Setting up the Ortur YRR - Y-Axis Rotary Roller

This tutorial will give you **ALL of the steps** needed to **setup**, **calibrate** and **test** your ***Ortur YRR*** using ***Lightburn Software***. As of the date of this document, 07/09/2021, there is no other resource on the Internet with a ***complete*** step-by-step guide.

This setup procedure was successfully tested on a 7W, 15W & 20W Ortur Laser.
All steps here are necessary.

Index:

Installation of the YRR Accessory

Raise the laser frame to accommodate the YRR accessory & workpiece. In this example, I raised the frame of the laser 140mm to accommodate the height of the YRR with four coffee boxes. You can use big Lego blocks, or if you have a 3D printer, download .stl files from Thingiverse.
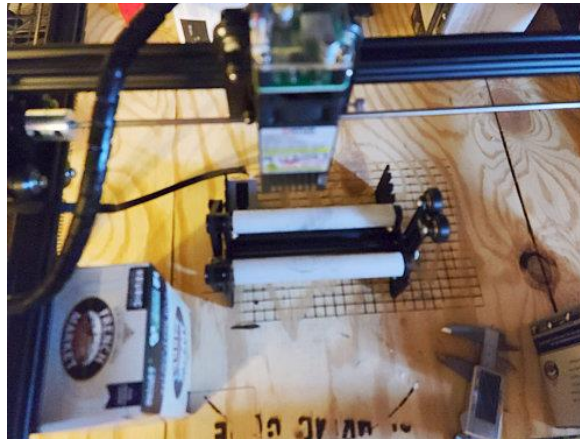
Center the YRR under the laser in the middle of your bed, with the stepper motor on the left side, aligning it parallel to the X-Axis as shown in the image above.
NOTE: Make sure the power to your laser is OFF. Do not unplug the laser, as you will lose the ground.

Plug the **FOUR** prong end of the extension cable *(included in the YRR package)* into the **stepper motor of the YRR roller accessory**, and then unplug the **Y-Axis** stepper motor cable from your Ortur Laser. Plug the **TWO** prong end of the extension cable into the **Y-Axis cable** coming from your control board that you just unplugged.
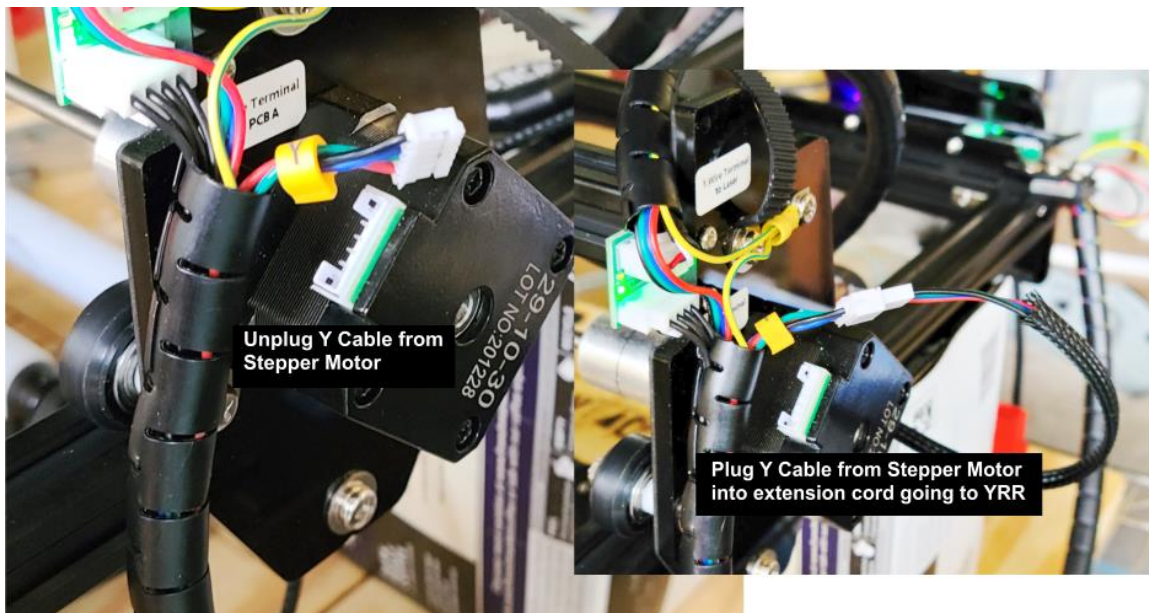
Setting up Lightburn Software
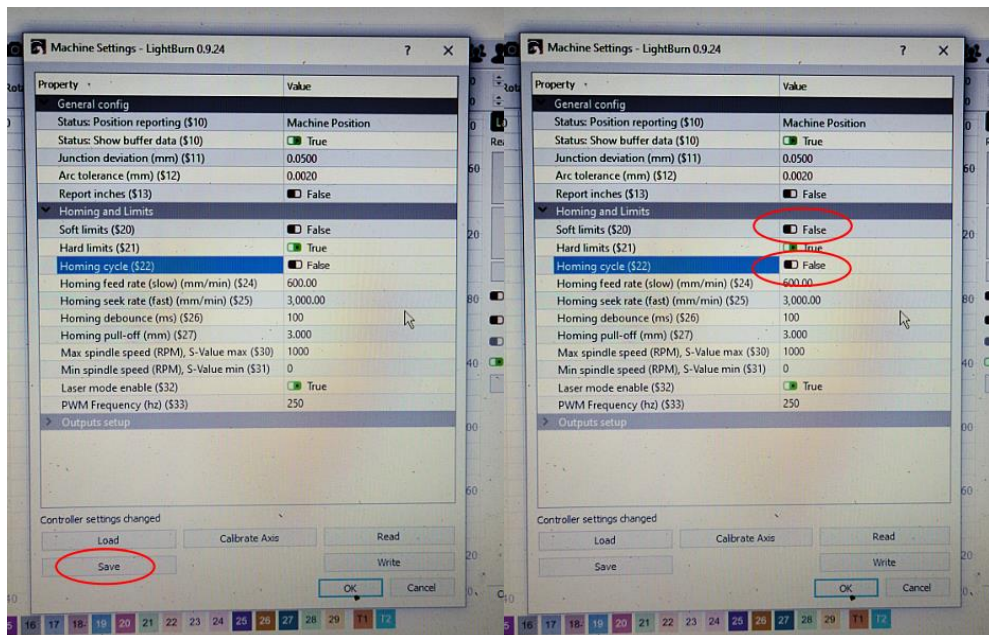
1) Click **Edit → Settings →** turn **on**: **Show Rotary**

Click **OK**

2) Click **Edit → Machine Settings** - *Must be underlined connected to laser and powered on* → **Click Save →** name the file **default-laser.lbset****
2a) Turn **off soft limits**
**2b)** Turn **off homing cycle**

2c) **Click Save again →** But this time, save as: **rotary-settings.lbset****

2d) Click the "**Write**" button *(just above the OK button)* to write the new settings to the laser control board and then Click **OK**

*You now have two saved profiles; **default settings** and **rotary settings**, and you can easily switch between them in the future. When you are done with the rotary tool, simply load the default settings to revert to the standard laser functions.*
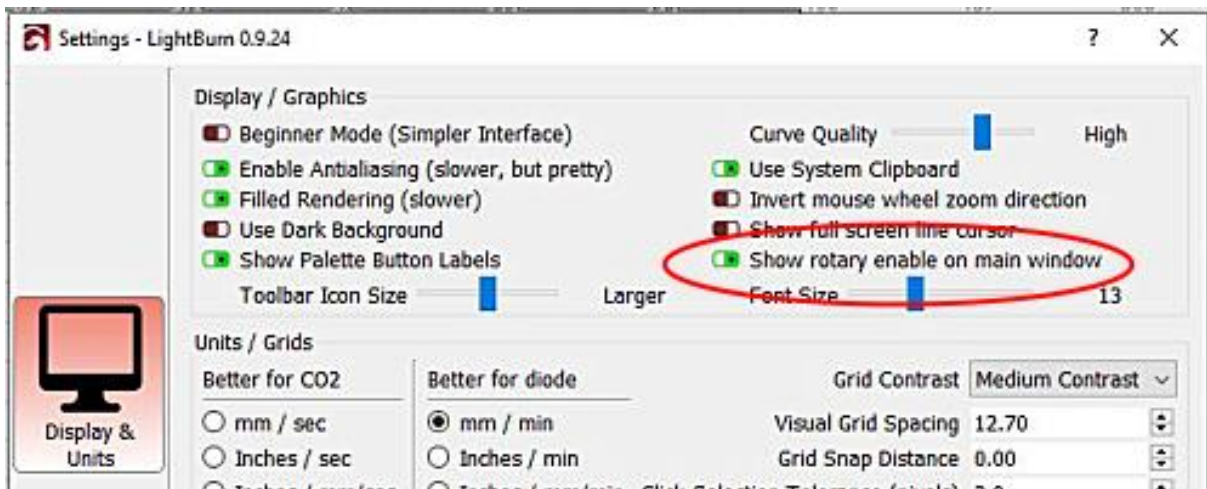
3) Click **Edit → Device Settings**
Turn **off Auto-home on startup** and click **OK**
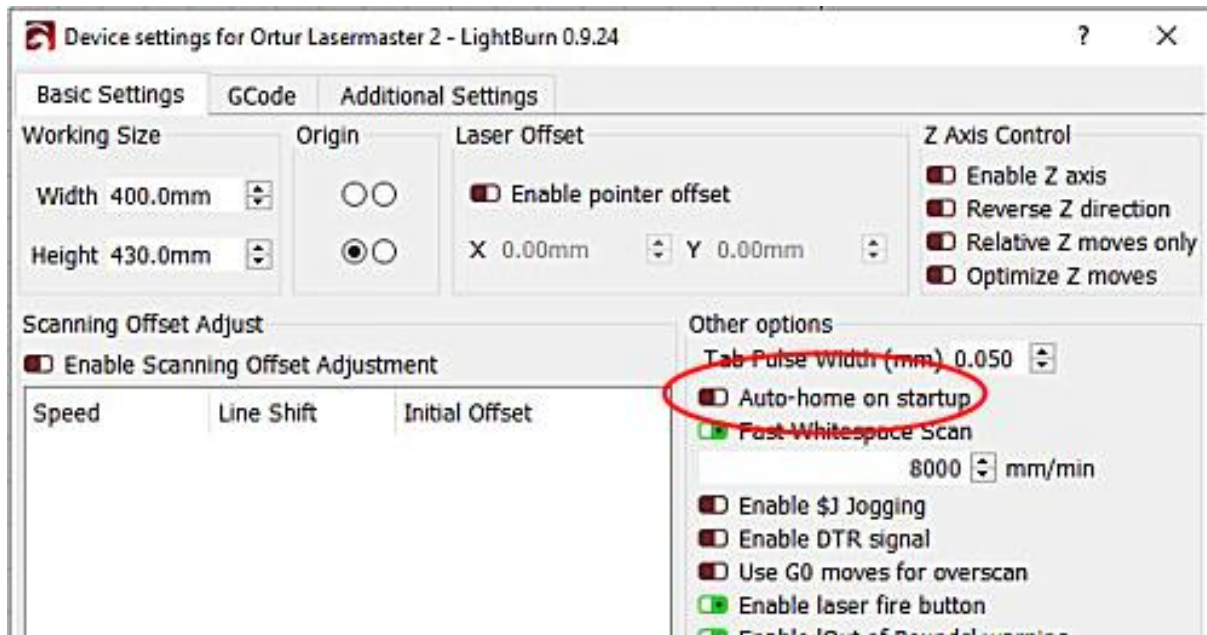
Click **OK**

4) Click **Edit → Settings**

Turn **on**: **Show rotary enable on main window**
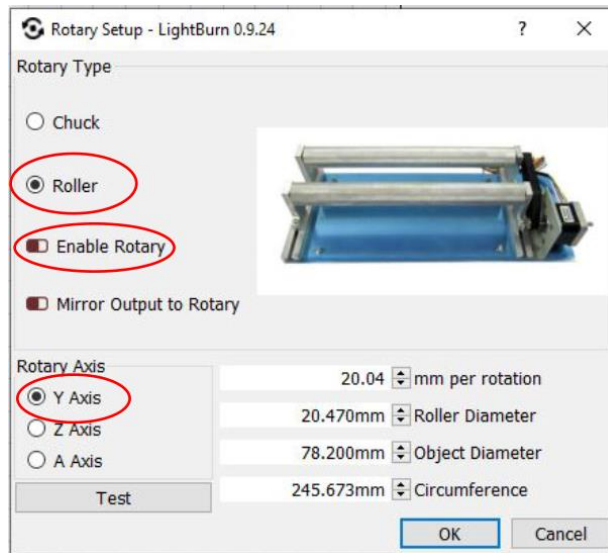

Click **OK**

5) Click **Tools → Rotary Setup**
Check the radio button: **Roller**
Turn **on: Enable Rotary**
Leave **off: Mirror Output to Rotary**
Check the radio button: **Y Axis**

Measure one of the roller's **diameter**: Type the measurement you got in the "**Roller Diameter**" text box. *(The Roller diameter on my YRR is 22.020mm (measured with digital caliper - It seems Ortur uses different suppliers for the rollers, so your measurement may/will be different!))*

6) Measure the *diameter* of the **object** you are going to engrave and type it into the: "**Object Diameter**" text box.

The Circumference is *automatically calculated*
Click: **Test** to see if the YRR accepted the settings, it should rotate 360° and return.
NOTE the Circumference of the object! You will need that number to create a template.

Click **OK**

7) In Lightburn, draw a **rectangle** and **unlock** it

7a) Set the **HEIGHT** to the **Circumference** of the item you just set up. *This is a template that goes all the way around the item you are about to engrave, like a label on a bottle.*

7b) Set the *WIDTH* to the size of the area you want to engrave.

example: If you have a tumbler that is 180mm tall, but you just want to engrave the top 70mm, you will set the **WIDTH** to 70mm. *(The inside of the rectangle is now the design area or new work plane.)*

7c) Click the **rectangle** to *Select* it. Then click "**T1**", the orange square on the color palette on the bottom of the screen, to set the rectangle to a "**tool path**." *(This will keep the laser from outputting the rectangle to the workpiece)*

Creating an Accuracy Test – Dialing in

7d) With the rectangle **selected**, press *CTRL+D* to duplicate it. Set the **WIDTH** to **4mm** and leave the *HEIGHT* the same. Now you have narrower rectangle inside your tool path. With the new, smaller rectangle selected, click on the *00* square on the "**color palette**".

7e) On the "**Cuts / Layers**" tab, choose *LINE* for the *MODE* and set the *SPEED* to **800**mm/min and the *POWER* to **50**%.

7f) Click the *LASER* tab, **enable rotary** and set the **Start From:** to *Absolute Coords*
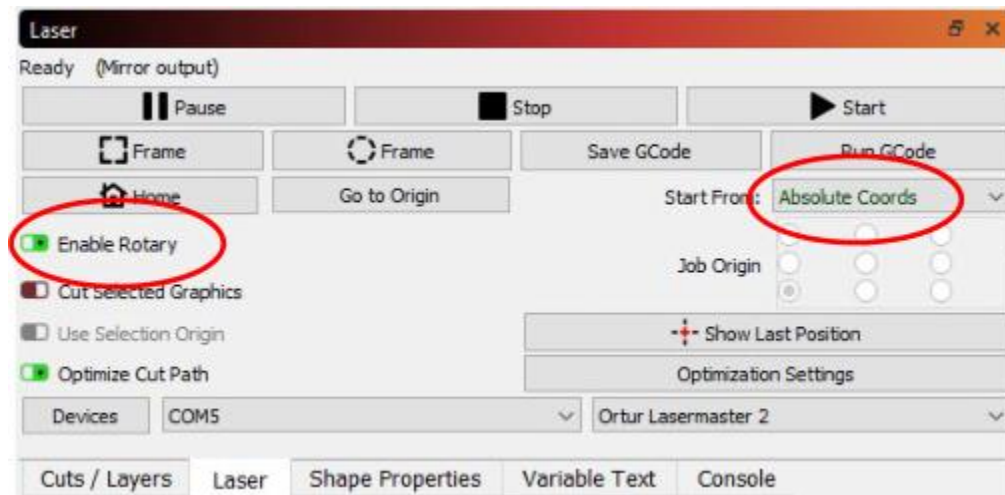
8) Press **CTRL+A** to select both rectangles

8a) Set the **Xpos** & **Ypos** to **ONE HALF** your laser's working area.
example: If you have the Ortur LM2, the work area is 400x430mm. You would set the X&Ypos to 200 & 215mm respectively. This will set the position of your newly created template to the absolute center of your work plane, allowing you to place the YRR Roller in the middle of your work bed.
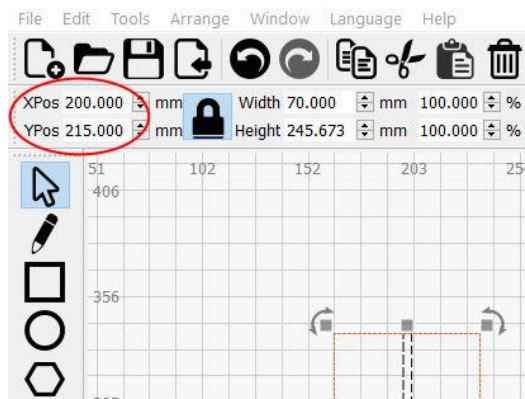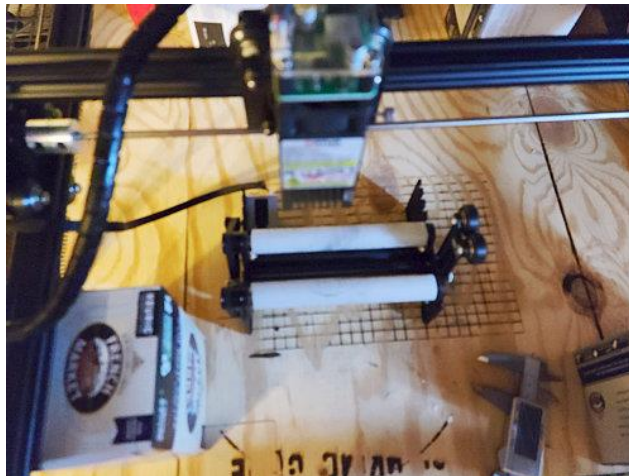
9) Prepare the item you wish to engrave by wrapping it with painter's tape.

Preparing the YRR Accessory for first use

We have already raised the laser frame to accommodate the workpiece. Again, In this example, I raised the frame of the laser 140mm to accommodate the 4" diameter tumbler with four coffee boxes.


Center the YRR under the laser in the middle of your bed, with the stepper motor on the left side, aligning it **parallel to the X-Axis** as shown in the image above.

Next, set your work piece on the YRR Roller and **adjust the focus** of the laser, making sure the work piece is centered under the laser.

Click **Frame** on the Laser tab. The piece should rotate 360° and return.

Click **Start** and the narrow rectangle we created in Lightburn should burn onto the tape.
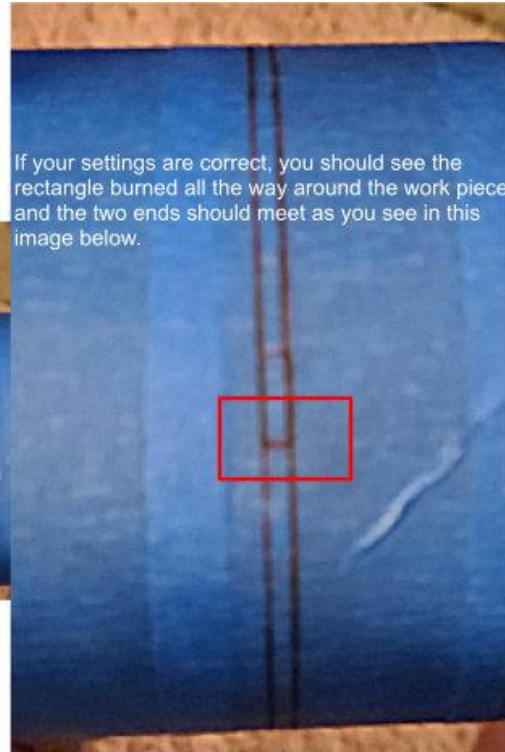
If the rectangle ends do not meet perfectly, measure the distance between the two ends. If the ends are **SHORT**, you need to **add** the distance they are short to the **MM PER ROTATION** in Rotary setup. If the rectangle overlaps, you need to measure the overlap distance and **deduct** the measurement from the **MM PER ROTATION** in Rotary setup.

Click Tools → Rotary Setup
NOTE: You will ONLY have to set and calibrate the MM PER ROTATION in Rotary setup during the initial setup of the machine. You will never need to change this setting again. Future projects will simply be changing the diameter of the workpiece.
NOTE: If nothing happens when you change the mm per rotation, see the note on the last page.

Once you have a rectangle where the ends meet perfectly, you are done with the setup! Congratulations!

The Final Steps:

Click the **narrow rectangle** you just burned in Lightburn to select it, and then delete it. Now you have just the tool path rectangle on the screen. Click **File → Save as** and name the file something like, **rotary-template.lbrn** and save it to your computer. Now when you use the rotary, you simply open the template and change the width and height for the new project. Any graphics or text you use must be sized to fit within the rectangle & rotated -90°, *(See image below.)*
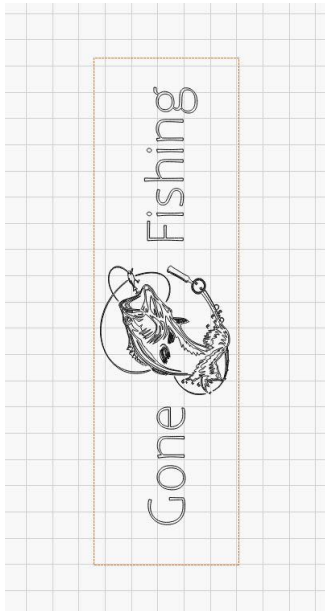
This is a completed vector file ready to send to the laser on the right.

The final step is to start the burn!

Congratulations! You have successfully setup and configured your Ortur Y-Axis Rotary device!

A complete video guide is available on YouTube from me, Rich F, The Louisiana Hobby Guy. Click the link and look for the video titled **"Setting up the Ortur YRR - Y-Axis Rotary Roller"**

Appreciation

If you appreciate my tutorials, videos and template downloads and want to buy me a cup of coffee or a beer to help support the effort, I would greatly appreciate it!

PayPal link

Troubleshooting

There have been several reported cases of **"nothing happening"** when you change the **MM PER ROTATION** in Rotary setup. If this happens to you, click **Tools → Rotary Setup**, and turn **OFF** the box that says, "**Enable Rotary**", and then set the mm per rotation to 20.00. **Only turn this off if your test burn height does not change when you change MM PER ROTATION.**

If the Enable Rotary button is **OFF**, Lightburn controls the circumference as a Y-Axis measurement. Remember, circumference is the height of the rectangle you draw in Lightburn.