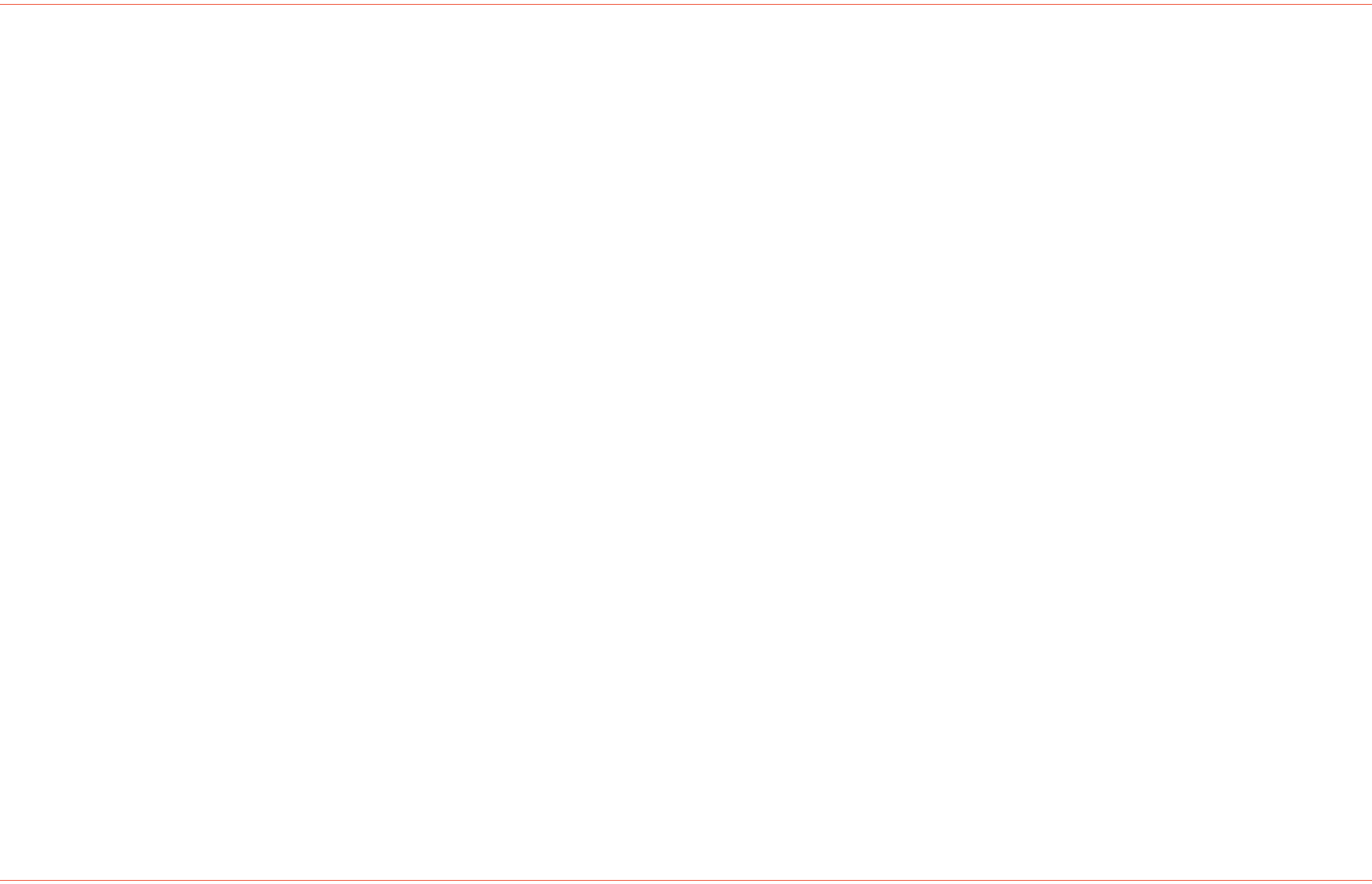




USER MANUAL

Chuck Rotary





Package Contents

The contents of this box are laid out below. If you purchased the chuck rotary with the LaserMATIC Mk2 laser engraver as a package, the machine was shipped in a separate box.



Chuck Rotary



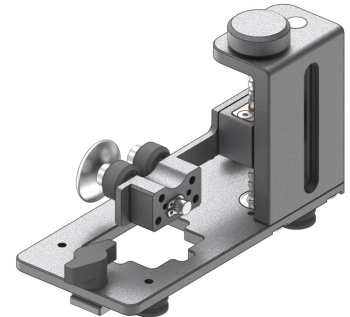
Chuck jaw Type A (x3)



Chuck jaw Type B (x3)



Ring post (x3)



End support (with cup attachment for spheres)

Other accessories

- Chuck key
- Stepper motor cable (connects to control board)
- Screws and Allen key
- Bubble level
- Flexible tape measure

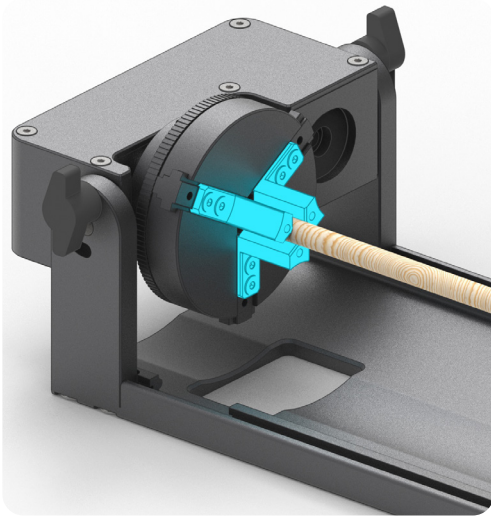


If you've received any damaged components, please send us an email at support@rolyautomation.com and we will send any needed replacements as quickly as possible.

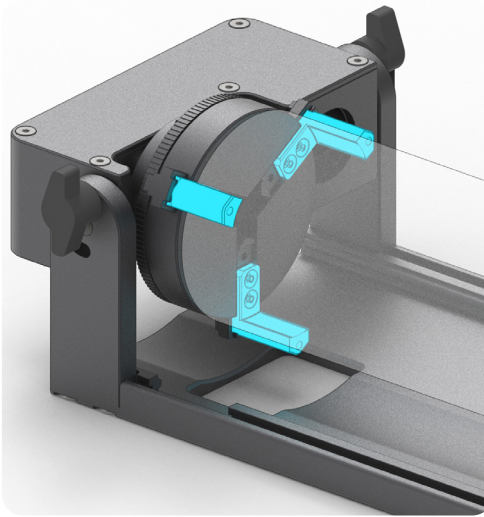
Using the Rotary

This chuck rotary opens up new possibilities for a whole slew of engraving projects! When engraving with the rotary, your LaserMATIC's X-axis goes through its regular scanning motion, while the Y-axis remains stationary, with the rotary instead providing motion in that direction.

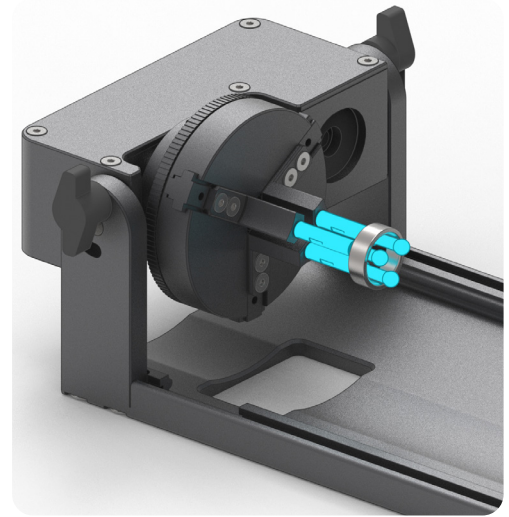
By using different jaw attachments, this chuck rotary can accommodate a great variety of round objects, from something as thin as a pencil, to 32 oz Yeti tumblers.



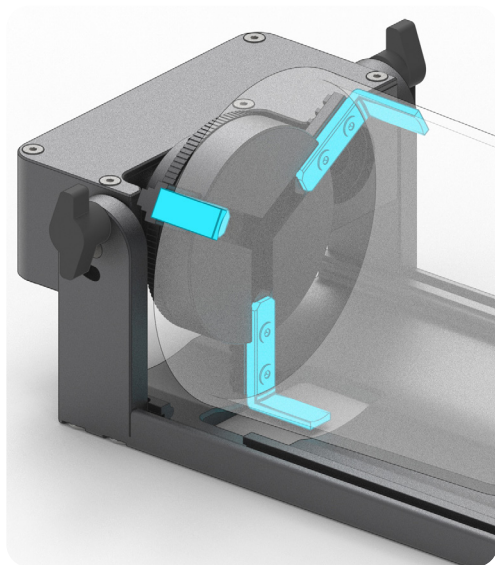
Each jaw is secured with two M3x6 flathead screws. With the Type A jaws facing inward, the chuck can hold onto objects with diameters between 3mm and 37mm.



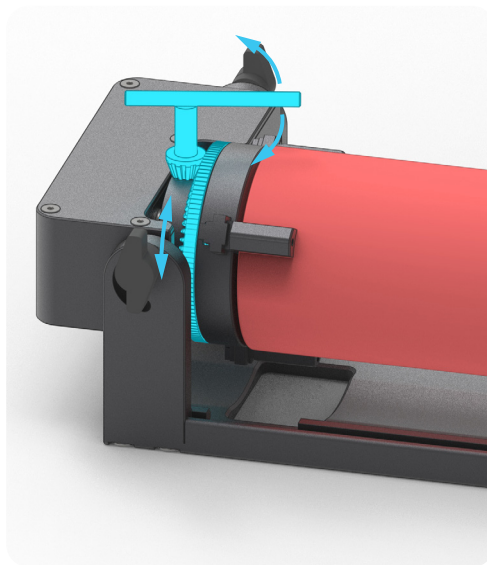
Turn the same Type A jaws to face outward for objects with diameters between 37 and 95mm. Note the jaws can attach to different holes on the chuck head.



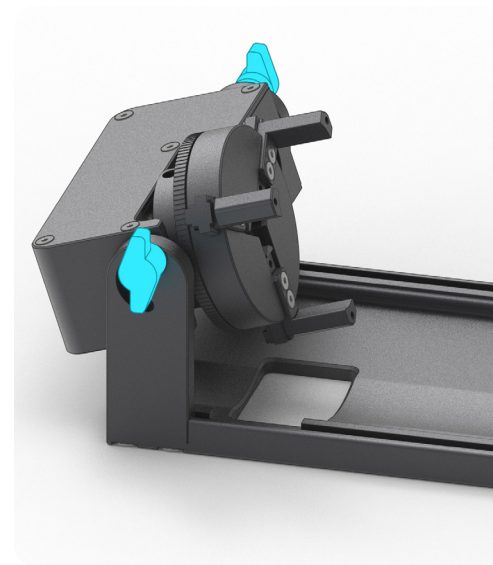
Ring posts can be screwed onto the Type A jaws, and they can expand outward and grab onto the inner circumference of rings and bracelets.



Type B jaws can be used to hold onto objects with diameters between 67 and 102mm, which is the maximum size that can fit within the enclosure.

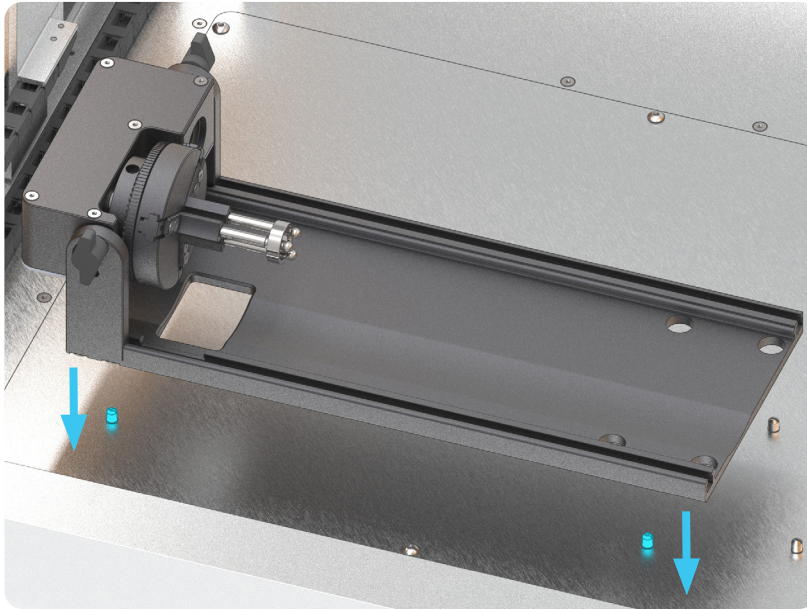


To tighten jaws onto each cylinder, either spin the grooved disk by hand, or use the provided chuck key.



The entire chuck head can pivot. Tighten the knobs on both sides to lock at the desired angle.

Lining Up the Rotary

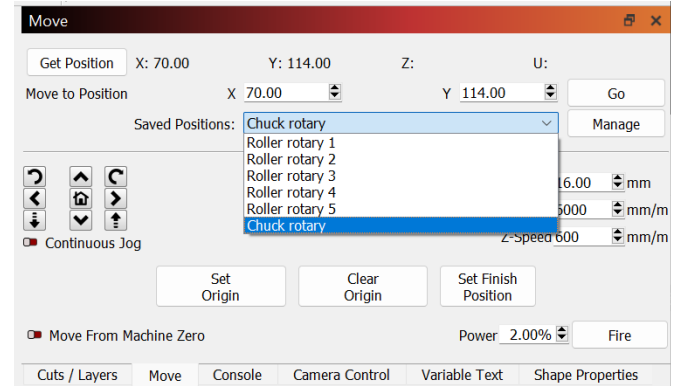


Place the rotary onto the dowel pins on the bottom plate. This ensures the rotary is parallel to the X-axis, and is always in a known position.



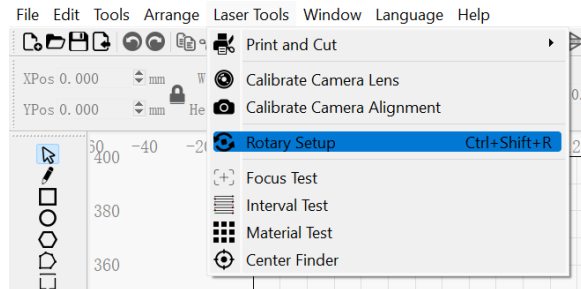
Make sure the laser module is above the chuck head and the workpiece before moving to the saved position mentioned above. Otherwise it may crash into the rotary!

To line up the laser module with the top of a cylinder, use the preset Y-axis position in LightBurn, provided the machine has been homed. For the Mk2 LaserMATIC, this preset position was also imported as part of the device definitions file. You can access it through the **Saved Positions** dropdown in the Move tab in LightBurn. Select *Chuck rotary*.

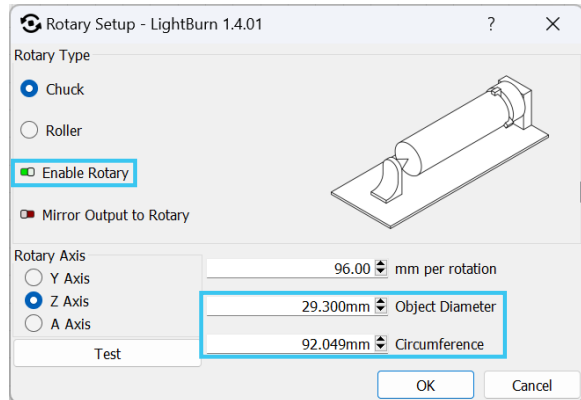


For the original LaserMATIC10 (sold before August 2023), you'll need to create a new saved position, by selecting *Manage* to the right of the dropdown. The coordinates for this position are (68, 96). However, if you have the 20W module upgrade and have installed the corresponding Y-axis hard stops, the coordinates would be different, use (68, 82.5 instead).

Enabling Rotary in Software



Accessing the rotary settings via the top menu

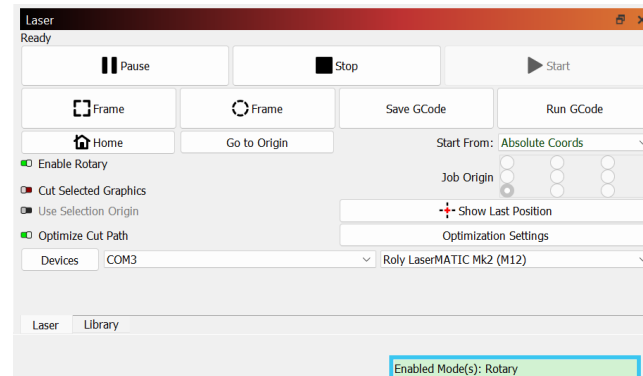


The above settings are automatically imported. Either object diameter or circumference needs to be set by the user.

When you imported the machine definitions for the LaserMATIC Mk2, its rotary settings were also imported. The settings can be found under **Laser Tools --> Rotary Setup** in LightBurn, shown left. The object diameter or circumference has to be provided by the user. A flexible measuring tape is included for measuring circumference, though using a caliper to measure diameter will be more accurate.

If you did not import the machine definitions (not too late to do so now!), please apply the settings shown on the left, and toggle the **Enable Rotary** option to turn on the rotary. In rotary mode, a green indicator message will appear on the bottom right corner of the LightBurn window.

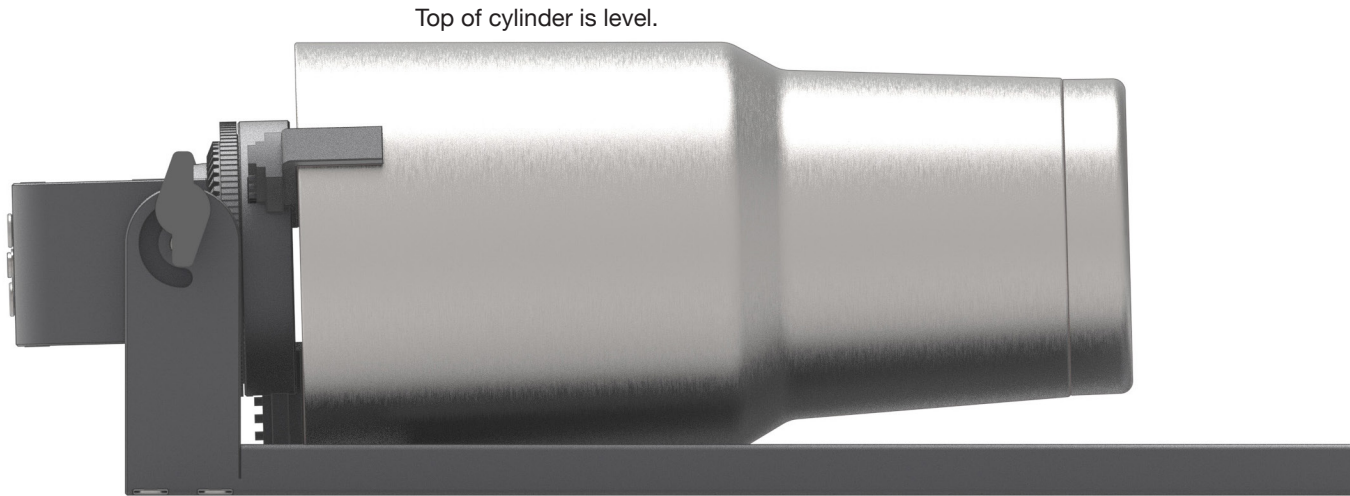
Don't forget to turn off the rotary when going back to flat workpieces!



Check this indicator if you find the Y-axis has stopped working. Your machine may still be in rotary mode.

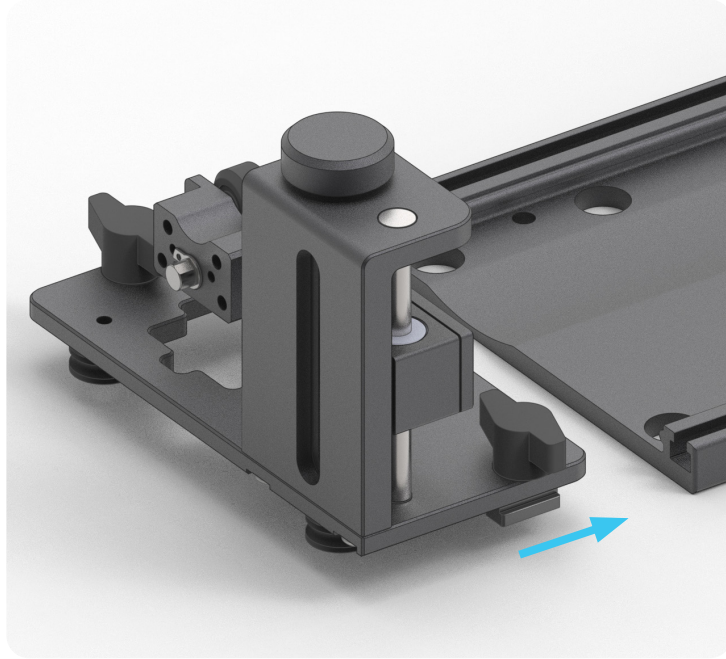
Engraving Tapered Cylinders

To engrave tapered cylinders, such as some popular tumblers, it's usually best to angle the cylinder such that a level edge is presented to the laser. The rotary head can be tilted to accomplish exactly this. A bubble level is included to help determine the right level of tilt.

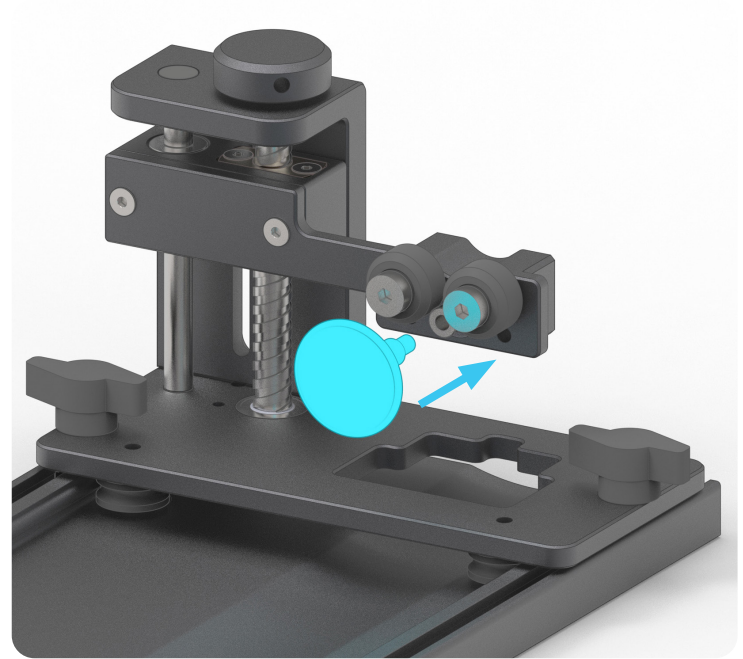


Using the End Support

The end support is not needed for most rotary operations, though it can come in handy in supporting heavy objects, and also serves as support when engraving spherical objects like Christmas ornaments.



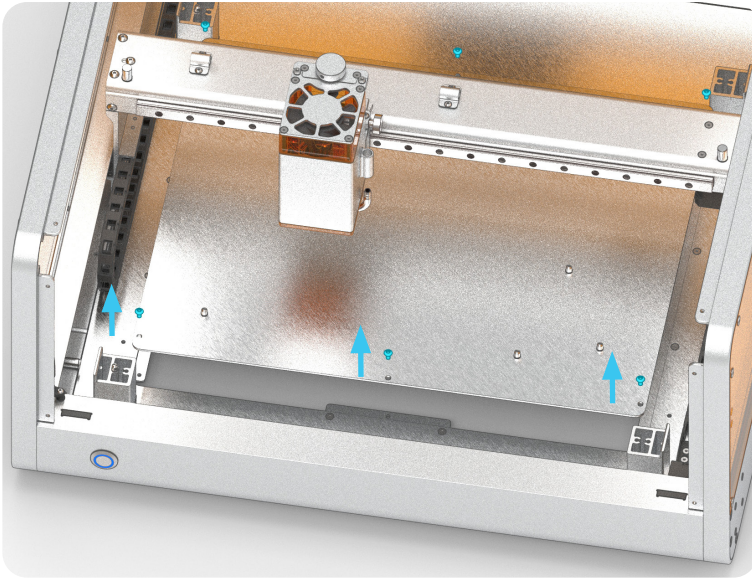
Slide the end support onto the base plate of the rotary. Lock by tightening the knobs on either side. Adjust height of the support arm using the top knob, and lock by tightening the back screw.



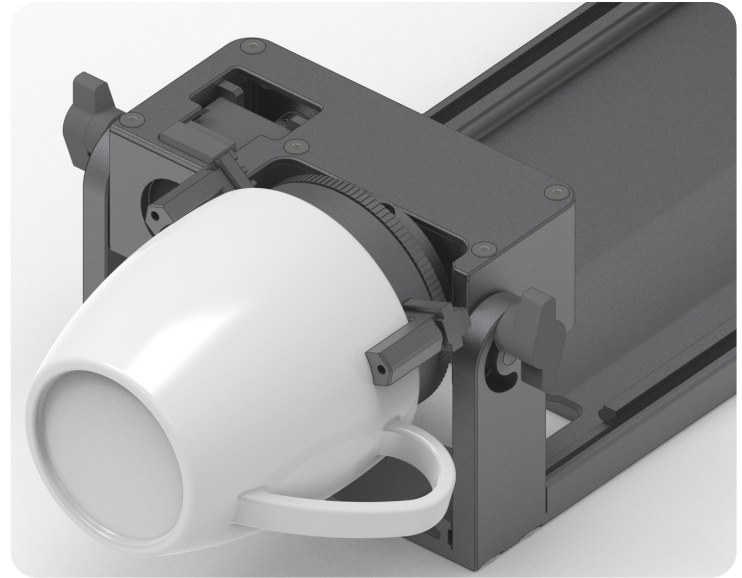
When engraving spherical objects, insert the support cup into the threaded shaft as shown. The cup is spring loaded and will gently press against the sphere to help keep it in place.

Engraving Mugs

For engraving mugs or tumblers with handles, the chuck head may have to be turned 180°, depending on the size of the mug and the artwork. This gives clearance for the handle to sweep across the bottom without hitting the base plate of the rotary. In this configuration, the rotary will no longer fit inside the machine enclosure, so the bottom plate has to be removed.

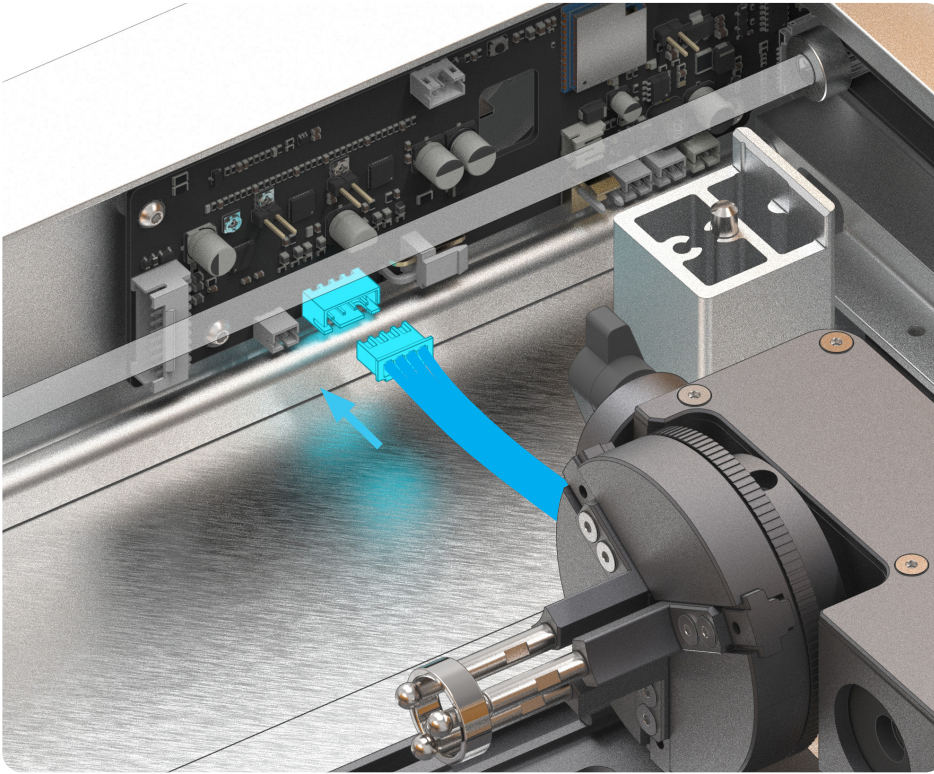


As shown, removing the bottom plate on the Mk2 machines requires the removal of 6 screws. On the original LaserMATIC, it's 12 screws though you have to turn the machine on its side.



The chuck head can be turned around 180° in order to work with mugs. You may need to place some weights on the base plate of the rotary to help keep it balanced.

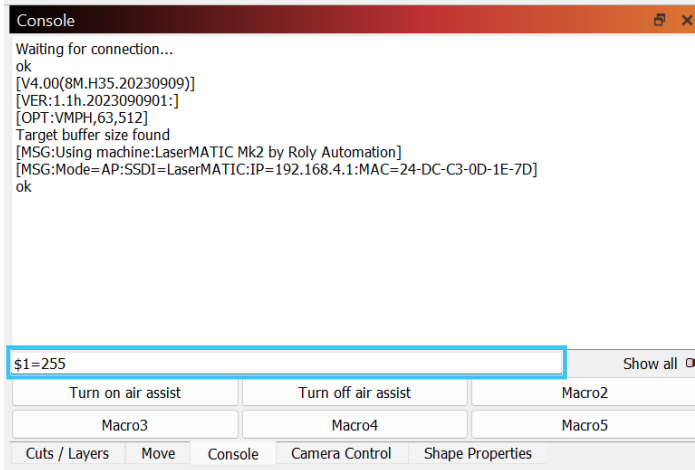
Connecting to Control Board



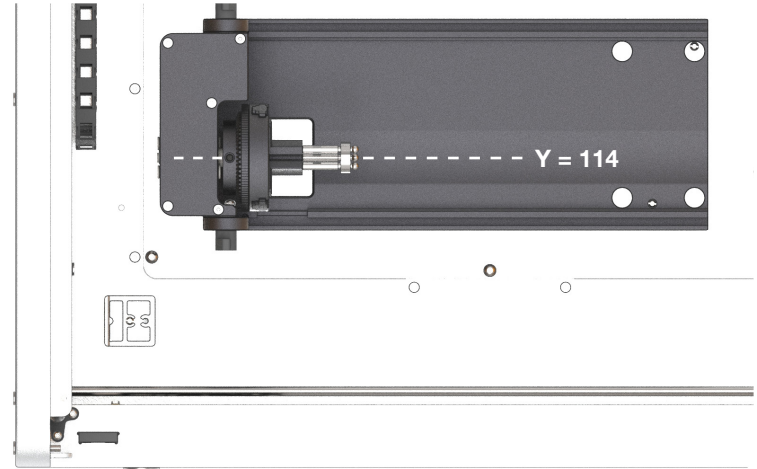
To hook up the rotary to the control board, first plug the provided cable into the stepper motor on the rotary. This is best done while the rotary is still outside the enclosure, as the stepper motor connector can otherwise be hard to access. Then plug the other end of the cable into the 4-pin connector labeled **Z-MOTOR**, located along the bottom edge of the control board. The wire should go underneath the front shaft.

Positioning Jobs on the Rotary

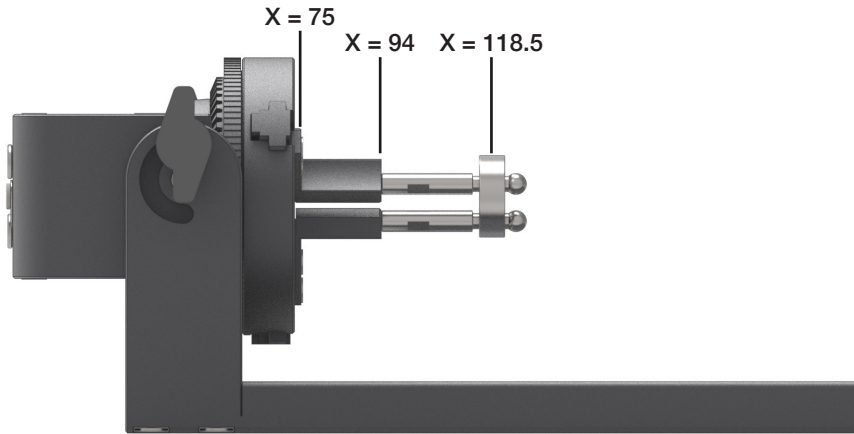
The best way to position artwork in LightBurn when working with the rotary is using the *Current Position* mode. To learn more about the different coordinate modes, we recommend checking out this explainer video from the official LightBurn YouTube channel: <https://youtu.be/aphiLTUWcjE>. To summarize, working in Current Position mode allows you to first jog the laser to exactly where you need it on the tumbler or cylindrical workpiece, and then start from that position without the rotary spinning in unpredictable ways. We've outlined the steps to positioning artwork on the tumbler below.



Adjust height of the laser module such that it **clears the top of the workpiece and chuck jaws**. To make sure the laser doesn't shift while you manipulate the Z-axis, you can set the steppers to lock by going to the LightBurn *Console* tab, and sending the command $\$1=255$. To revert back to the original value after you are done working with the rotary, set it to $\$1=25$.



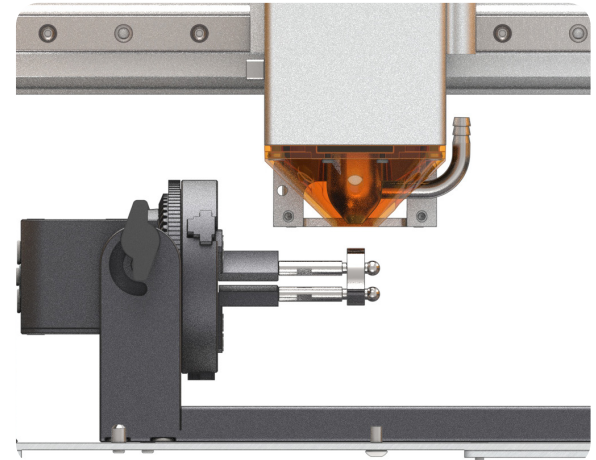
Then starting from the home position, select the *Chuck rotary* saved position to move the laser module directly over the centerline of the workpiece.



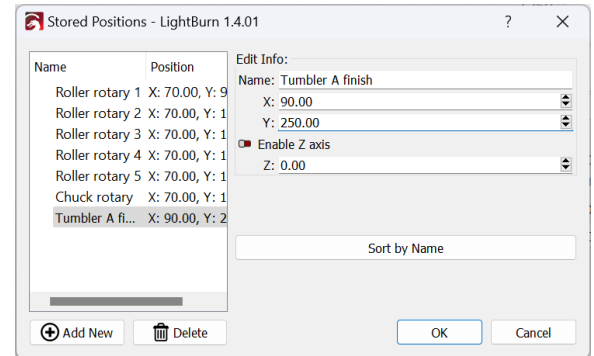
Jog the laser along the X-axis to the desired starting position. For smaller objects, allowance has to be made for the width of the laser module as it eventually has to be lowered below the chuck head. The laser module is 60mm wide (or 30mm from the laser beam to either side). For reference:

- The face of the chuck jaws are positioned at X=75;
- The jaws themselves extend out a further 19mm to 94mm. If your artwork extends to this area, make sure it's not covered by the jaws;
- Middle of the ring groove is positioned at X = 118.5mm.

In *Current Position* mode, the laser will remain in place above the rotary once a job is complete. If you wish for the laser to get out of the way in order to swap to the next workpiece, you can add a custom return-to position to *Saved Positions*, and have the laser go to it each time. We recommend setting it to somewhere directly north of the starting point, so the laser will not move left to right, which can cause crashes.



Lowering the laser module onto the workpiece.



Adding a custom return-to position

We Are Here to Help!

Thank you for choosing our chuck rotary. We are committed to helping you make the most of your investment. We offer two technical support options, and want to work with you to get this rotary working well with your LaserMATIC laser engraver.

Book a video troubleshooting session (recommended)

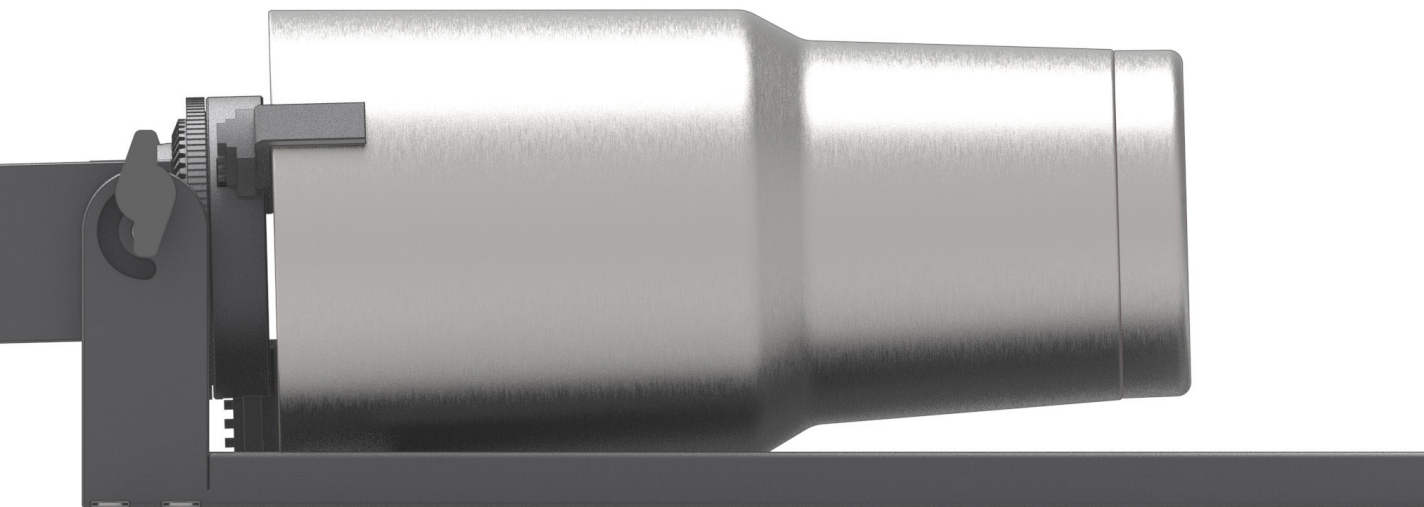
Book a free 30-minute video troubleshooting session at ***calendly.com/rolysupport***. Slots available for after 8pm and before noon Eastern Time. We can do Zoom, Microsoft Teams, Google Meet, Skype, or set up the teleconferencing software of your choice.

Send us an email

We'll respond within 24 hours to general and tech support emails at ***support@rolyautomation.com***.

We appreciate your business and are eager to earn your trust!

Cheers,
Leo, Founder



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