

INSTRUCTION MANUAL



ROTOBOSS

ROTARY ATTACHMENTS

Setting The Standard Since 2019



ROTOBOOT

Patent No.: US D985,640 S | Patent No.: US 12,090,572 B2

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JER Custom Designs
Jacksonville FL, 32226 | 904-701-8655

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Released November 1, 2019

Updated to All Metal Plates June 2020 | Updated To All Metal Components Oct 2021

AutoBoss DIY Kit Added April 2022 | Rotoboss and Rotoboss Junior 2.0 Nov 2022

Rotoboss Ascend Released April 2023 | Rotoboss Bolt/Boot Released Sept 2023

Rotoboss Talon Released 2023 | Rotoboss Talon PRO Released Nov 2024

Rotoboss Ascend PRO Released Nov 2024



INTRO

I want to thank you for your purchase of the Best Rotary you will Ever Purchase!

My goal has been and always will be to supply you with the very best product that I can and customer service that is second to none. I have carefully thought of every possible way to make this the very last Rotary you will Ever need, but of course that is just one person's perspective on this. If you have any suggestions to make it better please let me know and I will take every possible measure to implement any needed changes and in most cases at no expense to you.

**The complete line of Rotoboss Rotary Attachments carry a
LIFETIME WARRANTY!**

From the date of purchase.

Warranty covers any mechanical defect, failure of the rotary, and /or its components at no charge to you. Motors carry a one year only Warranty. If you have received this product and it is damaged please take pictures of everything and send them to us so we can file a claim with the carrier. I will get replacement parts sent out right away!

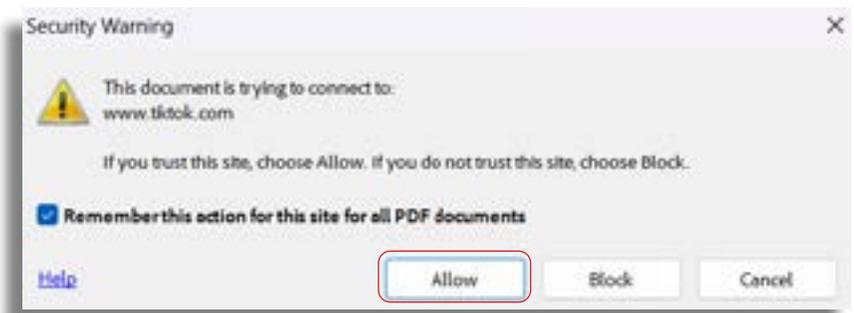


*Please leave a review and feedback, **good or bad** on any of the Rotoboss pages!*

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**CONTACT
SOURCES**



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www.rotaryattachments.com



See **VIDEO GLOSSARY for full web address, if button/links do not work for some reason.**

WHAT IS A ROTARY? & WHY DO YOU NEED ONE?

Laser rotaries come in **two main types**, the four-wheel rotary roller and the rotary chuck. Both allow the user to engrave around cylindrical objects, which would otherwise be impossible with a laser alone.

The chuck tools have been in the woodworking and metal lathe industries for a long time and in the laser world for about 15-20 years. However, in the last couple of years, laser rotary companies have been working to improve the rotary chuck specifically for laser use.

The roller tools have been in the laser community for about 10-15 years, only recently improved upon by several laser rotary companies and hobbyists. The improvements have made working with round objects easier and more efficient than ever, leading to a huge boom in the customized drinkware market.

Each type has its place, but with the advancement of some rotary rollers currently on the market, the rotary chuck has become less and less useful for common, everyday items. So when it comes right down to it, which one you need depends on how you intend to use it.

A quality roller rotary with features such as clamps, heel plate, and lifting systems is designed and built for the commercial production user that processes small to large quantities of the same or multiple objects. They genuinely give you dependable repeatability with the least amount of wasted materials. (Waste can be due to objects moving or slipping which ruins your piece and costs your business money.) The rollers are also useful for hobbyists, small production outfits, or one-off custom shops due to their ease of use and dependability - no matter the size of your business or hobby, time is money!

Chuck rotaries are the oldest type, and until recently, they were the most commonly used - sometimes the only option for doing cylindrical objects. Typical chucks are often heavy, cumbersome rotary tools that can be hard to operate. In addition, they can often damage the items you are working on because of how they hold your item and the pressure needed to keep it securely in place. People over the years have made some great adaptations to the common chuck rotary to make it more useful. In addition, companies started developing their own versions of the rotary chuck, geared specifically towards the laser community. These new chuck-style rotaries help address many of the problems previously encountered. Still, a persistent problem they can not address is the inability to handle a production-type environment. The nature of how they work increases the setup and production time compared to a roller rotary, and again, time is money! With that being said, they do have a place when working with very large and irregular items, such as glasses with a square base that can not roll. Another use, for example, is a large dog bowl that, when placed on a roller rotary (depending on your laser), may be too tall to fit within the confines of your laser.

Today the most popular and sought-after type of rotary on the market is the rotary roller. The choice is yours as to which one you want or need to own.

As for why you would need any one of them at all, they are rolling ATM machines in the ever-growing laser personalization market. With the fast-increasing demand for personalized drinkware, it is hard to own a laser and not have some rotary tool to accommodate your customers' needs. A rotary is an amazing revenue generator and requires very little effort to make a good profit, and because of this, the ROI (return on investment) is often realized within a few months of use.

Please take what you have read as a stepping stone and use this information to help dig a little deeper to find what works for you and your business. You can not go wrong with either or both types in your toolbox. Having all available tools at your disposal makes your business more versatile, allowing you to tackle any challenge that walks through your door. The goal of this article was to help shed some light on different types of rotaries that are out there, as well as briefly explore the uses and pros and cons of each. Hopefully, I met that goal! I wish you the very best in your laser journey and hope it is hugely prosperous! If you have any questions about anything covered in this article, please feel free to reach out to me.



WELL, HERE'S WHY!

RotoBoss Rotary Attachments are my creations out of necessity. I was tired of the same old rotary on the market, and for the past several years I have been making parts to improve the existing China rotary supplied by many laser manufacturers. After making parts, I decided to make my very own Rotary that addresses all the issues I have seen and dealt with. These Rotaries are unlike any on the market today and hands down the last and only Rotary you will ever need.

If you see anything similar to my rotaries under a different name, they are clones or copies of the one and only!

I have made this Rotary universal for use on many different machines running Light Burn and RUIDA controllers with stepper and servo motors. This means there is a rotary for every machine!



At RotoBoss, we're not just crafting rotary attachments; we're redefining the future of engraving. Blending traditional craftsmanship with groundbreaking innovations, our laser rotary attachments stand unparalleled in design, versatility, and precision.

GENERAL INFO

All of the RotoBoss Rotary Attachments will currently work with ANY laser using a Ruida or Trocen Stepper motor controller. Utilizing any NEMA 17 or NEMA 23 Motors, by just simply swapping out motors with no modifications needed, because the mount has mounting holes for both types of motors.

Your rotary comes equipped with a top of the line 2 or 3 Phase stepper motor in the form of a NEMA 17, 23 or Integrated stepper motor that properly suits your application. Your Rotary will come pre wired for use on your machine as needed. This means the rotary is Plug and Play with your machine.

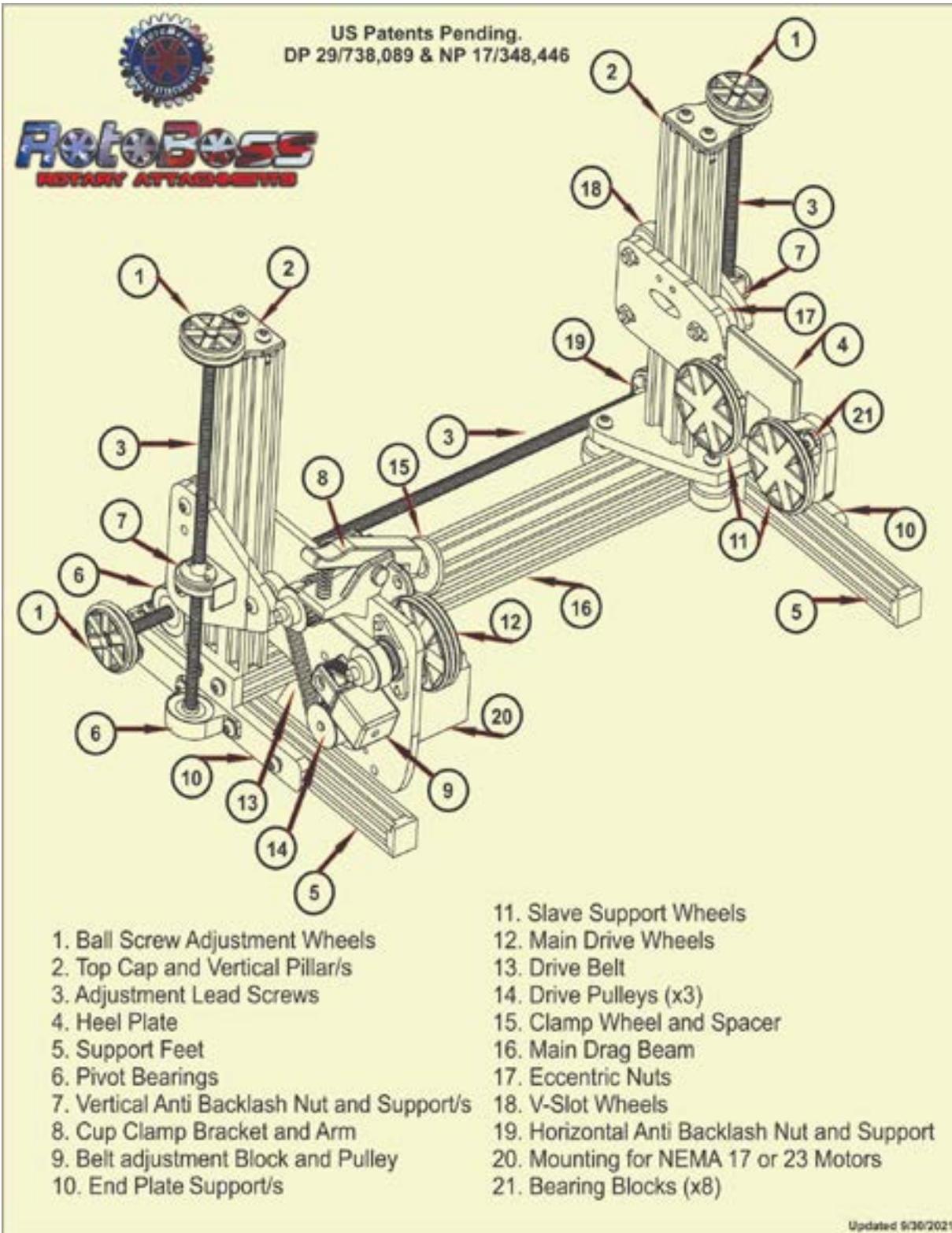


CONSUMABLE MATERIALS LIST

- Drive/Slave Wheel O-rings = 4mm x 32mm(ID)
- Small Clamp Wheel = 4mm x 12mm(ID)
- Large Clamp Wheel = 4mm x 20mm(ID)
- XL Clamp Wheel = 4mm x 24mm(ID)
- Ball Screw/Low Roller Drive Wheels = 4mm x 32mm(ID)

ILLUSTRATED PARTS BREAKDOWN (I.P.B.)

(Not inclusive to all Rotoboss Brand Rotaries.)



SYSTEM CHECKS PRIOR TO USE!!

- *Check and make sure that your machine was received in good condition! Look for any broken, bent or busted pieces and parts.
- *Ensure there are no loose or missing bolts, screws etc.
- *Check Tensioner pulley block bolt for tightness to make sure it didn't loosen after initial setup and shipping (*most common issue*)



ROTARY PLACEMENT IN YOUR LASER:

NOTE: Since these rotaries work in a wide range of lasers the placement in your laser may vary based on the Laser and Rotary combination you have. Below are recommendations and common practices for placement of the rotaries in machines unless expressly written below.



*** Remove the Honeycomb bed and blades if installed “as needed” to fit the rotary into the laser machine. Place your rotary into the machine firmly on the Honeycomb bed, (if clearance permits) bottom of the machine, on the crossbars in the bottom of the bed with the **motor on the left** side looking into the machine (with exceptions below). This placement is key to the proper rotation and orientation as it is how the rotary was designed.

*** ONLY For Thunder laser users with a machine that has a 5 Pin Plug for the rotary and All AEON lasers, your rotary will sit in the machine with the Motor on the right as you look into the machine. The 5pin Thunder can be used either way around by swapping dip switch number 5 to off on the motor if you prefer a different orientation.

*** Due to the homing of different kinds of lasers and clearance issues with the head and or gantry Thunder Laser Odin and AEON Users Please note your Rotary is set up from the manufacturer to run and should be placed with the motor on the right for all the AEON lasers to prevent gantry from potentially contacting the rotary tower(s).

*** If you receive a rotary and you place it in the machine as directed above and your image comes out mirrored all you have to do is turn the rotary around 180 deg and then flip artwork 180 deg and it will engrave fine. This is a rare occurrence and may have been wired incorrectly for your machine to run the motor on the left side (excluding AEON) Simply turn the rotary around, you will not lose any function of the rotary because they are made to work either way.

The best way to line up your rotary (in most cases) is to draw a line down the middle of a cup and move the red dot over one side and then shift it to the other. You will adjust the rotary placement until it is straight. The center of the motor side of the rotary can be found by placing the red dot over the clamp arm and centered. You may also line it up with the X axis gantry by sighting down the bar to line up the rotary cross bar.

MACHINE & SOFTWARE SETUP (PG.1)

Note: *These settings are based on testing of said machines and are only baseline numbers that may need to be tweaked for your machine/setup.*



Ruida Controllers settings for Lasers:

Pre 2020 Boss Laser LS 1416 and 1420:

Circle Pulse/Step per rotation is set to = 6100

Diameter is set to = 44mm/2.20in.

These settings gave good results for all size objects tested from a shot glass to a large beer mug.

Post 2020 Boss Laser LS 1416 and 1420:

Circle Pulse/Step per rotation is set to = 3400

Roller Diameter is set to = 44mm/2.20in.

Boss Laser LS2436 thru 3655:

Circle Pulse/Step per rotation is set to = 5,650

Roller Diameter is set to = 44mm/2.20in.

Boss Laser LS 16 series:

Circle Pulse/Step per rotation is set to = 5,210

Roller Diameter is set to = 44mm/2.20in.

AEON Laser Nova series:

Circle Pulse/Step per rotation set to = 10,200

Roller Diameter set to = 44mm/2.20in.

MACHINE & SOFTWARE SETUP (PG.2)

Note: *These settings are based on testing of said machines and are only baseline numbers that may need to be tweaked for your machine/setup.*



Thunder Laser:

Circle Pulse/Step per rotation set to = 4400
Roller Diameter set to = 56mm/2.20in.

-Aurora Low Roller:

Circle Pulse/Step per rotation set to = 4400
Roller Diameter set to = 44mm/1.73in.

AP Lazer 1812:

Circle Pulse/Step per rotation set to = 6450 and
roller Diameter set to = 44mm/2.20in

Orion Motor Tech (OMTech) 50W CO2 Laser:

Circle Pulse/Step per rotation = 2300 and
roller Diameter 44mm/2.20in.

LAGUNA EX/MX Laser:

Circle Pulse/Step per rotation = 4650 and
roller Diameter 44mm/2.20in

Yorahome 40W Diode Laser:

Circle Pulse/Step per rotation = 41.5mm and
roller Diameter 44mm/1.57in

SOFTWARE SETUP

PRIOR TO RUNNING YOUR MACHINE

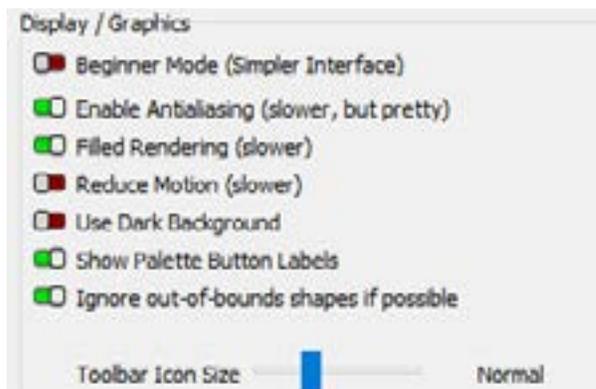
- Once this setup is complete you should be able to do everything from small mugs to 30oz cups with little to no adjustments required of the Steps per Rev. outside that steps should be used to make corrections based on the type of object you are using.
- With a 20oz tumbler (preferably for best results) Complete the setup as follows:
- Create a 25.4 x 25.4 mm or 1in x 1in box and fine tune setting from there. If the image is stretched lower your Steps per rev and vice versa for too small.

“Do Not” Change the object diameter, it should be at 88mm and left alone (setup was designed with these numbers although not applicable now). The only changes should be made to the Steps per rotation as needed for your given object.

“Do Not” Use absolute coordinates when using the rotary or you will get an error. You should use either “User Origin” or “Current Position” when using the Rotary and always hti origin on the Laser control panel once you position the Rotary and head to insure proper operation.

- If you choose to do the 360 deg test in lightburn it will alter the true 1 to 1 scale that the above instruction set you up with and should be two separate setting files for when doing engraving based on your project (standard logo or wraps)
- When trying to enable the rotary button for Y axis driven machines, for the main screen follow previous instructions and search for beginner mode(circled below) and make sure it is disabled as well.

Note: if using Thunder Gantry lasers, using test button does not work properly.



From RDWorks take your image and rotate it 90 Deg. (top of image should face left)

From LightBurn take your image and rotate 270 Deg. For Boss, Full Spectrum, Thunder, Xtool, K-40 (top of image should face left) or 90 Deg. for AEON and some Laguna (top of image should face Right)



[Click here for Set up Videos](#)

See **VIDEO GLOSSARY for full web address, if button/links do not work for some reason.**

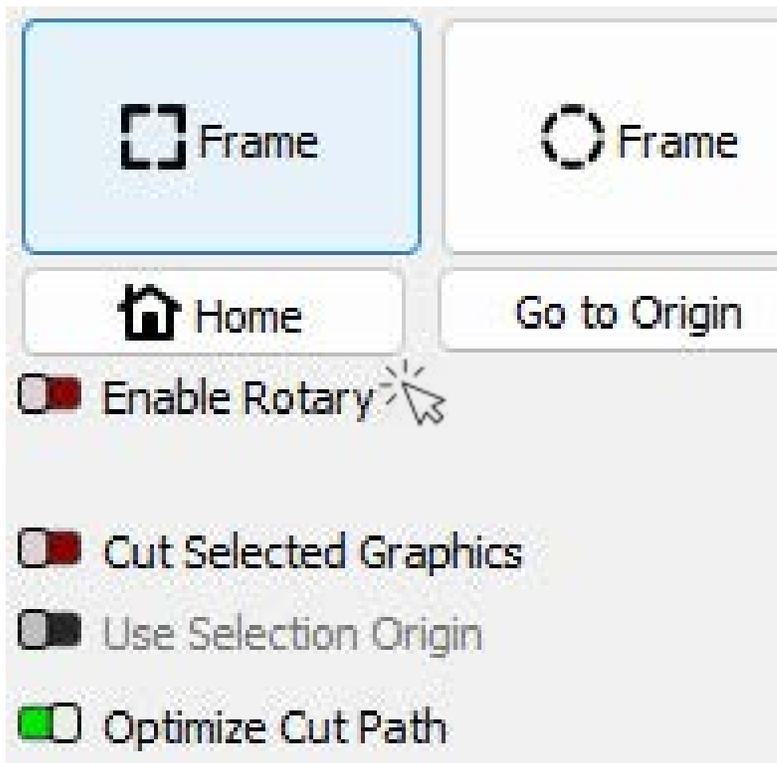
LIGHT BURN SETUP

Using Lightburn, setup your settings as follows:

Rotary Manufacturer recommends only using Machine setting to make changes to rotary setup. From the main screen, click on the Edit tab and scroll down to the Machine settings tab (make sure the laser is on and connected to your PC) Scroll down to the Rotary parameters and fill in as shown below. In the rotary settings make the change as required to the “Rotary Diameter” and “Steps per Rotation” Your numbers will differ based on the machine. You can also use this screen to turn rotary on and off or with the button shown below on the main screen of Lightburn. I have found that If you use the rotary setup screen it will not function properly and the extra info they can ask for that is not applicable to Roller rotaries.

(EXAMPLE IMAGES ONLY)

Rotary Parameters	
Enable Rotary	<input checked="" type="checkbox"/> True
Pulses per rotation	3,700.000
Diameter	56.000



For Lightburn, if you do not have The Rotary enable switch on your main screen, do the following:

Go to the *Edit tab*.

Scroll down to *Settings*.

Look for the tab that says “show rotary enable” and click it **green**. Hit ok and it will exit to the main screen, you should now have the enable rotary button under the laser tab on the right.

See photos for references on what your own software should look like.

EXAMPLES ONLY



If the numbers provided do not work check your Y Axis controller to see what the Pulse/Revs are for the given DIP Switch positions. (see photo)

These charts give you a good baseline to work from, but with so many different gear ratios it is hard to say if these are 100% accurate. The trend indicates for my rotary, your Pulse/Rev is about 1.5 times the number on the chart.

(example: 4000 on chart is 6000 in software settings)

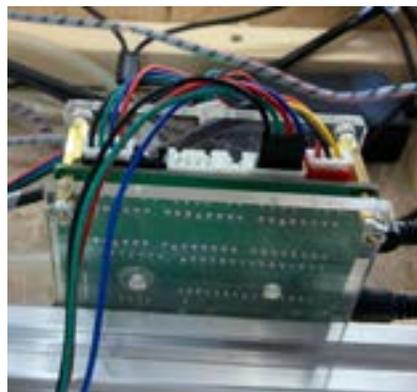
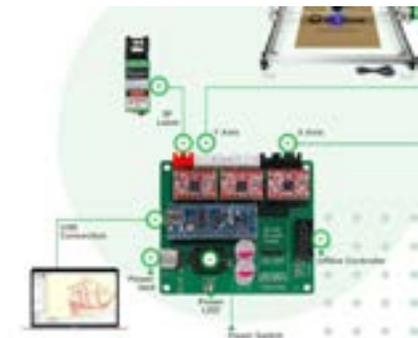
Again, every machine can vary and these are **ONLY suggested** settings based on testing and may need fine tuning.

Thunder lasers:

On, Off, On, Off, On, Off



Yorahome 40W DIODE Laser Setup



Visual representation ONLY. This is not a technical description for your specific rotary.



If you have trouble with your settings please feel free to contact me and I will assist as needed. If you get your numbers dialed in, I ask that you share those settings with me so I can update this manual to aid others with their similar machines.

ROTOBOSS



The RotoBoss Low Roller is my attempt at a simpler, more bang for your buck Rotary for the smaller desktop Laser machines. This rotary is designed for use on blade beds and has all the same functions as the RotoBoss Jr. *with the exception of the adjustable Motor side assembly.* On the RotoBoss Low Roller the drive side is fixed in place and only the Slave wheel assembly is vertically adjustable. The low Roller also sits substantially lower to the ground than the other RotoBoss rotaries. This machine comes stock with smaller wheels to get the most out of your close quarters machines and still be able to do as tested fit up to a 4.5" Diameter beer mug. In this configuration it will stand 5.5 -5.75" in high with a 30oz cup on it. It can go down to most shot glass size items.



The RotoBoss Low Roller Rotary attachment is specifically tailored for All Galvo and smaller desktop lasers.

Elegantly designed in a sleek "All Black" finish, this isn't just another rotary.

It's a symphony of unmatched features and precision engineering.

Get your business rolling with this RotoBoss Rotary.

- ✓ **Sleek Monochromatic Design:** Exclusively available in an elegant all-black finish, the Low Roller Rotary complements any modern workspace.
- ✓ **Beyond Ordinary:** While rotaries are crucial tools, the RotoBoss Low Roller is in a class of its own. Packed with exclusive features, its design emphasizes functionality and precision.
- ✓ **State-of-the-Art Mechanics:** Driven by a high-grade stepper motor and top-tier mechanics, this rotary guarantees accurate and consistent engraving.
- ✓ **Adjustability Perfected:** Our innovative height adjustment system for the slave wheels caters to a vast array of cylindrical objects. Alongside, the lead screw-operated axis ensures swift leveling without post-adjustment hassles.
- ✓ **All-in-One Kit:** Equipped with mug spacers, a removable cup clamp, a large-sized wheel, and a heel plate adapter, the Low Roller ensures you're ready for action immediately after unboxing.
- ✓ **Compact Yet Robust:** Don't let its size fool you. This lightweight rotary packs a punch and promises durability with a lifetime warranty on breakable parts and a 1-year warranty on the motor.

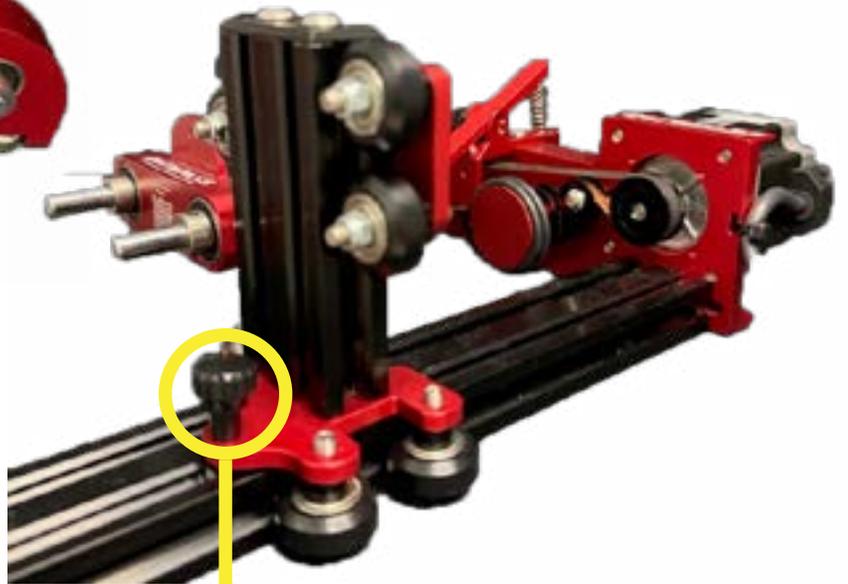
Approx 8.25in high with 30oz cup.

ADJUSTMENTS

The most unique feature for the Rotoboss Rotary Attachments is that NO other Rotary has a Precise mechanical adjustments and holding on both sides of the rotary machine to allow perfect and consistent vertical adjustment of both the Motor and Slave wheel side to accommodate those awkward and otherwise hard to engrave items; such as bottles, vases, wine glasses and more.



Loosen this thumbscrew, and manually move arm up/down to your desired position for engraving items.



Loosen this thumbscrew, and manually move arm side to side to your desired position to align items on all wheels for engraving.

History of Rotoboss

Hello Everyone!

I wanted to take a moment to first thank you all for your continued support. I realized three and a half years into the rotary business and have not really discussed how we got to this point so I figured I would take this opportunity to share that with you.

-Jason Rife

It all started in 2018 after using lasers for a few years and utilizing the old standard China rotary that typically came with every laser at the time. You know the one, the three-jaw chuck rotary that has been around in the manufacturing industry for decades. I knew there had to be a better way to get the job done more reliably so I created my own personal rotary to combat all the deficiencies with what was on the current market. After having built my personal rotary, the clamp system I had for it worked so well that I started making an adapted version for the China rotaries to make them more dependable. After making the kits for old rotaries for some time, I began to get asked if I was going to make a rotary for other makers.

At first, I was skeptical because it was a big gamble and a huge leap of faith but, there was obviously a need out there if people were asking. After some thought I decided to take my current rotary (*unnamed*) and see if I could refine it into a product that would be good for others to use. After getting to a point where I thought I had something viable, I started to ask people if they would be interested in a rotary that I was developing. To my surprise I had a lot of positive feedback, so I decided to make a go of it.



Once I had the now *Rotoboss* made, I held a contest to help name it. There were some great names submitted but, in the end, the eventual winner was “Rotoboss”. The original Rotoboss was bootstrapped and launched on *1 Nov, 2019*. Shortly after, the Junior and Low Roller came into play as a more economical alternative to the Rotoboss. With the success of the Rotoboss rotaries, I filed Design and Utility Patents in early 2020 to cover the design and function of the Rotoboss Rotaries.

From 2019 to mid 2020 the rotaries were made of acrylic and 3D printed parts. As our company grew, I reinvested all the money into the company to upgrade materials to refine the product. In June of 2020 our first upgrade was the acrylic plates were replaced with metal plates as well as the motor and slave wheel assemblies were improved upon. After great success with these improvements, I was able to finally get the Rotaries to the point of All Metal 6061 Billet Aluminum parts on *1 Oct, 2021*. In 2022 we were able to do one better with Milled edges to what they currently are today.

History of Rotoboss

After 3 years of the “original” tried and true design, along with ample feedback from you all about what you would like to see better, a change was made resulting in the current 2.0 rotaries being released in October 2022. The 2.0 rotaries kept true to the design and function of the first gen rotaries with some added features:

- More adjustability in the height adjustments
- Quick adjustments on slave wheels
- Cosmetic changes to the look of the rotary and the ability to remove the slave wheel lead screw
- Friction lock for quick adjustments and placement.

After quickly gaining traction with our rotaries, I was able to start working with 4 major laser brands as early as 2019. Thunder Laser USA was our first and number one partnership that is still going strong today in the USA and four other countries. Second was AEON Laser USA which we still supplied in the USA and two other countries. Third is AP Laser. We worked with AP Laser for about a year until they came out with their own rotary. Fourth would be Laguna Laser which is still going strong for a little over a year now. Finally, we are working with a couple other laser brands that will be announced in the near future.

All roads have led to 2023, where we now have our latest design to be released in April/ May 2023. The latest design is the “Rotoboss Ascend” which is a towerless scissor lift rotary that once again will change the game for laser rotaries with its many one-off features such as spring loaded heel wheel, improved clamping system, unobstructed pass-through capabilities for long or odd shaped objects that would otherwise be unable to be done with other rotaries and the free motion slave wheel slider.



Once again, we have decided to expand our line of rotaries and invest in something that has been in the back of my mind for a couple of years now. With the recent interest of galvo lasers and usage of the standard China chuck rotaries, there is interest from the maker market to bring to them a chuck style rotary that is modernized. Our design team is now working on the “Rotoboss Talon” , a Chuck style rotary. Being how I am, I could not leave well enough alone and had to improve on it, so I opted for the more consistent and reliable 4 Jaw chuck that has not been made for laser machines. This rotary is currently in R&D and projected to be out in the fourth quarter of 2023 if all goes to plan.

That pretty much covers how Rotoboss got started and how we ended up here today.

Again, I want to thank you for your support.

Your feedback is paramount to me and the growth and quality of our products. I would love to hear any feedback from the maker community to help improve our product line so we can better help you optimize your business success.

Please send your feedback to rotoboss@rotaryattachments.com

Enjoy your SWEET TREAT & COMPLIMENTARY SWAG While you engrave!



** You can purchase different size shirts, and different color bags with any of your favorite Rotoboss logos on our site**



**Click Here*
to order
Merch Today!*



DISCLAIMER

JER Custom Designs Inc. and Affiliates are not liable for damage to equipment or bodily injury due to improper use of these Rotaries. Careful thought and design have gone into these products to limit the potential for obstruction which could lead to damage to you or your machine. Make sure to always check your clearances to ensure there is no danger of impact prior to operating these rotaries. Due to the nature of the manufacturing process, Rotaries may have some sharp edges that could cause injury. Take a moment to familiarize yourself with the rotary and take note of such areas. Every effort is made to mitigate the risk to the end user.

****Not recommended for anyone under the age of 16.****

[**https://rotaryattachments.com/product-category/rotoboss-swag/](https://rotaryattachments.com/product-category/rotoboss-swag/)

VIDEO GLOSSARY (PG.1)

Right Click to open link if it does not open normally, or copy and paste into browser



<https://www.instagram.com/rotobossrotaries/>



<https://www.youtube.com/channel/UCzrLYdbijlXjJM91ulclQhQ>



<https://www.tiktok.com/@rotoboss>



<https://www.facebook.com/Rotobossrotaries>

Facebook Groups:

Rotoboss <https://www.facebook.com/groups/559200807984810>

Tools/Jigs: Boss/Aeon <https://www.facebook.com/groups/540298903199333/>



▶ Video explaining the differences between the RotoBoss models:
<https://www.youtube.com/watch?v=KnjNhZg064k&t=2s>

▶ Low Roller Placement & Setup Video for Thunder NOVA 24:
<https://youtu.be/Z3470e2bhKU>

▶ Side Support Bracket (Low Roller)
<https://youtu.be/Z3470e2bhKU>

▶ RotoBoss and RotoBoss Junior Quick Slave Wheel Adjustments:
<https://youtu.be/FZsqaixqSsM>

▶ ALL METAL UPGRADE KITS Install Video:
<https://www.youtube.com/watch?v=3RAAg0gFZuU&t=631s>

▶ Rotoboss Rotary Attachments Accessories Video:
https://youtu.be/P7Gb_nHm8eM

VIDEO GLOSSARY (PG.2)

Right Click to open link if it does not open normally, or copy and paste into browser



Other Videos to check out:

- ▶ RotoBoss and RotoBoss Junior Setup and install for Thunder NOVA 24-63:
<https://youtu.be/ehcZF9LSWkk>
- ▶ AutoBoss (for RotoBoss Rotary) in Action:
<https://youtu.be/QJTMaI-Y6I8>
- ▶ Spring Loaded heel Wheels Install/Use
https://www.youtube.com/watch?v=CyDu1r_E-PM&t=91s

Youtube Playlists

- ▶ Trouble Shooting

https://www.youtube.com/playlist?list=PLYkJ_L4UZaCyCCGhyx0pe1clClhIx_0XH

- ▶ Talon

https://www.youtube.com/playlist?list=PLYkJ_L4UZaCy0v6acETyxNuwYepShpRBq

- ▶ Ascend

https://www.youtube.com/playlist?list=PLYkJ_L4UZaCyj6c_5Phlf0uxp9uyavGGs

- ▶ Rotary setup and software set up

https://www.youtube.com/playlist?list=PLYkJ_L4UZaCz5Dles-j1VAoMUpKNBuBK6