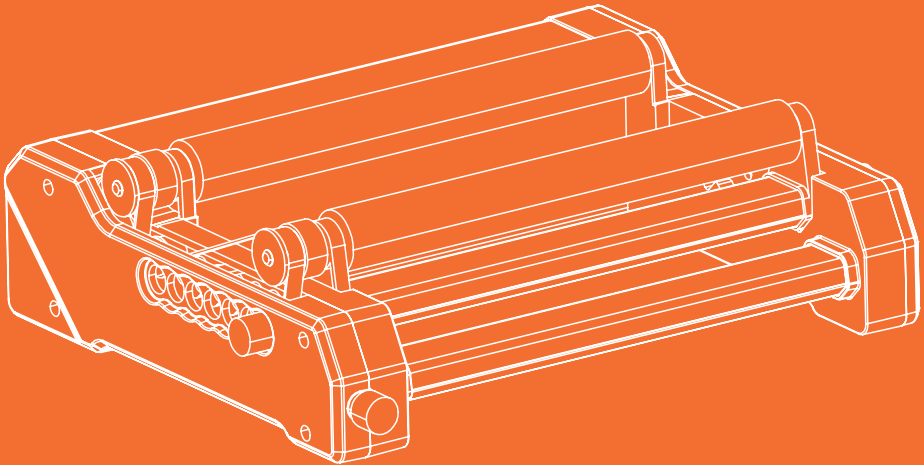


AlgoLaser **RR2**

QUICK START GUIDE

Rotary Roller



Always read the instructions before you start.

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1. Safety Statement

Before starting to use the RR2 rotary roller, please read this safety guide carefully. It includes situations that require special attention, as well as some warnings against unsafe behaviors, so as to prevent you from losses and injuries.

1.1 Laser Safety

The engraving machine matched with the RR2 rotary roller is a Class 4 laser product. As the laser is of rather high power, it may cause eye injury and burned skin. Please pay attention to the following notes:

- 1.1.1 When using the laser engraving machine matched with the RR2 rotary roller, it is recommended that you wear laser protective spectacles.
- 1.1.2 Avoid exposing your skin to a Class 4 laser beam, especially at a close distance.
- 1.1.3 Teenagers must be supervised by adults during use.
- 1.1.4 Do not touch the laser engraving module when it is turned on.

1.2 Fire Safety

- 1.2.1 Since the engraving machine matched with the RR2 rotary roller will burn the base material when cutting, the high-intensity laser beam will give rise to extremely high temperature and generate immense heat, you need to always pay attention to the material under the laser engraving machine.
- 1.2.2 Some materials can catch fire during the cutting process, thereby generating gases and fumes inside the machine.
- 1.2.3 When the laser beam irradiates the material, a small flame usually occurs. It will move with the laser and will not stay lit as the laser passes by. Do not leave the machine unattended during the engraving process. Make sure to clean the clutter, debris and inflammables in the laser cutting machine after use. Always keep a functioning fire extinguisher nearby. When using a laser engraving machine, the material (plastics and other combustible materials) will generate fumes, vapors, particulates, and potentially highly toxic substances. These fumes or air pollutants can be detrimental to health.

1.3. Material Safety

- 1.3.1 Do not engrave materials with unknown properties. Do not engrave materials that will melt after being heated by the laser, otherwise it will melt and damage the RR2 engraving machine.
- 1.3.2 Please use the RR2 roller to engrave cylindrical objects, such as beverage cans, beer bottles, baseball bats, etc. This product is equipped with a side bracket, so it can be used to engrave goblets.

1.4 Safety in Use

- 1.4.1 The RR2 rotary roller can only be used horizontally, and it must be ensured that the rotary shaft is securely fixed to prevent it from being accidentally displaced or falling off the work surface to cause a fire during operation;
- 1.4.2 It is strictly forbidden to point the laser at people, animals or any combustibles, whether or not in the working state.



2. Disclaimer and Warning

- Before using this product, please read this manual carefully to understand your legal rights, responsibilities and safety instructions; otherwise, it may give rise to property damage, safety accidents and personal safety hazards. Once you use this product, you should be deemed to have understood, received and accepted all terms and content of this manual. The user is responsible for his or her actions and all consequences arising therefrom. The user agrees to use the product only for lawful purposes and agrees to the full terms and content of this document. Unless you provide the original engraving or cutting files, you understand and accept the used engraving software configuration parameters, operating system information, videos of the engraving or cutting process, and operating procedures before a problem or failure occurs. The company is not for any and all losses caused by the user's failure to use this product. The company has the final interpretation right of the manual, in compliance with the law. The company reserves the right to update, modify or terminate the terms without notice.
- This product is not suitable for use by persons under the age of 15. Please keep this product out of the reach of children. Please be careful in operation scenarios with children. Be careful not to injure your hands in the process of adjusting the gear. The company will not be responsible for any injuries occurred.
- This product is a multifunctional rotatory roller, which works under normal power supply and without damaged parts.
- The company is not responsible for the consequences of using this product to DIY into devices with other functions, such as crawler conveyors.



3. Introduction to RR2 Rotary Roller

- The RR2 rotary roller can be used with the engraving machine to engrave and cut cylindrical objects.
- The RR2 rotary roller adopts a plastic and aluminum base, which is strong and stable. The height of the roller is higher than that of other parts of this product. As this product is equipped with two brackets, it can engrave objects with greater lengths, has wider range of engraving width and has no restriction on the shape of the engraved object. For example, it can be used to engrave a long plane board. The space between the rollers can be adjusted, with 7 gears available. It can engrave the objects of different sizes by adjusting the space between the rollers, so that the engraving machine has a wider range of use.
- The adjustment method of the RR2 rotary roller is very simple. By removing the left and right hand screws and loosening the front tensioner, the gear can be shifted to adjust the space between the rollers. After adjusting the space, install the hand screws and tighten the tensioner. When screwing on the left and right hand screws, align the positioning holes on the side cover. No matter how the space between the rollers is adjusted, the two rollers are always kept on the same horizontal plane and parallel lines.
- The rotary motor is built-in, if it works for a long time, the motor will get hot, yet the aluminum material of the machine body will help dissipate heat, so there will be no accidental scalds; The one-piece silicone roller, with hardness up to 70A, has stronger frictional force, which makes the engraving process more stable. RR2 supports all of AlgoLaser's products, including Alpha, Delta, and DIY KIT. Its rotary roller line speed is compatible with 95% of engraving machines on the market, including Neje, Ortur, and more. Its plug-and-play design eliminates the need for adjustments.

4. Software Setup Instructions for Using the Rotary Roller

The RR2 rotary roller is used in conjunction with one of the axes of the engraving machine (including X and Y axes), supporting all of AlgoLaser's products, including Alpha, Delta, and DIY KIT, and it is also compatible with Neje, Ortur engraving machines, with no need for pulse adjustment. They can be directly used by connecting with the machine. If it is used with engraving machines of other brands, pulse adjustment may be necessary. At present, LaserGRBL and LightBurn are two of the commonly used software for engraving machines. The figure below is the operation method of the installation and pulse adjustment of the two software.

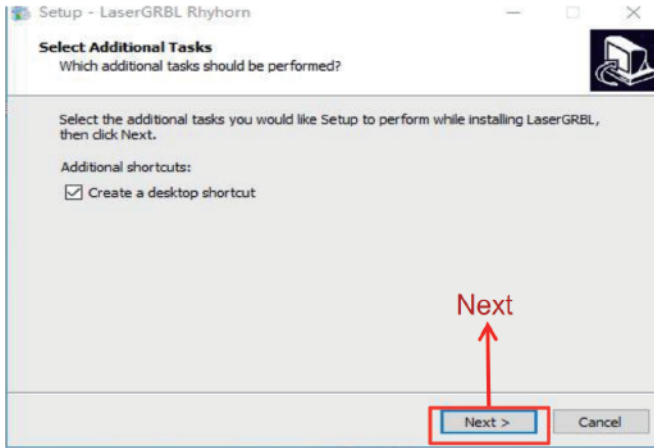
4.1 Installation and Pulse Adjustment Method of LaserGRBL Software

4.1.1 Download software

LaserGRBL is one of the most popular DIY laser engraving software in the world, it can be downloaded on the website of LaserGRBL: <http://lasergrbl.com/download/>.

4.1.2 Install LaserGRBL

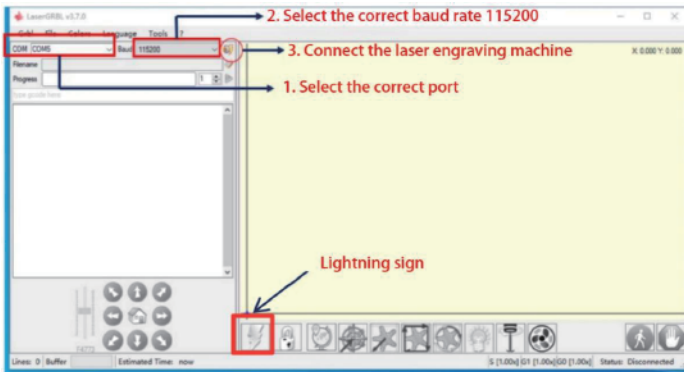
Double-click the installation package to start the software installation, and keep clicking Next until the installation is complete.



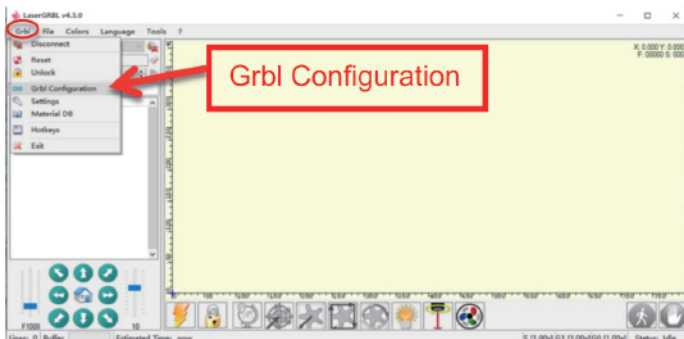
4.1.3 LaserGRBL Software Pulse Adjustment Method

a. Double-click to open the LaserGRBL software, connect the engraving machine to the computer installed with the LaserGRBL software. Click the lightning sign in the software. When the lightning sign turns into a red X, it means the connection is successful.

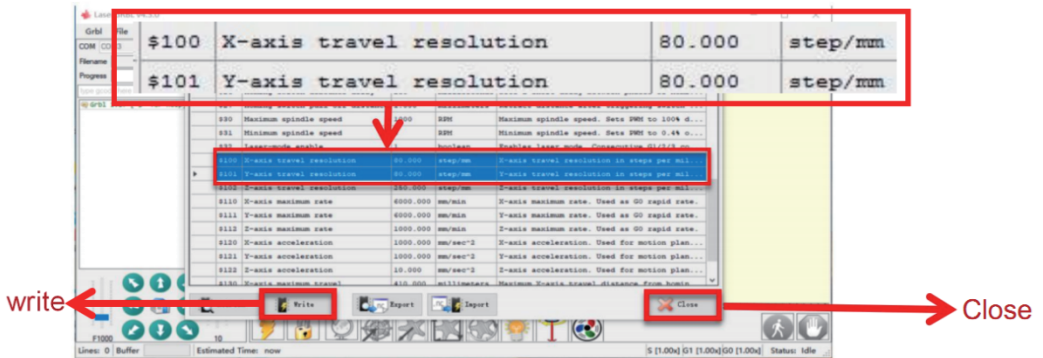
1. Select the correct port
2. Select the correct baud rate 115200
3. Connect the laser engraving machine



b. Click Grbl, select Grbl Configuration



- c. Find \$100 (X-axis travel resolution) and \$101 (Y-axis travel resolution), enter the wanted pulse value in the Value column, (To find the matching pulse value, you can engrave a 50*50mm square and measure whether the side length of the square is 50mm after engraving. If the error does not exceed 0.5mm, the parameter at this time is the proper pulse value.) Click Write, then click Close to complete the setting.



4.2 Installation and Pulse Adjustment Method of LightBurn Software

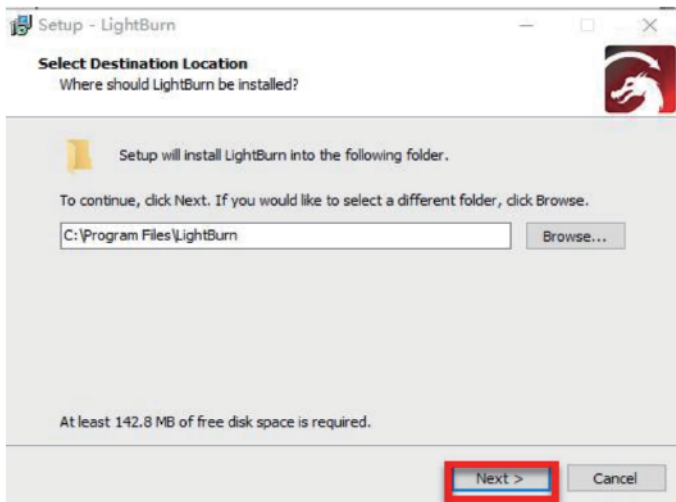
4.2.1 Download the Software

The installation package of LightBurn can be downloaded on its official website:

<https://lightburnsoftware.com/pages/trial-version-try-before-you-buy>.

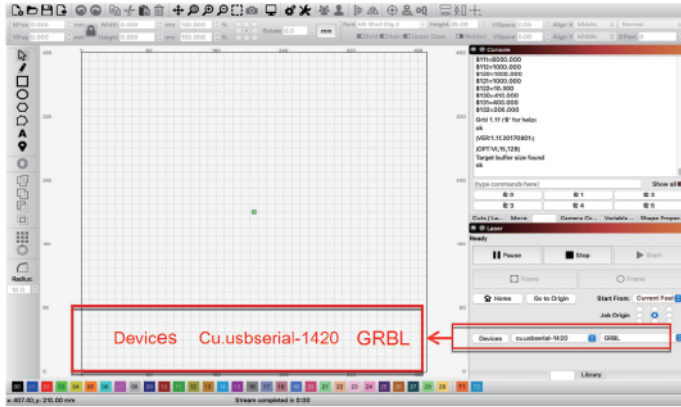
4.2.2 Install LightBurn

Double-click the installation package to install (ps: LightBurn is a paid software. For better experience, it is recommended that you buy the genuine version. Hereby we will demonstrate the installation method of the trial version), click "Next" in the pop-up window.

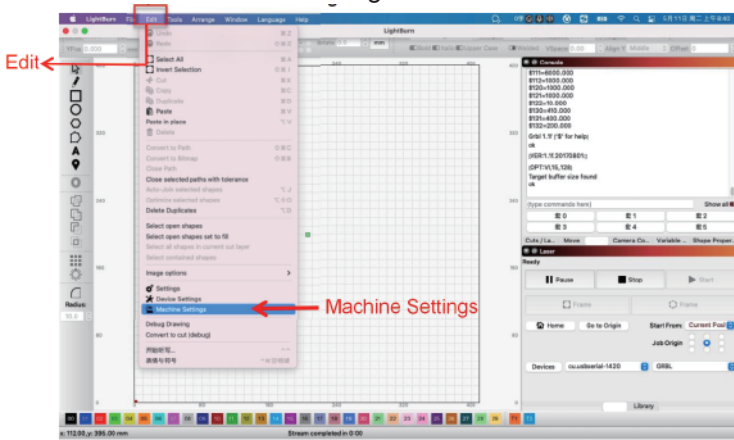


4.2.3 Pulse Adjustment Method of LightBurn Software

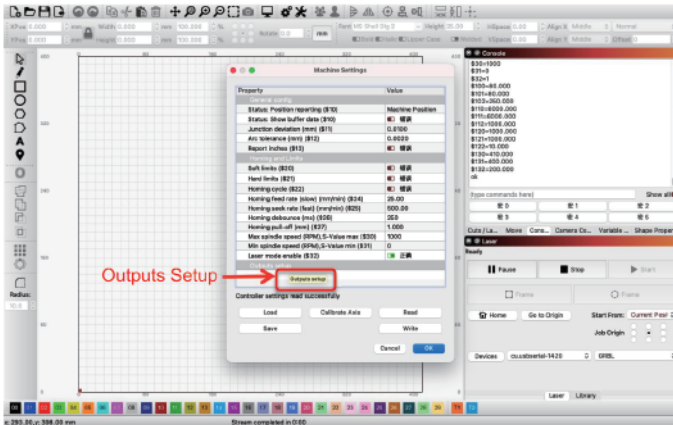
- a. Double-click to open the LightBurn software, and connect the engraving machine to the computer installed with the LightBurn software. When the USB port is displayed in Devices, it means that the connection is successful.



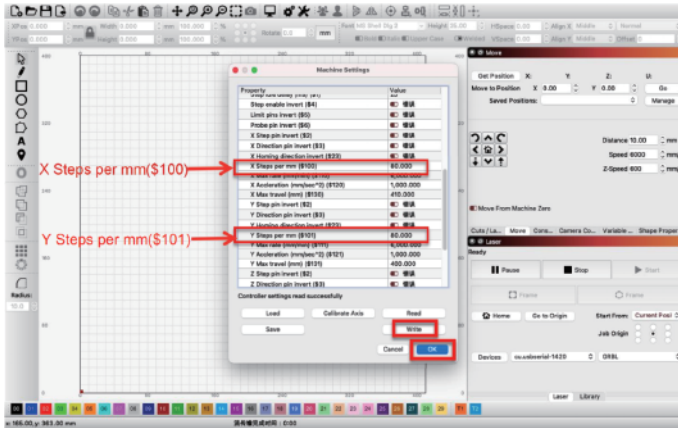
b. Click Edit and select Machine Settings



c. Double-click to open the hidden parameter table in Outputs Setup.



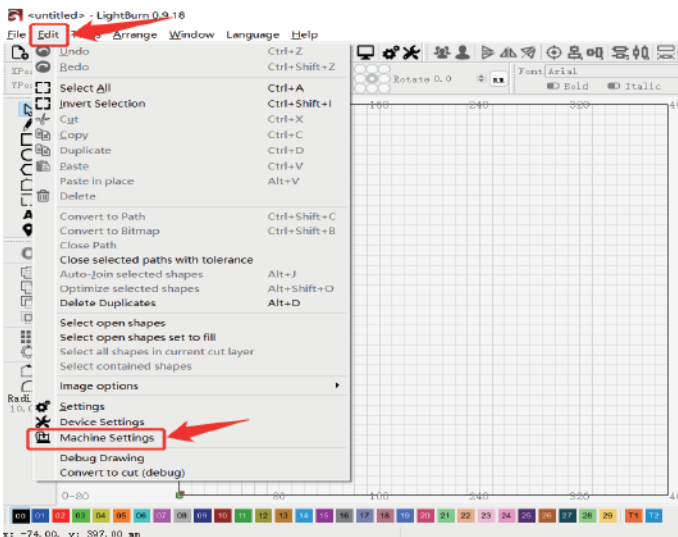
d. Find X Steps per mm (\$100) and Y Steps per mm (\$101), and enter the wanted pulse value in the Value column. (To find the matching pulse value, you can engrave a 30*30mm square and measure whether the side length of the square is 30mm after engraving. If the error does not exceed 1mm, the parameter at this time is the proper pulse value.) Click Write, then click OK to complete the setting.



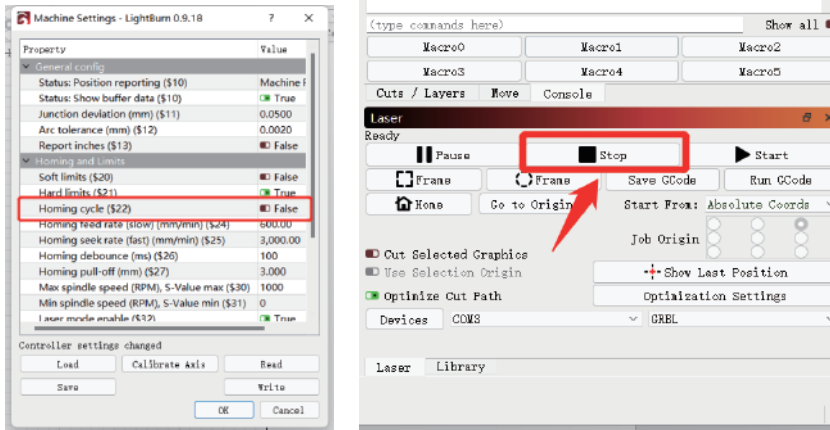
4.3 Tips for Setting up LightBurn with Rotary Roller RR2

If our laser engraving machine returns to the mechanical origin when it is turned on, then some settings need to be made to avoid returning to the mechanical origin when using the RR2 rotary roller.

4.3.1 When LightBurn is connected to the machine, open the Edit on the upper left corner, and then click the Machine Settings.



- 4.3.2 Set the parameter framed in red (when this parameter is True, the machine returns to the origin. When it is False, the machine does not return to the origin). If it is originally True, change it to False, then click OK. Please ignore the page prompt that pops up.
- Turn off the laser engraving machine, and then restart the machine. Click the Stop button to unlock.



If you have not clicked the Stop button to unlock, when you click Frame to walk the track, the machine will show the error message as shown in the figure below, indicating that it is locked. If you forget to click the Stop button, just click it when you see the error message.

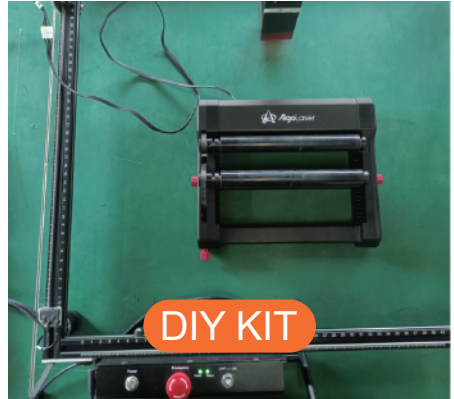
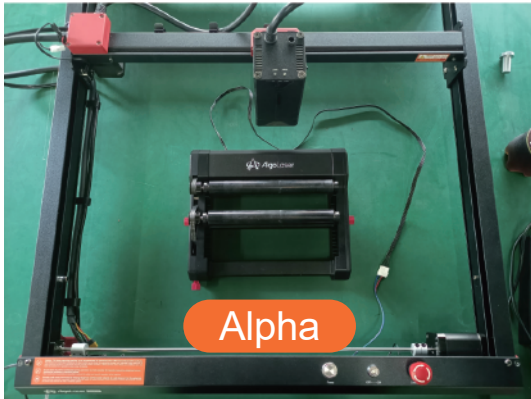
- After clicking the Stop button to unlock, the machine connected with the RR2 Rotary Roller can start engraving.
Note: Since we have prevented the machine from returning back to the origin, we can manually locate the engraving position when using it.
- After engraving with the RR2 rotary roller, the machine cannot return to the mechanical origin as we have revised the configuration of LightBurn. Therefore, in normal use, we should restore the settings. Repeat the previous steps 1 and 2, and change the parameter to True.

5. Installation of RR2 Rotary Roller

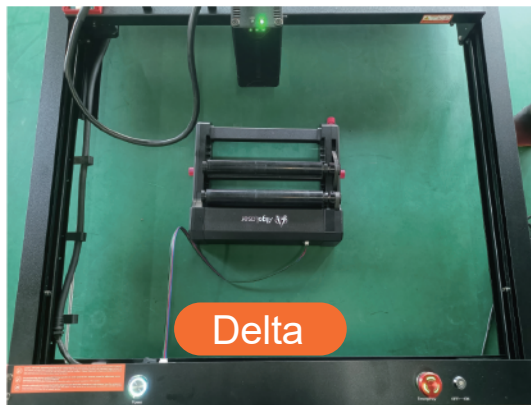
- When the laser engraving machine is used to engrave cylindrical objects and large-width objects with RR2 rotary roller, it is necessary to raise the height of the machine. At this time, height risers should be used to heighten the four feet of the engraving machine according to the actual height of the engraved object. The four feet should be of the same height (such items as four identical water cups and wooden blocks can be used). If it is matched with an engraving machine with adjustable height, there is no need for additional items to raise the height.
- To utilize the RR2 rotary roller with various products, it is necessary to select the corresponding connecting wire. Normally, after select the wire, connect one end of the wire to the Y-axis terminal of the engraving machine, and connect the other end to the RR2 rotating roller.

The RR2 rotary roller is linked to the engraving machine through four cables, wherein two of them are compatible with AlgoLaser's Delta and DIY KIT / Alpha series products. The remaining two cables are configured for other engraving machine brands or special engraving machines that need a customized wiring sequence.

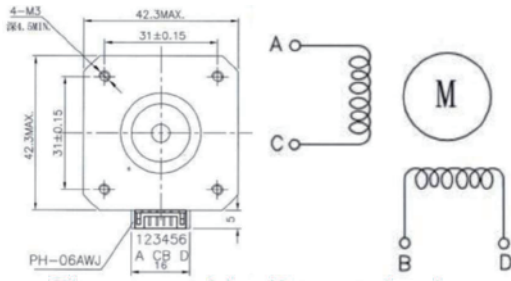
- a. When connecting AlgoLaser Alpha and DIY KIT laser engravers, please pick the "RR2-Alpha/DIY KIT/+" wire.



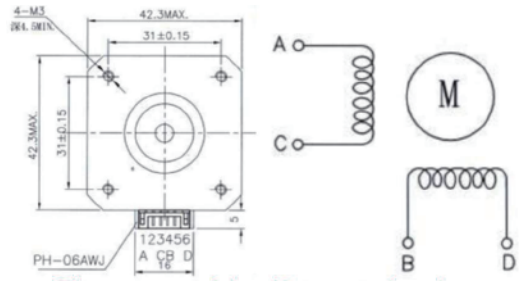
- b. When connecting AlgoLaser Delta laser engraver,, please pick the "RR2-Delta" wire.
NOTE: To ensure that the direction of engraving matches the software preview, please keep the placement of both the RR2 and engraver as picture displayed.



- c. If you plan on using RR2 to adapt to other brands of machines or custom engraving machines that require unique wiring sequences, it is advisable to reach out to the customer service department of the engraving machine to verify the wiring sequence before utilizing it.



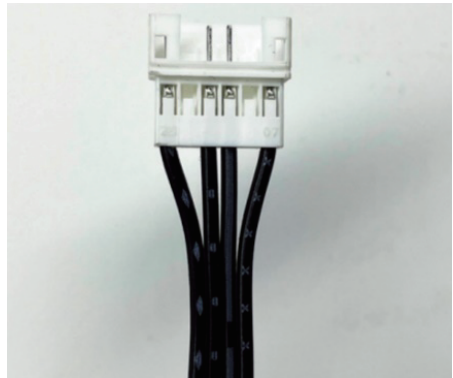
Wire sequence of the white connection wire



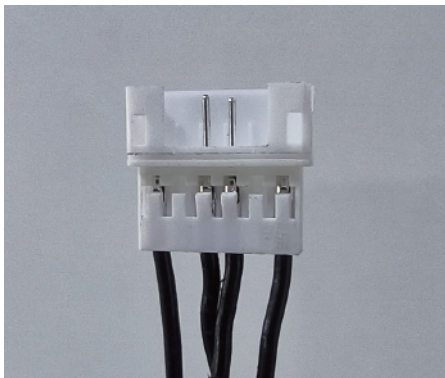
Wire sequence of the black connection wire



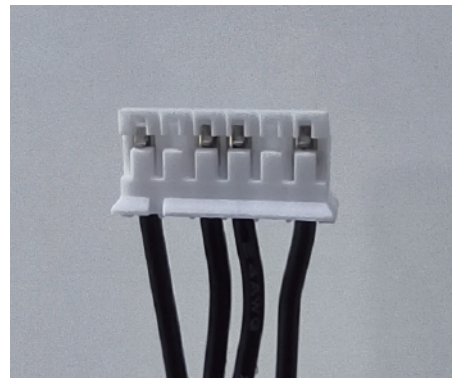
Connect to the engraving machine



Connect to the RR2 rotary roller



Connect to the engraving machine



Connect to the RR2 rotary roller

- If you plan on using RR2 to adapt to other brands of machines or custom engraving machines that require unique wiring sequences, it is advisable to reach out to the customer service department of the engraving machine to verify the wiring sequence before utilizing it.

- The RR2 rotary roller should be kept parallel to the X axis of the engraving machine and vertical to the Y axis, its bottom should be kept at the same horizontal plane as the desktop, and there should be no foreign objects. The bottom of the RR2 has a foot pad with damping function, which makes it stand stable after laying flat.



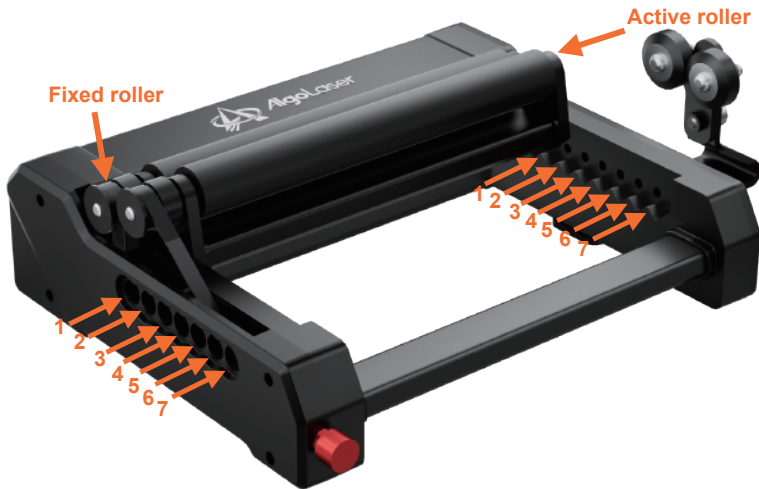
- The RR2 rotary roller has 7 gears. When the engraving machine engraves objects of different sizes, the RR2 rotary roller can adjust the level and position of the gear according to the items in different states.

6. Gear Adjustment Method

- Step 1: Unscrew the hand screws on both sides, and loosen the tension wheel in front.



- Step 2: Pick up the active roller and put it into the corresponding gear. There are 7 gears in total. Below the active roller are the positions corresponding to the 7 gears. When the active roller is put in, it is completely matched with the positions.



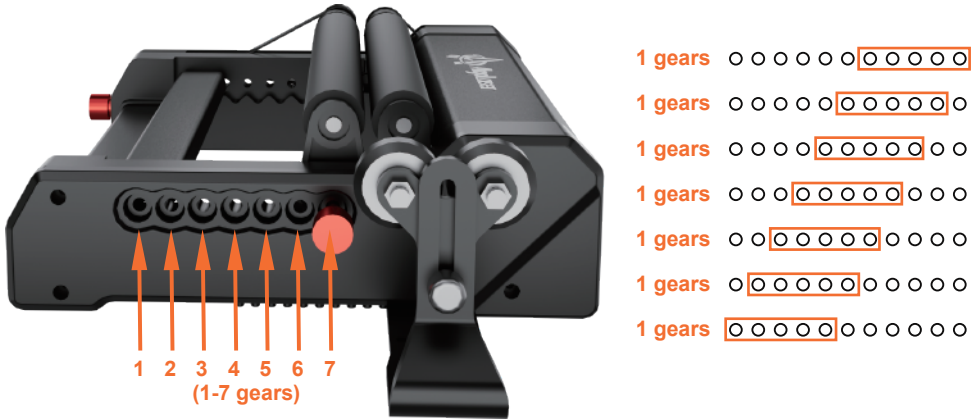
- Step 3: After the active roller is put in, align the hand screws on both sides with the hole below the center point of the active roller and tighten the screws, and tighten the screws of the tensioning wheel. Then it is ready to use.



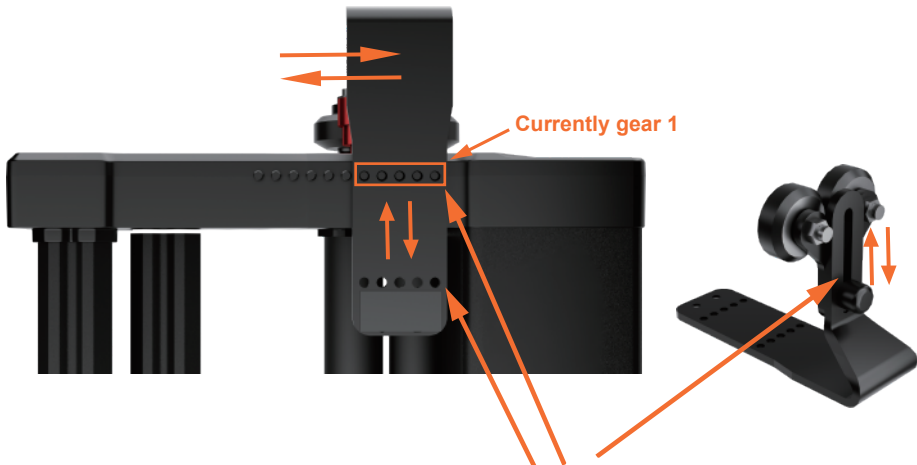
7. Assembly and Adjustment Method of the Side Bracket

- If you need to engrave objects with cylindrical parts, such as goblets, you can attach the two brackets to the two sides of the product. The brackets need to be centered between the two rollers.

The centering method is as follows: There are 5 holes on the horizontal surface of the bracket. When the active roller is in the first gear, the 5 holes on the bracket are aligned with the 5 holes on the far right of the product as demonstrated in the figure below. When the active roller is in the second gear, the bracket moves to the left by one hole, and the rest can be done in the same manner. Please refer to the illustration in the figure below.



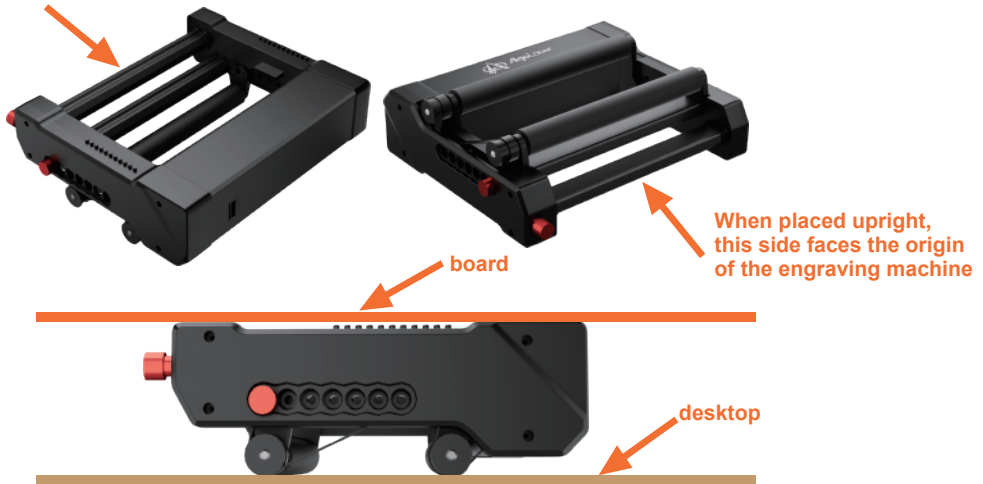
- Align the holes on the bracket to the small columns at the bottom of the machine body, and place it flat on the desktop;
Align the holes to the small columns according to different gears;
The height can be adjusted according to the needs of the engraved objects.



The bracket can be adjusted back and forth, up and down, and horizontally

- If you need to engrave long items, you can put the roller surface of this product on the table (upside down, as shown in the figure), with the tensioner screw facing the origin, and then put the longer board on the product. After ensuring that it is placed stably, you can start engraving. The wire equipped with this product to connect to the engraving machine is 80cm long. With the wire joint of the engraving machine as the center point, the 80cm-long wire can cover a range of 135cm length from top to bottom, so the longest board it can engrave is of 135cm length.

When placed upside down, this side faces the origin of the engraving machine



8. Precautions

- The RR2 rotary roller should be kept away from high-heat environments, such as combustion sources. Otherwise, it will cause thermal deformation, resulting in damage and malfunction.
- To avoid damage, non-professionals should not disassemble the product.
- Avoid severe impact on the roller. Although the RR2 rotating roller has an all-metal structure, please note that impacts exceeding the allowable range can still cause damage to the motor as well as the outward material of the RR2 rotary roller.
- The RR2 rotary roller should be kept away from various kinds of chemicals. Once it is exposed to chemicals, it should be cleaned in time.
- Avoid splashing water into the roller, otherwise it may cause damage to the motor and the roller cannot be used.
- Since the motor is magnetic, it is necessary to keep it away from strong magnetic fields. For example, placing it next to electrical appliances or magnetic objects that generate magnetic fields may cause the motor to temporarily stop or rotate at an uneven speed.

9. Item List



RR2 Rotating Roller × 1



Side Bracket × 1



User Manual × 1



Certificate × 3



After-sale Cards × 1



2.0mm L-shaped hexagonal wrench × 1

7 RR2-Delta connection wire (length 650mm) × 1

8 RR2-Alpha/DIY KIT/+ connection wire (length 650mm) × 1

9 RR2-/+ connection wire (length 650mm) × 1

10 Customizable connection wire (length 650mm) × 1

11 Customizable connection wire 6 pin connector × 1



MADE IN CHINA

<https://algolaser.com/support/>