

User Manual for Multi-Functional Rotary Attachment

多功能旋转夹具使用指导书

What is a Rotary Attachment:


什么是旋转夹具:


“旋转夹具”又称“旋转轴”（Rotary），是设计用来雕刻圆柱体或环形工件的。激光雕刻机只具备在 XY 平面雕刻的功能，使用此设备可以使机器具备在圆形物体表面雕刻的能力，比如马克杯、玻璃杯、红酒瓶、tumblers 杯、可乐罐或其他类似物品。

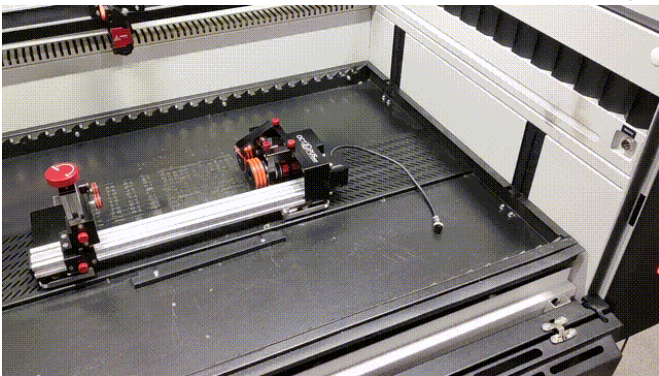
The "Rotary Attachment," also known as a "Rotary Axis," is designed to engrave cylindrical or ring-shaped objects. Laser engraving machines are generally capable of engraving only on the XY plane. By using this device, the machine gains the ability to engrave on the surface of round objects, such as mugs, glasses, wine bottles, tumblers, soda cans, or similar items.

Setting Up the Rotary Axis:

设置旋转轴:

1. 打开机器电源并等待机器复位，然后按  键将升降台降至最底部。（对于旋转轴接口在升降台下方的机型，需先连接好旋转轴线再下降平台。
2. 打开机器上盖并取出蜂窝板与刀条，将升降平台内的切割废料清理干净，将旋转轴的电机朝右放置于升降平台中间位置并确保旋转轴放置平稳无晃动。
3. 将旋转轴电机的航插线与连接线的 DX12 接头连接，连接线的 DX16 接头与机器接口连接。MIRA5S 的接口在工作区域的左后方，MIRA7S/9S 在右侧灯条板上。

1. Power on the machine and wait for it to reset. Then, press the  button on the control panel to lower the lifting table to its lowest position. (For models where the rotary axis interface is beneath the lifting table, connect the rotary axis cable before lowering the platform).
2. Open the machine's top cover, remove the honeycomb table and blade strip, and clean out any cutting debris from the lifting platform. Place the rotary axis with the motor facing right in the center of the lifting platform, ensuring it is stable and does not wobble.
3. Attach the rotary axis motor's aviation connector to the cable with a DX12 plug. Then, connect the cable's DX16 plug to the machine's interface. For MIRA5S, the interface is located at the back-left corner of the work area, for MIRA7S/MIRA9S, the interface is located on the right-side light bar panel.

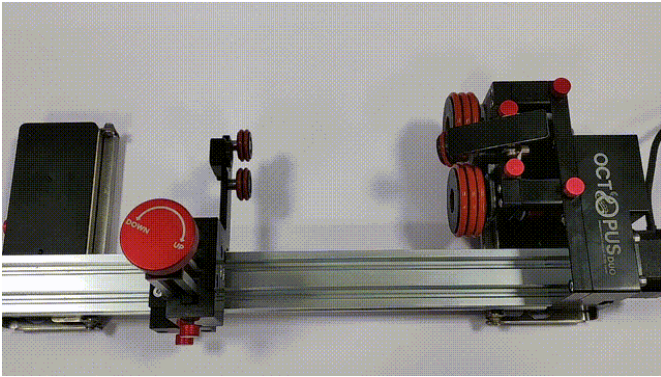


How to Mount a Workpiece:

如何装夹工件:

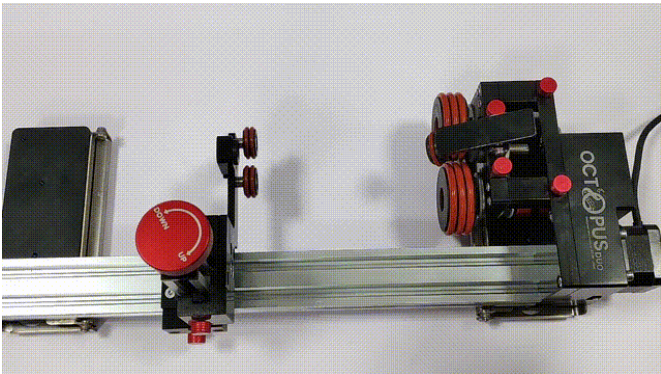
压下夹子并插入工件，然后调整左侧升降模组支撑住工件。将水平仪放置在工件上，然后调整升降模组让水平仪成水平状态，锁紧升降模组的手拧螺丝。

Press down the clamp and insert the workpiece. Adjust the left-side lifting module to support the workpiece properly. Place a level tool on the workpiece and adjust the lifting module until the level tool indicates a horizontal position. Tighten the hand-screw on the lifting module to secure it in place



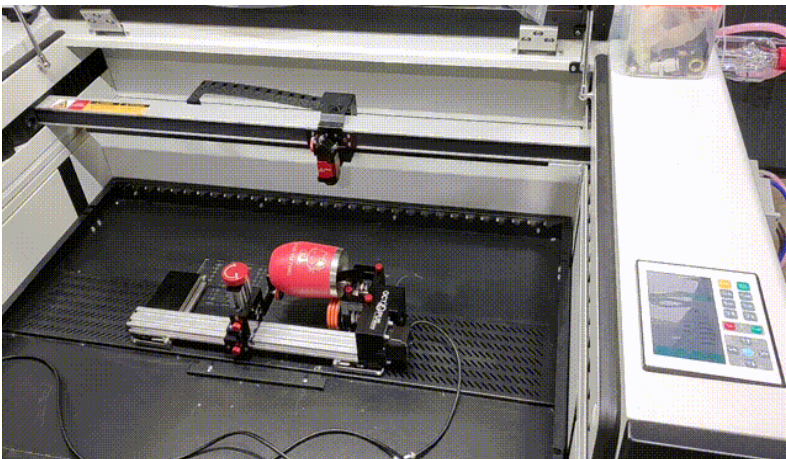
如果需加工实心物体，可先松开夹子手拧螺丝取下夹子，然后将工件放置在滚轮上并调节水平。

If you need to process solid objects, first loosen the clamp's hand screw and remove the clamp. Then, place the workpiece on the rollers and adjust it to a level position



通过控制面板的移动按键移动激光头到工件上方，执行自动聚焦。

Use the movement keys on the control panel to position the laser head above the workpiece and perform auto-focus



Set the rotation parameters via software or the control panel:

通过软件或控制面板设置旋转的参数:

对于滚轮模组有两个关键参数，一个是 Steps per Rotation（在 lightburn 中）或 Circle Pulse（在 RDworks V8 中），无论哪种方式，它都表示旋转一整圈所需的电机步数。它在 Redline MIRAS 机器上是固定值，数值为 46080。如果此值不正确，那么输出的结果会产生扭曲或变形。对于其他系列机型，可参考《夹具对应脉冲和直径》进行设置。




另一个关键参数是 “Diameter”。对于滚轮模组，指代的是旋转滚轮的直径，它的值是 53 mm。




在有了这两个参数后，我们将向您展示如何在控制面板、Lightburn 和 Reworks V8 中进行设置。

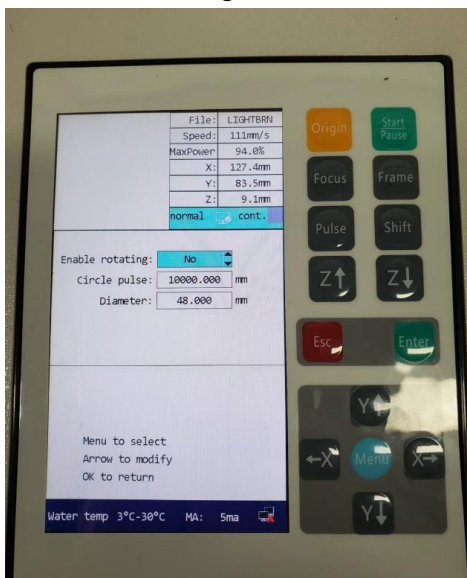
For the roller module, there are two key parameters. One is Steps per Rotation (in LightBurn) or Circle Pulse (in RDWorks V8). Regardless of the method, it represents the number of motor steps required for one full rotation. On the Redline MIRA S machines, this value is fixed at 46080. If this value is incorrect, the output may be distorted or deformed. For other machine series, refer to <The Fixture Pulse and Diameter Guide> for proper configuration. The other key parameter is Diameter, which refers to the diameter of the rotation rollers in the roller module. The value for this is 53mm. With these two parameters, we will demonstrate you on how to configure them in the control panel, LightBurn, and RDWorks V8.


Setting Parameters on the Control Panel:


在控制面板上设置参数:

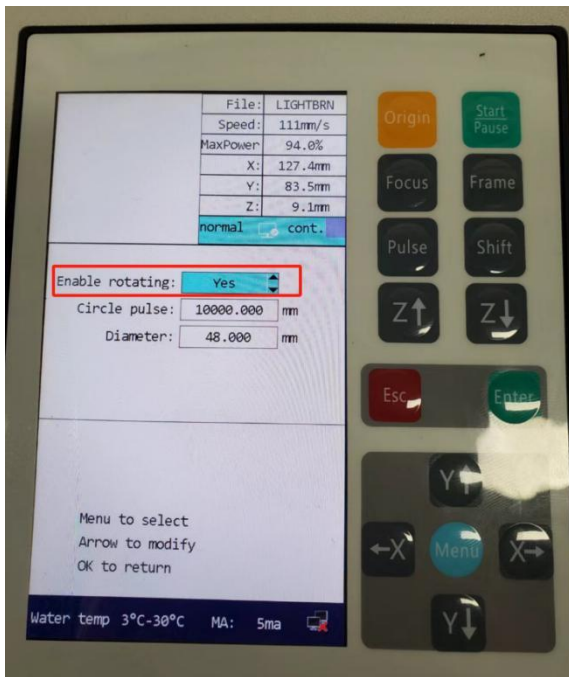
按下  按键，然后按  键将光标移动到 Rotating>，按下  键进入旋转设置界面。

Press the  button, then use the  keys to navigate the cursor to Rotating>. Press the  button to access the rotation settings interface.
























光标位于 Enable Rotating 选项上，默认值为 “No”，按下  键将其更改为 “Yes”此时旋转轴功能已启用。

The cursor will be positioned on the Enable Rotating option, which is set to "No" by default. Press the  button to change it to "Yes". At this point, the rotary axis function is enabled.










接着我们将默认的 Circle Pulse 从 10000 更改为 46080，并将直径从 48 调整到 53。


按下  键移动到下一个参数，然后按下  键光标将在输入框内移动，将光标移动到第左起一个数字（万位）下方，按  键将数字调整到 4。然后按  键将光标移动到左起第二个数字（千位）下方，按  键将数字修改为 6。然后按  键将光标移动到左起第四个数字（十位）下方，按  键将数字修改为 8。然后按  键将光标移动到 Diameter 参数，按  键将光标移动到左起第一个数字（十位）下方，按  键将数字修改为 5。然后按  键将光标移动到左起第二个数字（个位）下方，按  键将数字修改为 6。全部完成后按  键保存设置，然后按  键返回引导界面。

Next, we will change the default Circle Pulse from 10000 to 46080 and adjust the Diameter from 48 to 53. Press the  key to move to the next parameter, then press  to move the cursor into the input field. Move the cursor to the first digit (ten-thousands place) on the left, press the  to adjust the number to 4. Then press  to move the cursor to the second digit (thousands place) on the left, press  to change the number to 6. Next, press  to move the cursor to the fourth digit (tens place) on the left, press  to modify the number to 8.

AEON Laser Technology Co., Ltd


Then press  to move to the Diameter parameter, press  to move the cursor to the first digit (tens place) on the left, press  to change the number to 5. Then press  to move the cursor to the second digit (ones place) on the left, press  to change the number to 6. Once all modifications are completed, press  to save the settings, then press  to return to the main menu.



注意: 许多用户在使用后忘记退出旋转模式，导致激光在切换回平面雕刻时仅在 X 轴上移动。使用旋转后，请记得禁用它：导航到控制面板上的 Rotary 设置，将“Enabl rotating”设置为“No”，然后按  确认。

Notice: Many users forget to exit the rotary mode after use, which causes the laser to only move on the X-axis when switching back to flatbed engraving.

After using the rotary, please remember to disable it: navigate to the Rotary settings on the control panel, set

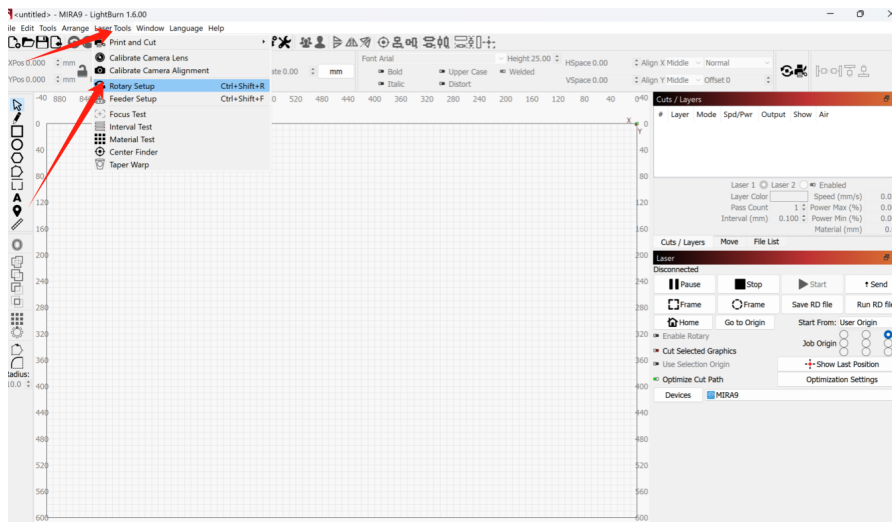
"Enable Rotating" to "No," and then press  to confirm.

Setting parameters in Lightburn:

在“Lightburn”里设置参数:

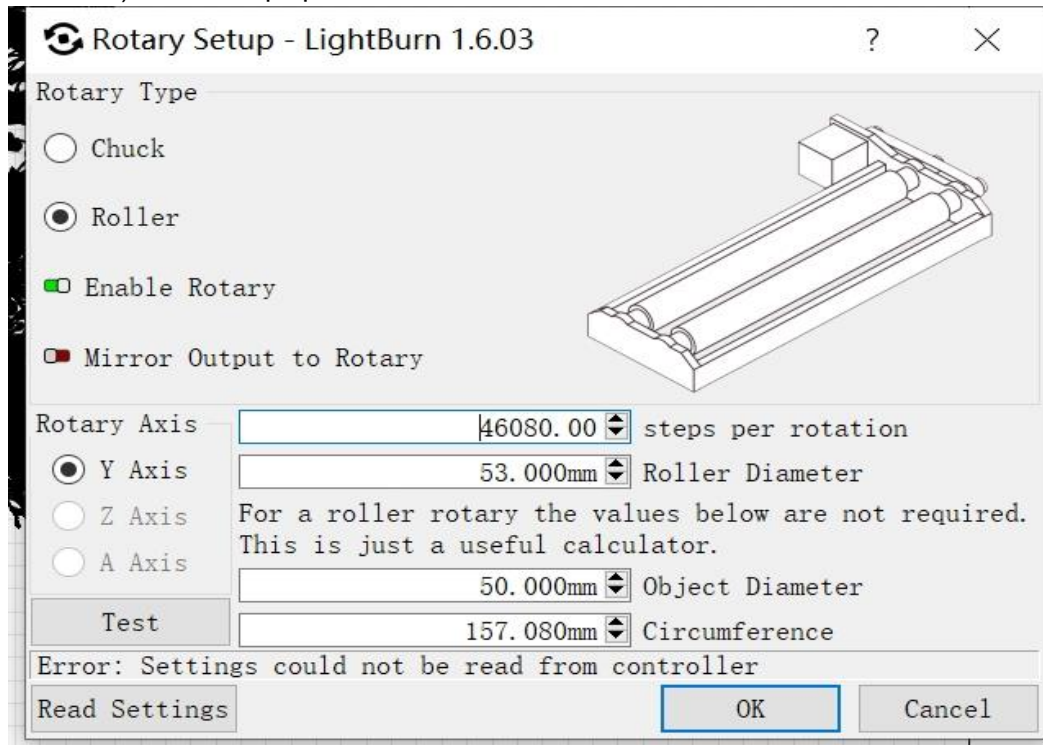
打开 lightburn 软件，在顶部选项卡中点击 Laser Tools，在下拉菜单中选择 Rotary Setup。

Open the Lightburn software, click Laser Tools in the top menu, and select Rotary Setup from the drop-down menu



在 Rotart Type 一栏中选择“Roller”,然后点选 Enable Rotary 按钮（此按钮在激活时会显示绿色）。在 Steps per Rotate 一栏输入 46080，在 Roller Diameter 一栏输入 53，点击 OK。

In the Rotary Type section, select "Roller," then click the Enable Rotary button (this button will turn green when activated). In the Steps per Rotate section enter 46080, and in the Roller Diameter section, enter 53. Click OK.



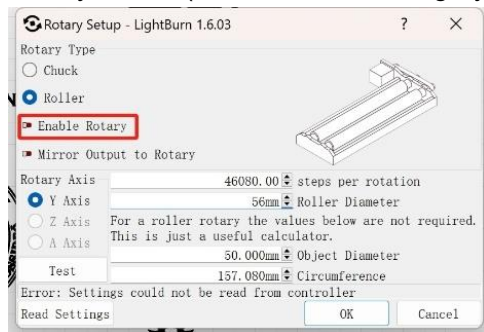
此时旋转轴功能已激活并且参数已设置完成。

At this point, the rotary function is activated, and the parameters are set.

AEON Laser Technology Co., Ltd

如果您想返回平面雕刻模式。只需返回 Rotary 设置页面，然后单击 Enable Rotary 按钮（禁用后该按钮将变为灰色）

If you want to return to flat engraving mode, simply go back to the Rotary Settings page and click the Enable Rotary button (this button will turn gray when disabled).

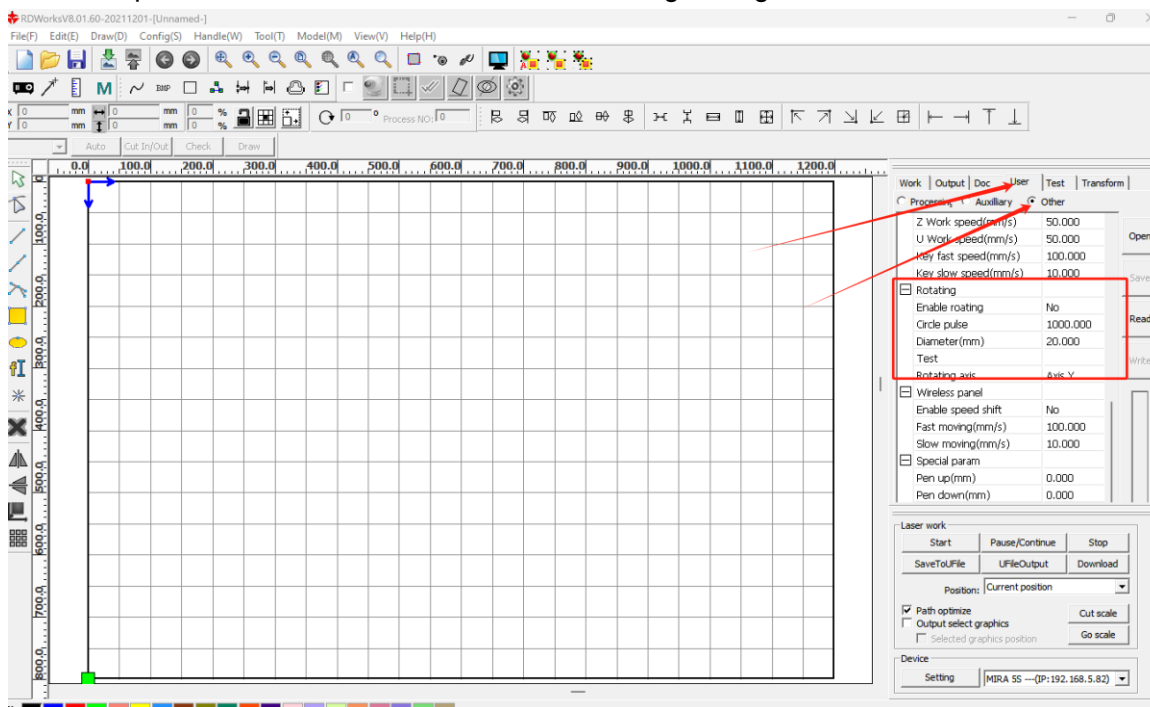


In RDWorks V8, set the parameters as follows:

在 RD WorksV8 中设置参数:

打开 RDworks V8。单击右列上的“User”选项卡，然后选择“Other”，点击右侧 Read 读取板卡参数。然后向下滚动以找到“Rotating”设置。

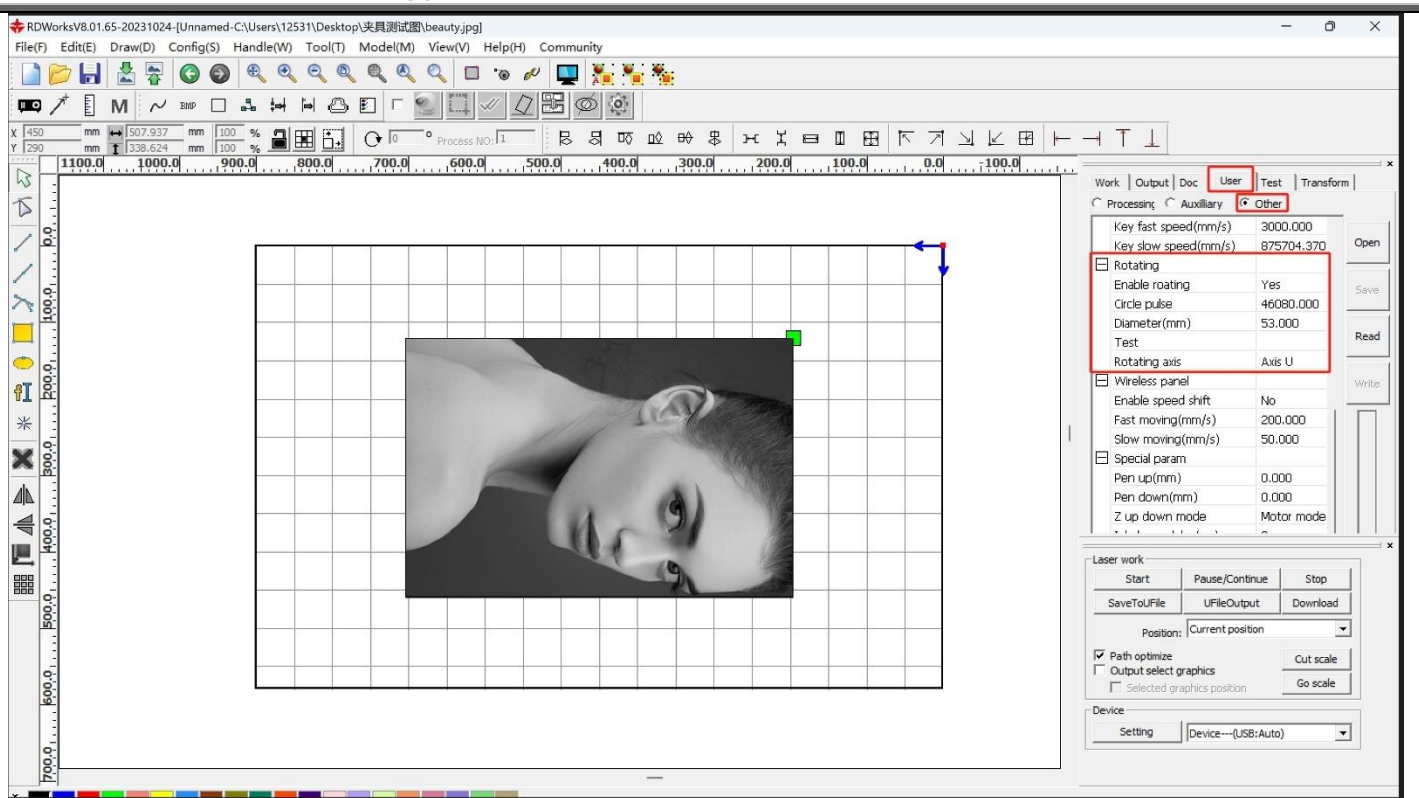
Open RDWorks V8. Click the User tab on the right column, then select Other, and click Read on the right to read the board parameters. Scroll down to find the Rotating settings.



单击以将 Enable Rotating 更改为 “Yes” ，在 Circle Pulse 中输入 46080 ，在 Diameter 中输入 53。然后，选择 Rotating axis 为 “Axis U” 。点击 “Write” 键保存参数至板卡。

Click to change Enable Rotating to "Yes," enter 46080 in Circle Pulse, and 53 in Diameter. Then, select Rotating axis as "Axis U." Click Write to save the parameters to the board.

AEON Laser Technology Co., Ltd



(需要确定 RDWorks 退出旋转雕刻需不需要 Reset 机器)---不需要，在 RD 软件内写参数即可。

如果您想返回平面雕刻模式，请将软件中 Enable Rotating 设置为 “No” 并写入板卡。

(Need to confirm if resetting the machine is necessary when exiting rotary engraving in RDWorks) — No, it's not necessary, just write the parameters in the RD software.

If you want to return to flat engraving mode, set Enable Rotating to "No" in the software and write it to the board

prepare the file for engraving:

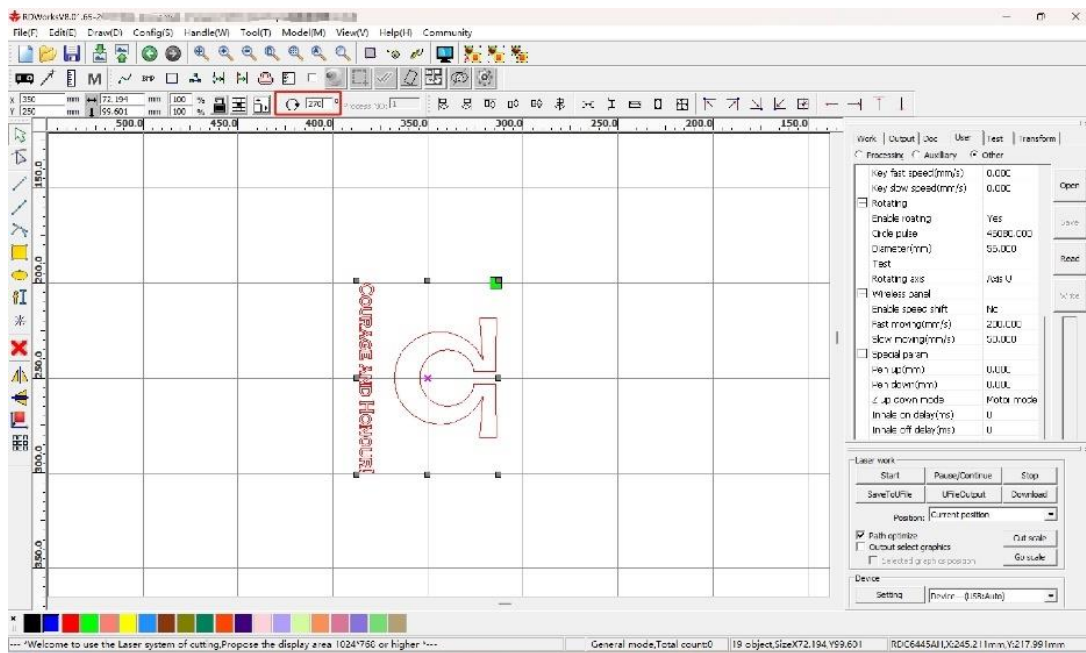
准备用于雕刻的文件:

现在您已经准备好进行旋转雕刻并设置好了参数，您可以为您的作业创建一个雕刻文件。在旋转模式下，文件的总长度表示产品上的弧长。如果您希望进行整圈雕刻，此长度应等于产品的周长。

在 Rdworks 中，您可以通过在顶部工具栏上输入值来将设计旋转 270 度。(软件显示方向与实物摆放方向一致)

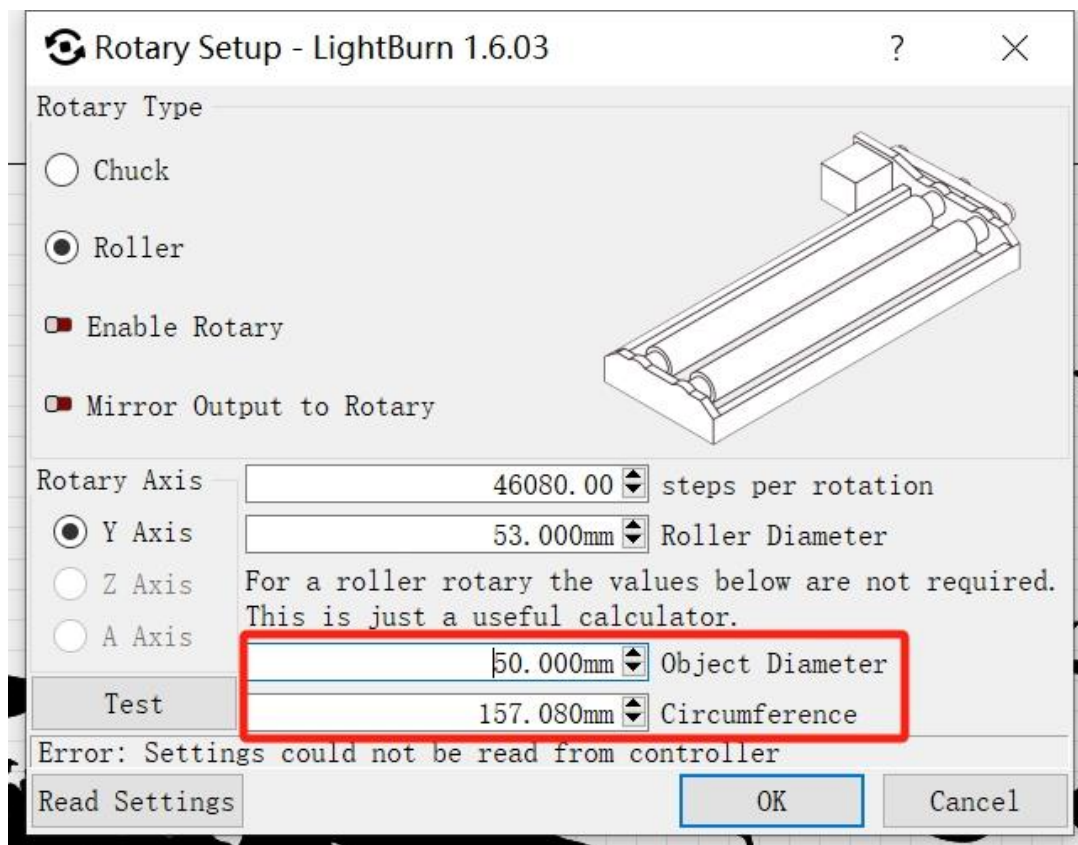
Now that you are ready for rotary engraving and have set up the parameters, you can create an engraving file for your job. In rotary mode, the total length of the file represents the arc length on the product. If you want to engrave a full circle, this length should be equal to the product's circumference.

In RDWorks, you can rotate the design by 270 degrees by entering the value in the top toolbar. (The software display direction will match the actual orientation of the object.)



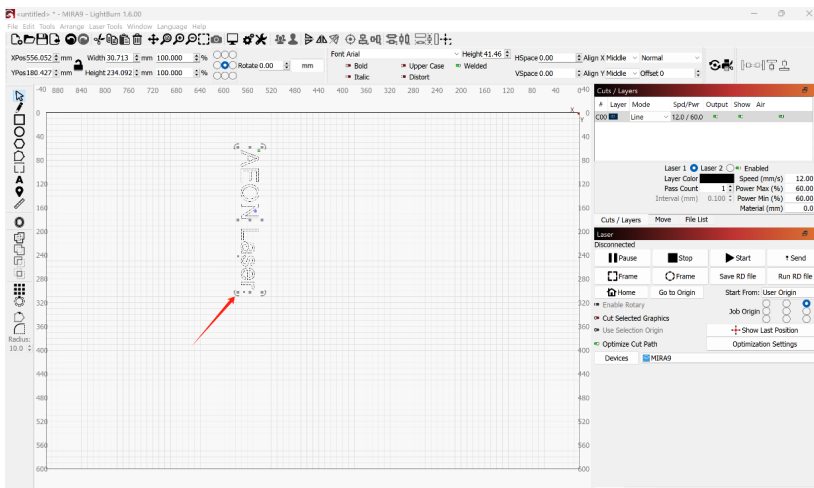
在 lightburn 中，您可以测量产品的直径并将其输入到设置页面，它可以自动计算周长。

In Lightburn, you can measure the diameter of the product and input it on the settings page, which will automatically calculate the circumference



你可以通过旋转设计的手柄来旋转设计或直接输入角度。




You can rotate the design by using the design's rotation handle or by directly entering the angle.



接下来设置雕刻速度、扫描间隔和功率，将文件导入机器并确保激光已聚焦，然后按  键来设置起始点。按

 预览作业，然后按  键开始作业。

Next, set the engraving speed, scan interval, and power, then import the file into the machine and ensure the

laser is focused. Press  to set the starting point. Press  preview to check the job, then press  to start the job.

How to use the "Chuck Module":

如何使用“卡盘模组”：

“卡盘模组”是设计用于更广泛的物体，这些物体既有圆柱形也有不规则的形状。除了杯子、玻璃杯、酒瓶、玻璃杯、可乐罐或其他类似物品等一些圆柱形物品外，它还可以用于红酒杯、锥形杯、带把手的不倒翁等

The "Chuck Module" is designed for a wider range of objects, both cylindrical and irregularly shaped. In addition to cylindrical items like cups, glass mugs, wine bottles, glassware, soda cans, or similar items, it can also be used for wine glasses, tapered cups, and tumblers with handles.

Overview of the chuck rotary.

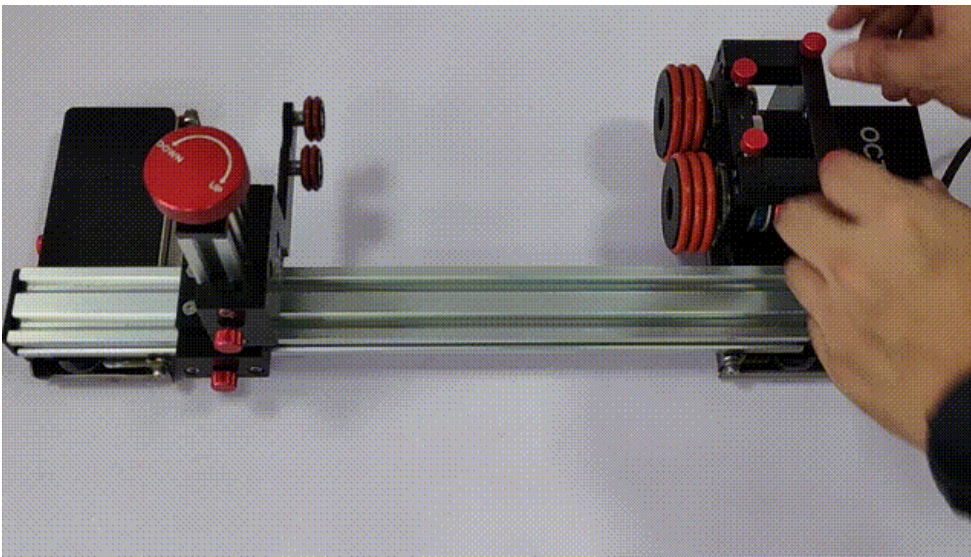


To switch to the "Chuck Module":

切换“卡盘模组”：

1. 松开联轴器螺丝（只要拧松即可，不需要全部取出），松开两颗手拧螺丝，取出滚轮模组。
2. 插入“卡盘模组”（注意调整联轴器螺丝使其外露），锁紧联轴器螺丝，拧紧手拧螺丝。
3. 松开升降模组导轮的三颗螺丝，换上卡盘模组的导轮。

1. Loosen the coupling screw (just unscrew it slightly, no need to remove it completely), then loosen the two hand screws and remove the roller module.
2. Insert the "Chuck Module" (ensure to adjust the coupling screw so that it is exposed), tighten the coupling screw, and screw in the hand screws.
3. Loosen the three screws on the lifting module's guide wheel and replace them with the guide wheels for the Chuck Module.

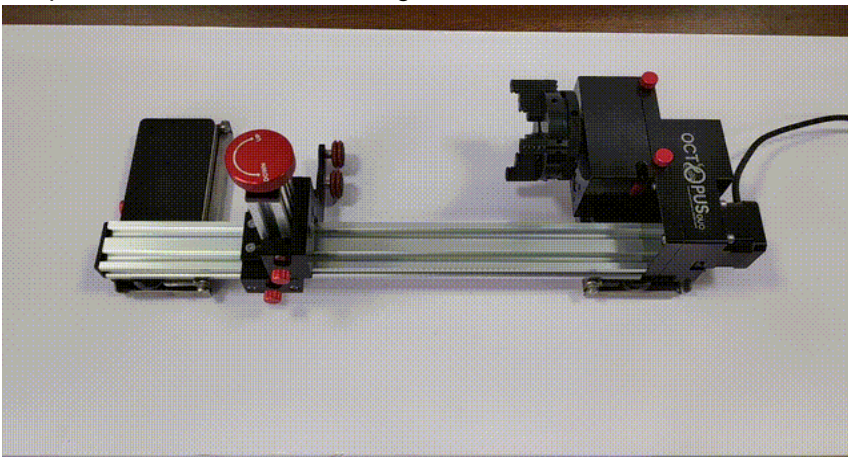


Adjusting the Chuck:

调整夹具：

一只手抓住卡盘前端，另一只手旋转后端来调节松紧。顺时针夹紧，逆时针松开。当用手夹持好物品后可通过附带的扳手进一步夹紧或放松。

Hold the front end of the chuck with one hand while rotating the rear end with the other hand to adjust the tightness. Turn clockwise to tighten and counterclockwise to loosen. Once the item is securely gripped by hand, you can use the provided wrench to further tighten or loosen it.



Switching the Chuck's Jaws:

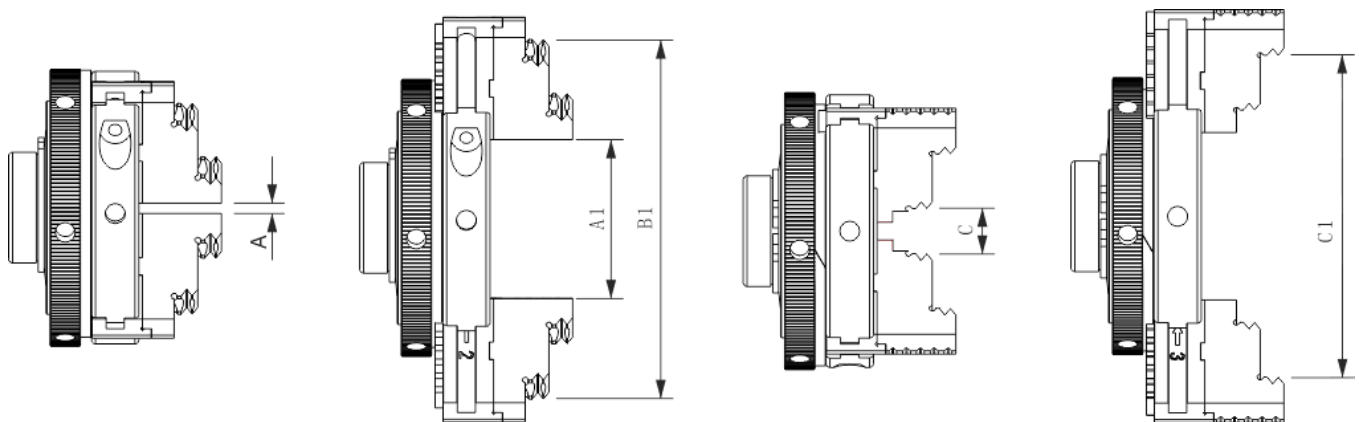
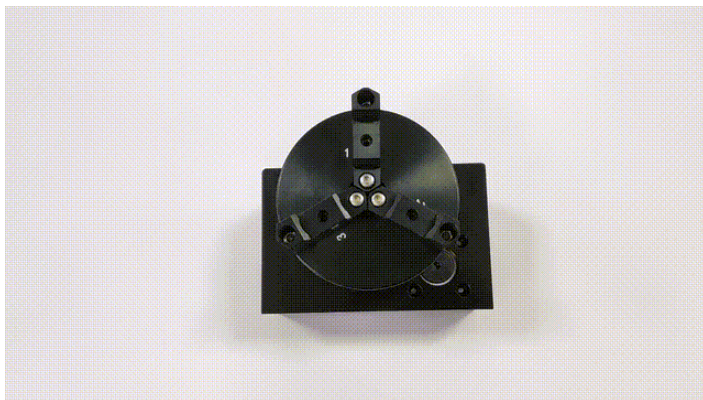
更换卡盘的不同钳口:

卡盘包括两种类型的钳口：预装的内钳口，可支撑内径达 24-100 毫米的物体或夹住外径 46 毫米以下的物体。外钳口设计用于夹紧直径 22-100 毫米的物体。

要切换两种类型钳口，使用 2.5mm 六角扳手，松开每个钳口上的两颗 M3 螺丝然后将钳口旋转 180° 再安装回去即可。

The chuck includes two types of jaws, First is Inner jaws(preinstalled), Support objects with an internal diameter of 24-100mm or grip external diameters of up to 46mm. Second is Outer jaws, Designed for clamping objects with diameters ranging from 22-100mm.

To switch between the two types of jaws, Use a 2.5mm hex wrench to loosen the two M3 screws on each jaw. Rotate the jaw 180° and reinstall it.



卡盘夹持范围		
正爪 Inside jaw		反爪 Outside jaw
夹紧范围 clamp diameter	撑紧范围 support diameter	夹紧范围 clamp diameter
A-A1	B-B1	C-C1
2-46	24-100	22-100

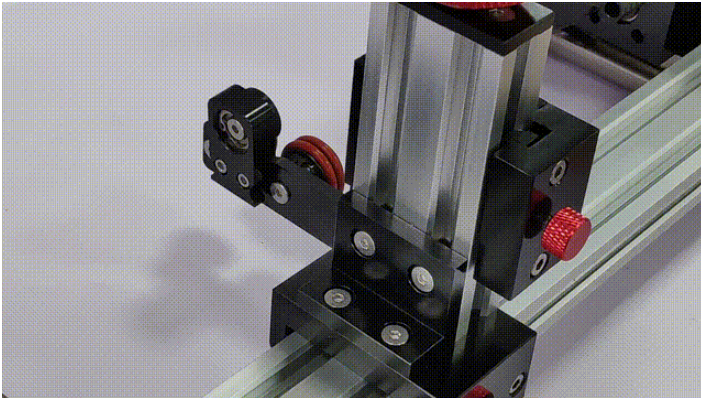
Replacing the Tailstock Center:

更换不同的尾座中心:

标准的尾座可在雕刻一般的水杯或酒瓶时对尾部进行支撑以使旋转更稳定。但当需要雕刻超长物体时（如棒球棍）可将尾座拆下使用（需机器幅面支持）。

The standard tailstock provides support for the rear of items like regular water glass or wine bottles, ensuring more stable rotation.

However, when engraving extra-long items (e.g., baseball bats), the tailstock can be removed (if supported by the machine's working area).

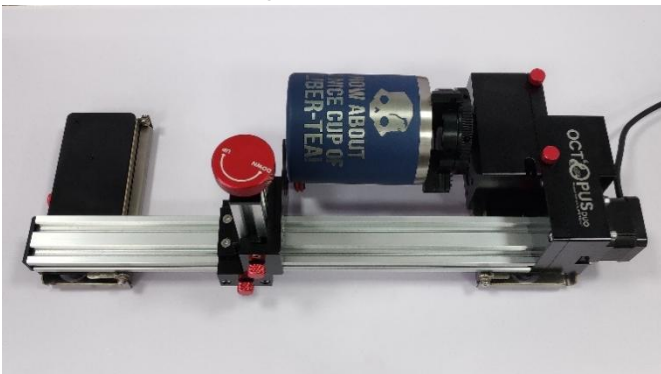


Illustrations of Different Product Clamping Methods:

夹紧产品的不同方法的图示:

内钳口撑紧

Inner Jaws Expanding



内钳口夹紧

Inner Jaws Clamping



Outer Jaws Clamping

外钳口夹紧

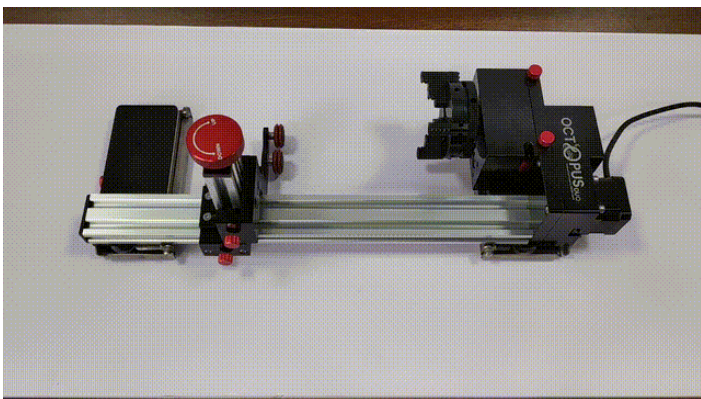


Next, We will demonstrate how to clamp cylindrical products using the outer jaws:

接下来，我们向您展示如何通过外钳口夹紧圆柱形产品：

用手将钳口松开至略大于产品的直径，将产品插入卡盘，用另一只手握住，然后小心地拧紧卡盘。在感到阻力后用附带的扳手上紧，请勿过度拧紧以免损坏产品。

Loosen the jaws by hand until they are slightly wider than the product's diameter. Insert the product into the chuck and hold it with one hand. Carefully tighten the chuck using the other hand. When resistance is felt, use the provided wrench to secure the grip. Do not overtighten to avoid damaging the product.



Tailstock Elevation Module:

尾部调高模组：

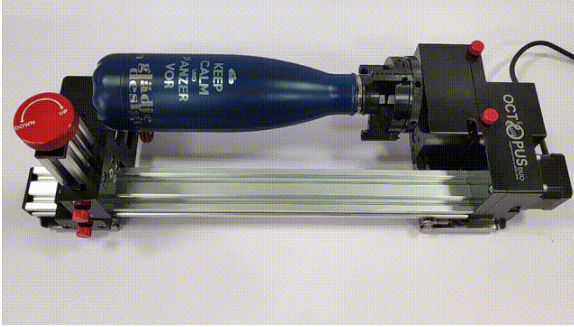
在使用卡盘式夹具使如果想在锥形表面进行雕刻，通常的做法是将夹具一端整体垫高使锥形面保持水平来达到雕刻目的。针对此场景下的使用，本夹具配备了一套尾部调高模组，可将夹具一端整体升高最多 50mm。

使用时先将待雕刻工件装夹好，然后用一只手拖住夹具使重量落在这只手上，另一只手旋转调节旋钮直至水平尺水平，然后移动激光头执行自动聚焦即可开始雕刻。

When using the chuck to engrave tapered surfaces, the standard method is to elevate one side of the fixture to ensure the tapered surface remains level for engraving.

To accommodate this scenario, the fixture includes a tailstock elevation module that can raise one end of the fixture by up to 50mm.

Put the workpiece in the chuck, Support the fixture's weight with one hand while turning the adjustment knob with the other hand. Rotate the knob until the leveling tool shows the surface is level. Move the laser head to perform auto-focusing, then begin engraving.



Key Parameters for the Chuck Module:

卡盘模组有两个关键参数:

1. Steps per Rotation (在 LightBurn 中) 或 Circle Pulse (在 RDWorks 中), 它表示电机转动一圈所需的电机步数。对于 Redline MIRA S 机器, 此值为 46080。不正确的设置可能会导致输出失真或断开连接。

2. 产品直径: 指用户测量的产品真实直径



1. Steps per Rotation (in LightBurn) or Circle Pulse (in RDWorks): This refers to the number of motor steps required for one full rotation. For Redline MIRA S machines, the value is 46080. Incorrect settings may lead to distortions or disconnections in the output.

2. Product Diameter, The actual diameter of the product, measured by the user.



Setting Parameters on the Control Panel:

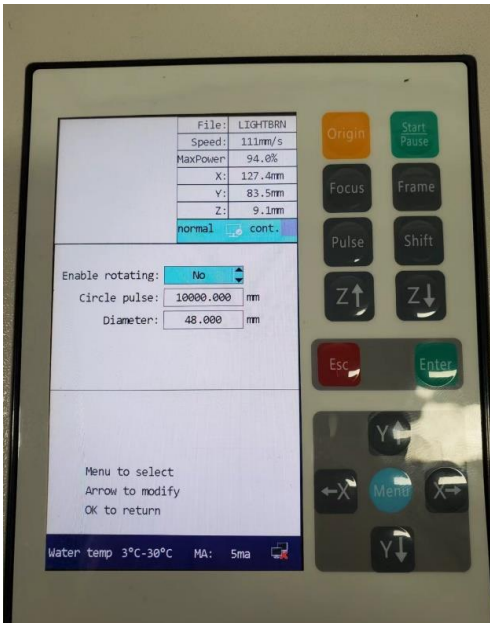
在控制面板上设置参数:


首先, 用尺子或卡尺测量您要雕刻的产品的直径。此处, 我们测量的产品直径为 42mm。


按  键, 然后将光标移动到 Rotating>, 按  键进入旋转设置界面:

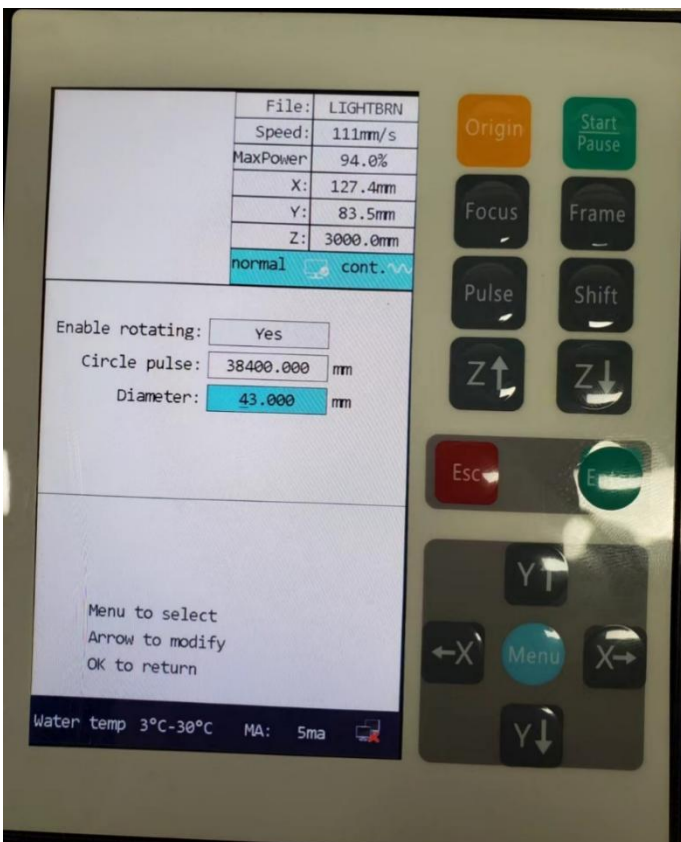
Use a ruler or caliper to measure the diameter of the product you intend to engrave. For this example, the

measured product diameter is 42mm. Press the , then move the cursor to Rotating>, and press the  to enter the rotation settings interface:



光标位于 Enable Rotating 选项上，默认值为 “No” 。按  键改为 “Yes” ，此时旋转功能已启用。



The cursor is positioned on the Enable Rotating option, with the default value set to "No". Press  key to change it to "Yes", enabling the rotation function.








接着我们将把 Circle pulse 改为 46080，将 Diameter 修改为 42。

AEON Laser Technology Co., Ltd


按  键可使光标在每个参数框内移动，然后按  和  键光标将在数字每一位下面移动。接着我们将把 Circle pulse 改为 46080，将 Diameter 修改为 42。


全部完成后按  键保存设置，然后按  键返回引导界面。


Next, we will change the Circle Pulse to 46080 and the Diameter to 42. Press  to move the cursor within each parameter box, then use  and  to navigate between individual digits. Then adjust the Circle Pulse to 46080.

Adjust the Diameter to 42. Once all adjustments are complete, press  to save the settings. Finally, press  to go back to the main menu.







注意: 许多用户在使用后忘记退出旋转模式，导致激光在切换回平面雕刻时仅在 X 轴上移动。使用旋转后，请记住禁用它：导航到控制面板上的 Rotating> ，将“Enable Rotating”设置为“No”，按  键确认。

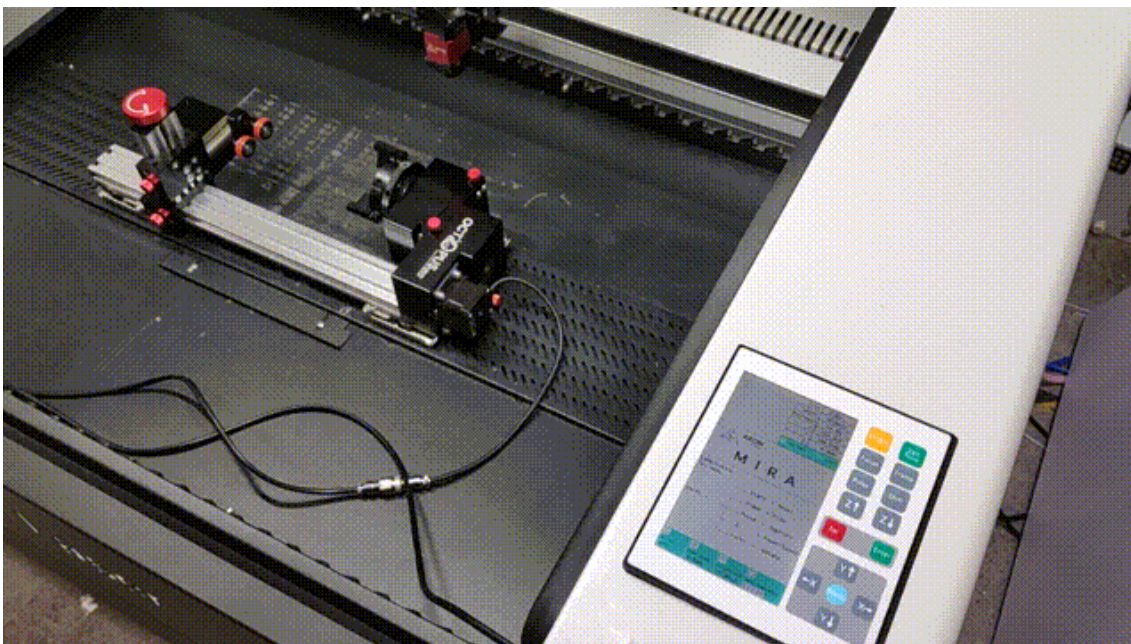
对于新款的机器，如果希望通过面板控制旋转轴旋转，可按  +  键实现（需机器有 U 轴驱动且面板版本在 HMI-V10.10.38.19 以上）。查询面板版本号可按  +  执行复位来查看。

Notice: Many users forget to exit the rotary mode after use, resulting in the laser moving only along the X-axis when switching back to flat engraving. After using the rotary, please remember to disable it: navigate to Rotating > on the control panel, set "Enable Rotating" to "No", and press  to confirm it.

For new model machines, if you wish to control the rotary axis rotation directly from the panel, you can press

Shift

+  /  (requires the machine to have U-axis support and a control panel version of HMI-V10.10.38.19 or higher). To check the panel version, press  +  to reset and view the version number.



Setting Parameters in LightBurn:

在 Lightburn 中设置参数:

打开 lightburn 软件, 点击顶部菜单栏 Laser Tools, 下拉列表中选择 Rotary Setup。

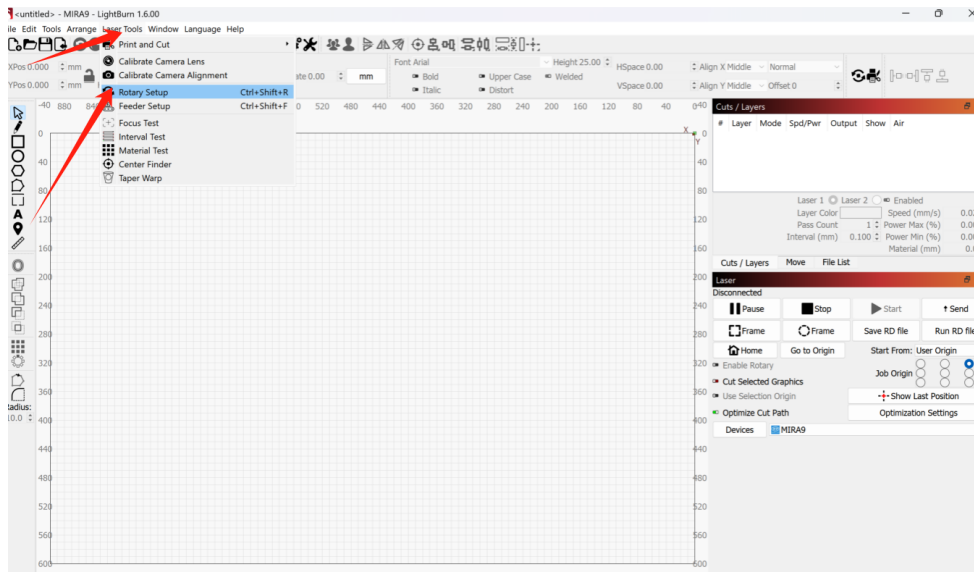
Website: www.aeonlaser.net, www.aeonlaser.com

Add: Building 5, No. 178, South Baihua Road,
Shaxi Town Taicang City, Jiangsu Province, P.R. China

Email: info@aeonlaser.net

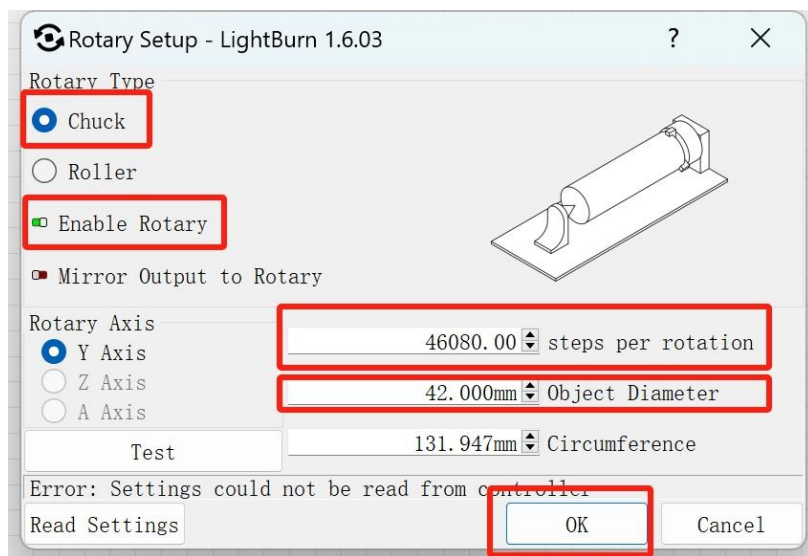
AEON Laser Technology Co., Ltd

Open the LightBurn software, click on Laser Tools in the top menu bar, and select Rotary Setup from the dropdown list.



选择旋转类型为“Chuck”，然后单击 Enable Rotary 按钮以启用它（如果启用，按钮将变为绿色），然后输入 46080 的步数值，然后输入 42 到 Object Diameter, 单击 ok。

Choose the rotary type as "Chuck", then click the Enable Rotary button to activate it (the button will turn green when enabled). Enter 46080 in the Steps per Rotation field, and input 42 into the Object Diameter field. Click OK.

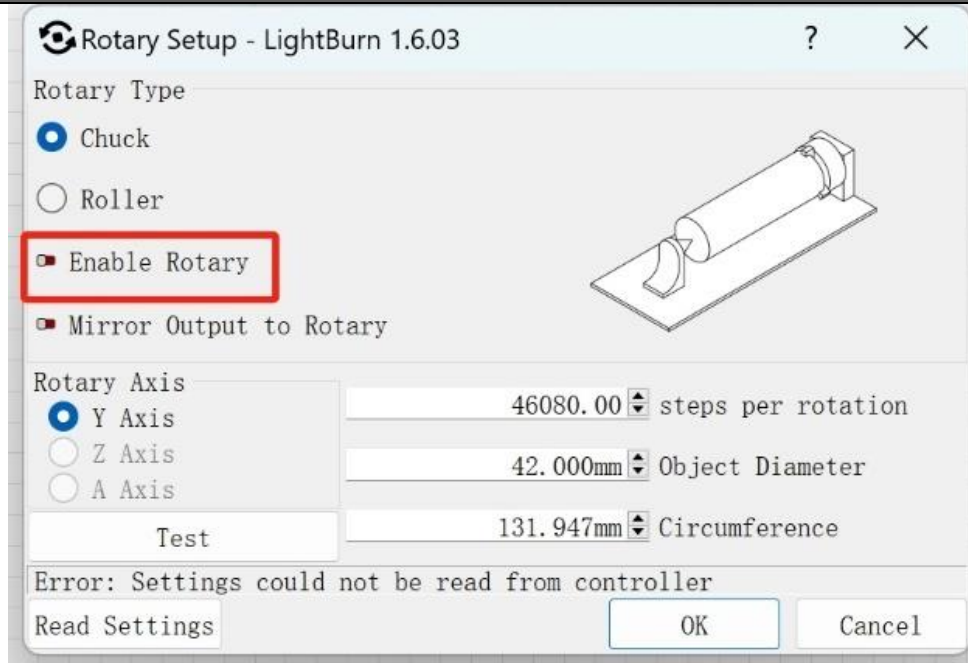


At this point, the rotary engraving mode is enabled.

此时已开启旋转雕刻模式。

如果您想返回平面雕刻模式。只需返回 Rotary 设置页面，然后单击 Enable Rotary 按钮（禁用后该按钮将变为灰色）。

If you want to return to flat engraving mode, simply go back to the Rotary Setup page and click the Enable Rotary button again (the button will turn gray when disabled).

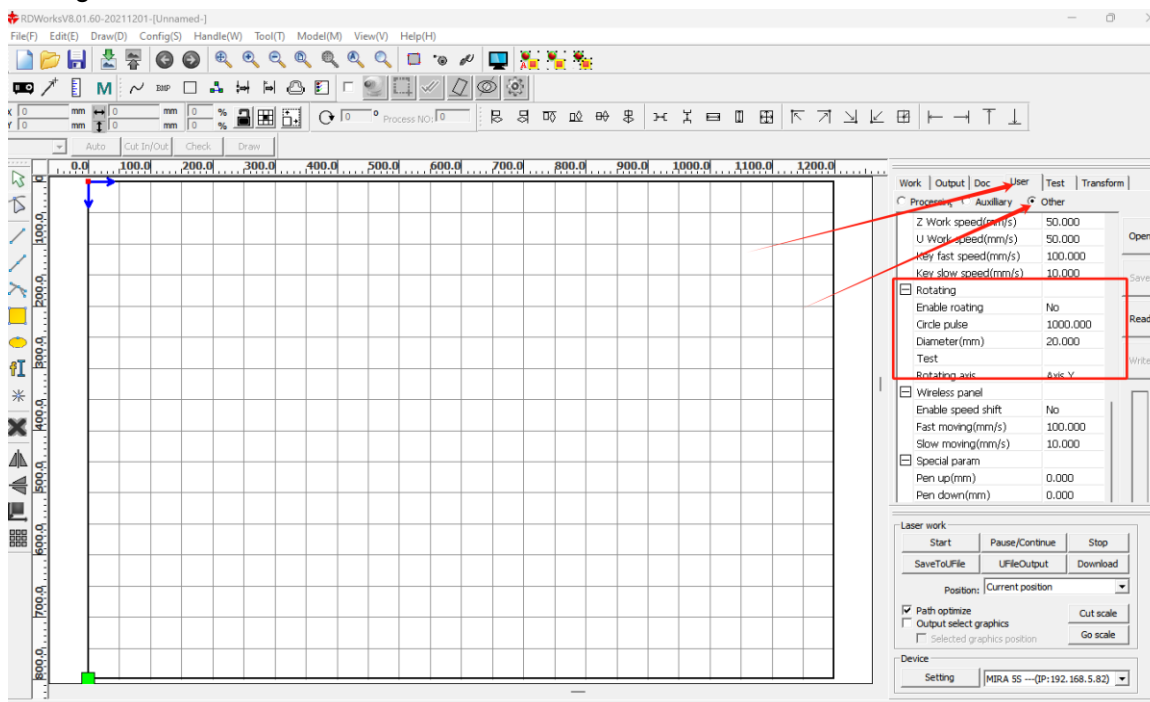


Set Parameters in RDWorks:

在 RDworks 中设置参数:

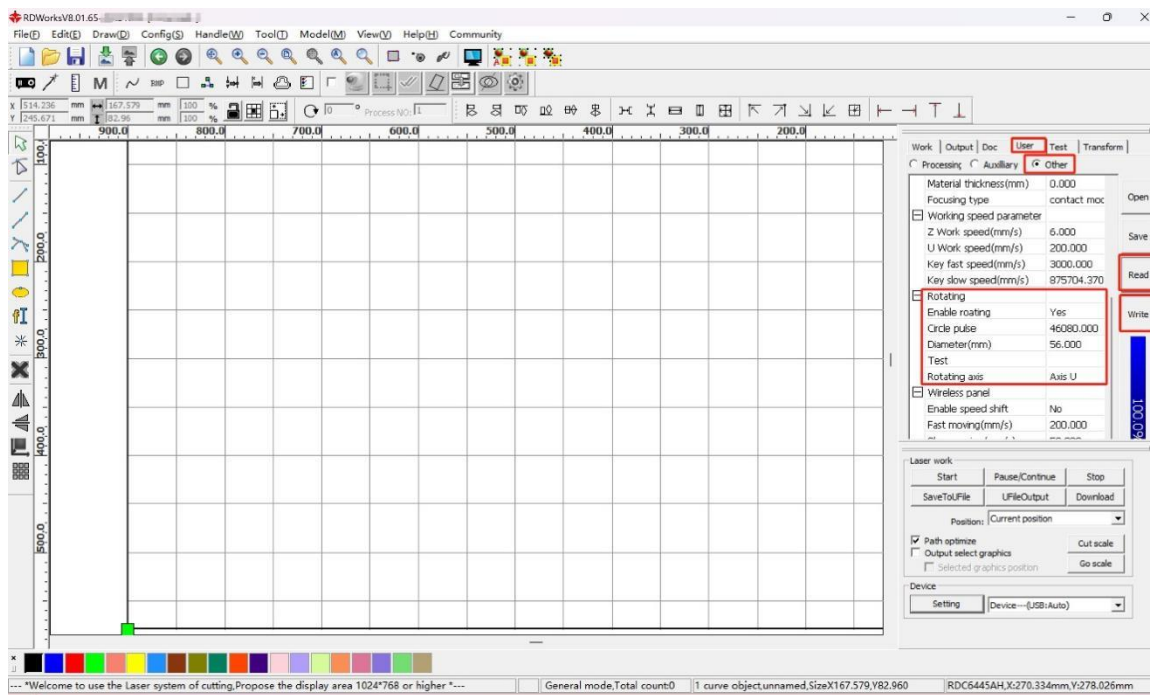
打开 RDworks。单击右列上的“User”选项卡，然后选择“Other”，向下滚动以找到“Rotating”设置。

Open RDWorks. Click on the "User" tab in the right column, then select "Other." Scroll down to find the "Rotating" settings



点击 Read 读取板卡参数，然后单击 Enable Rotating 将值更改为“Yes”，在 Circle pulse 栏输入 46080，在 Diameter 栏输入 42。然后，选择 Rotating axis（旋转轴）为“Axis U”（轴 U），点击 Write 写入板卡参数。

Click Read to load the board parameters, then click Enable Rotating and change the value to "Yes." Enter 46080 in the Circle Pulse field and 42 in the Diameter field. Next, select Rotating axis as "Axis U" and click Write to save the parameters to the board.



(需要确定 RDWorks 退出旋转雕刻需不需要 Reset 机器)---不需要，参数写入板卡即可。

如果您想返回平面雕刻模式。转到软件并将 Enable Rotating 设置为 “No”。

(Need to Confirm if a Reset is Required in RDWorks to Exit Rotary Engraving Mode)—No, simply writing the parameters to the board is sufficient.

If you want to return to flat engraving mode, go to the software and set Enable Rotating to "No."

Preparing the File for Engraving:

准备用于雕刻的文件:

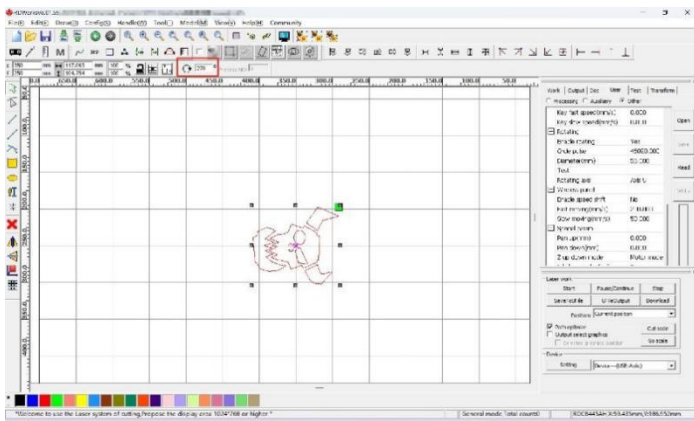
现在您已经开启了旋转模式并设置了参数，您可以为您的作业创建一个雕刻文件。在旋转模式下，文件的总长度表示产品上的弧长，如果您需要进行整周雕刻，此长度应等于产品的周长。

在 Rdworks 中，您可以通过在顶部工具栏上输入值来将设计旋转 270 度。（软件所显示的文件方向与实际工件的摆放方向相一致。）

Now that you have enabled rotary mode and set the parameters, you can create an engraving file for your job. In rotary mode, the total length of the file represents the arc length on the product. If you need to engrave the entire circumference, this length should equal the product's circumference.

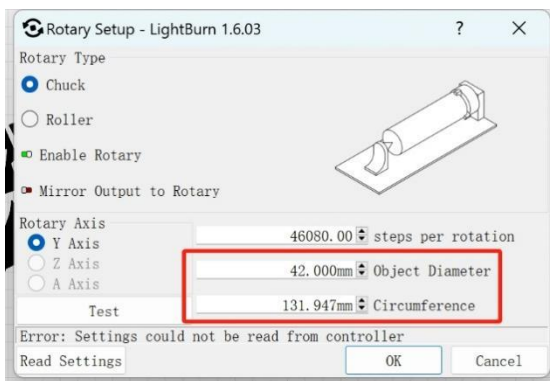
In RDWorks, you can rotate the design 270 degrees by entering the value in the top toolbar. (The file's displayed orientation in the software matches the actual orientation of the workpiece.)

AEON Laser Technology Co., Ltd

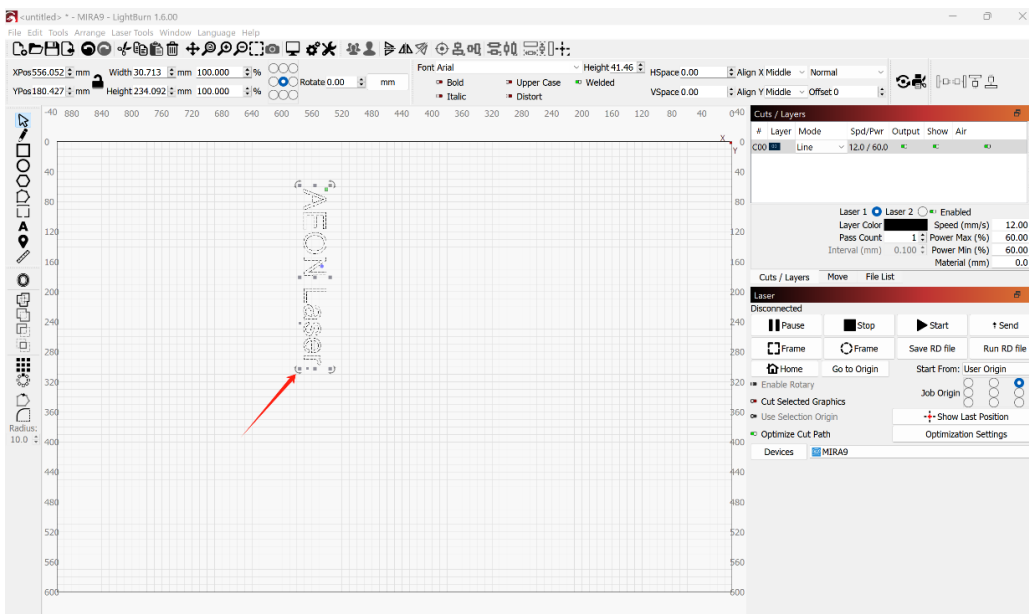


在 lightburn 中，如果输入产品的直径，它可以自动计算周长。

In LightBurn, if you enter the product's diameter, it will automatically calculate the circumference.



你可以通过软件的旋转手柄或直接输入角度来旋转设计。（软件所显示的文件方向与实际工件的摆放方向相一致。）
You can rotate the design using the rotation handle in the software or by directly entering the angle. (The direction of the file shown in the software matches the actual orientation of the workpiece.)



AEON Laser Technology Co., Ltd

接下来设置雕刻速度、功率和扫描间隔，进入机器的控制面板，确保激光聚焦。移动激光头到需要开始的位置按



设置原点，按



预览作业，然后按



开始工作。

Next, set the engraving speed, power, and scan interval. Access the machine's control panel and ensure the laser

is focused. Move the laser head to the starting position, press



set origin, press



to preview job, then

press



start work.