





Final words

You should now be able to control your Endurance Laser the same way you were able to control the default laser. If you have the problem where the laser is blinking when you try to turn it to maximum power, try setting the maximum S-value to 850 or 900 instead of 1000.

Questions

If you have any questions, feel free to contact us either with the live chat on our website or by joining our Facebook group.

Website: <https://endurancelasers.com>

Facebook: <https://www.facebook.com/groups/endurancelasers/>