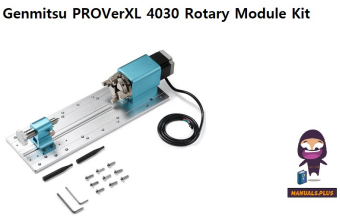
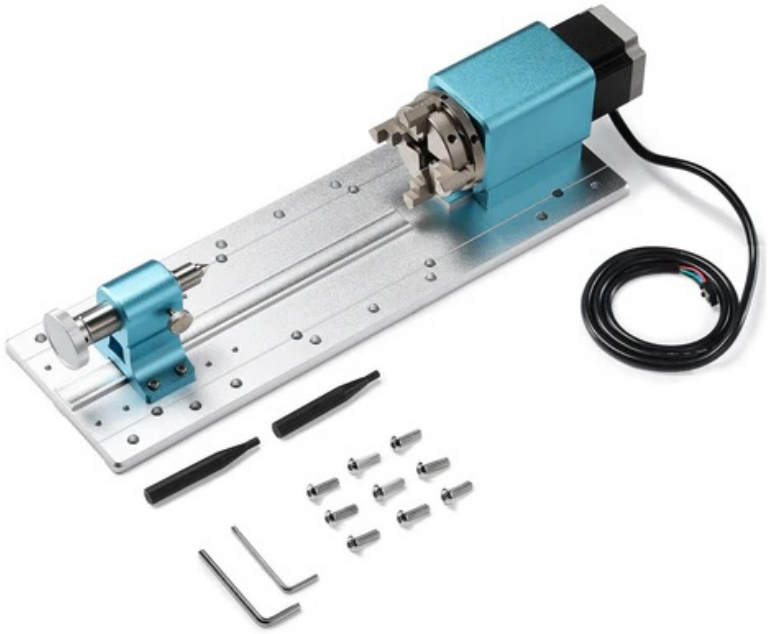


Genmitsu PROVerXL 4030 Rotary Module Kit User Manual

Contents

GENMITSU

Genmitsu PROVerXL 4030 Rotary Module Kit



Welcome

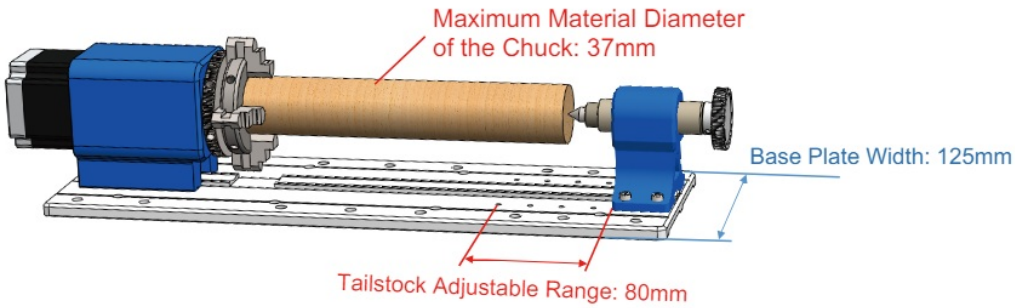
Thank you for purchasing the Genmitsu Rotary Module Kit from SainSmart. For technical support, please email us at **support@sainsmart.com**. Help and support is also available from our Facebook group. (SainSmart Genmitsu CNC Users Group) Scan QR code to join the group and fnd the information.

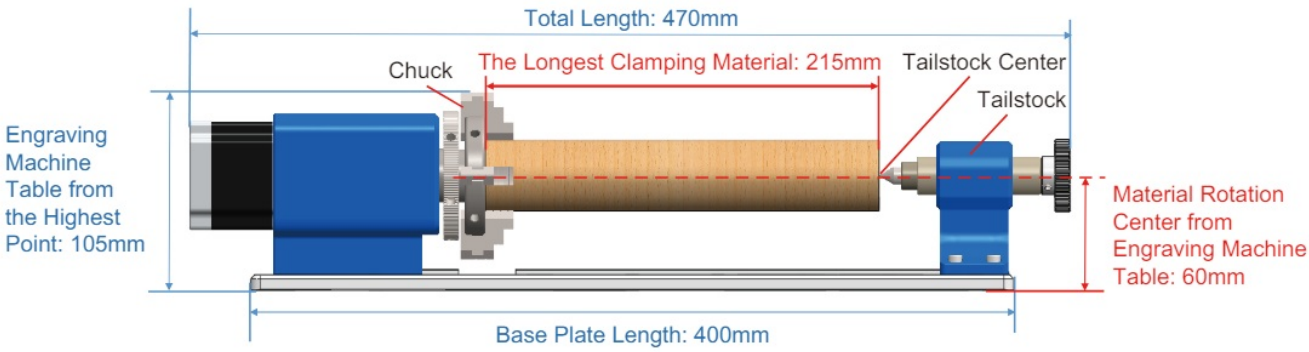
Machine Overview

Use	Designed for the PROVer XL 4030 V1/PROVer XL 6050 PLUS. Enable Rotary 3D or 2D Wrapped Engraving
Clamped Material Size	With Tailstock Length: 15-215mm Without Tailstock Length: 15-275mm
Clamped Material Diameter	Forward Mounting: 2-37mm Reverse Mounting: 20-67mm
Tailstock Spacing Adjustment	5 installation positions, each position spacing is 20mm, and the range of adjustment is 20-80mm.
Tailstock Center Adjustment Range	0-30mm
Electric Motor	NEMA23 Planetary Geared Stepper Motor
Pulse Equivalent	$101=200 x 8 x 10 / (Diameter x π)
Shape Size	470 x 125 x 105mm (18.50” x 4.92” x 4.13”)
Max Rotate Speed	480°/S
Unidirectional Maximum Rotation Angle	33512 x 360°
Distance of Rotation Axis from the Engraving Machine Table	60mm

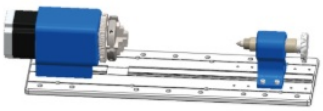
Using the Rotary Module:
Initial setup and calibration of a rotary can be challenging if your workflow requires high precision. There are a variety of options for working with a rotary, including 3D Engraving, or using hybrid 2D methods. Depending on the software you use, each method will have a different workflow, Do not hesitate to join and ask our Facebook group for help or consult customer service when you encounter issues, and we will be happy to help.

Rotary Module Dimensions





Package List



01 Rotary Module

02 (2) Chuck Locking Wrench

03 Allen Wrench
4mm, 3mm

Rounded Hex Screw
04 (9) M6 x 18
(9) M6 x 22

05 (9) M6 T-slot Nut

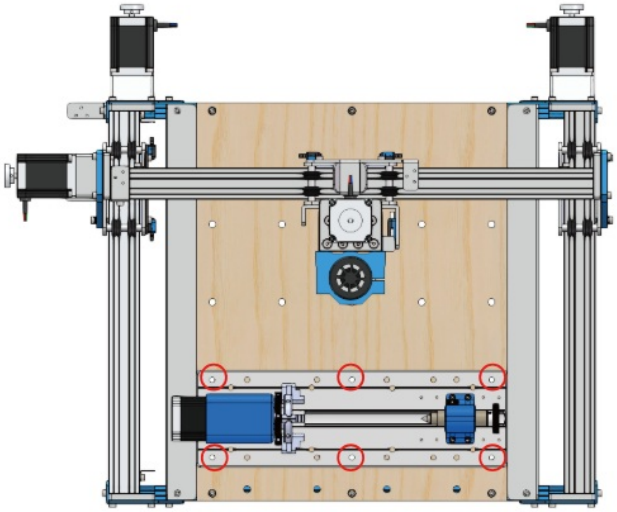
06 User Manual

INSTALLATION INSTRUCTION

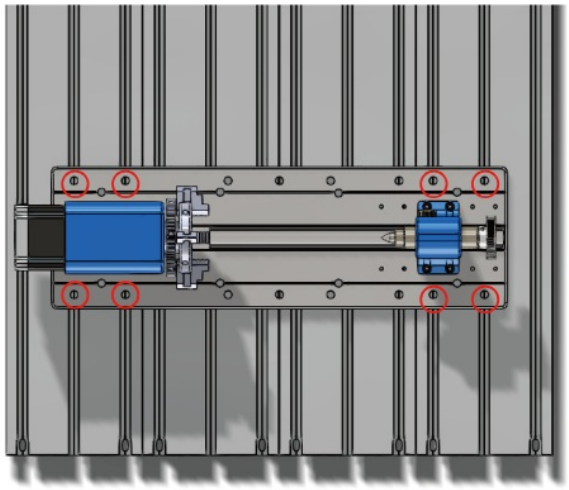
STEP 1 Install the Rotary Module on a 4030 or 6050 Machine

1. Align the holes in the rotary axis base plate with the holes in the machine's machining platform as shown in the figures.
2. Pre-lock the screws by screwing them through the over-holes in the base plate, and do not lock them for successful subsequent installation.

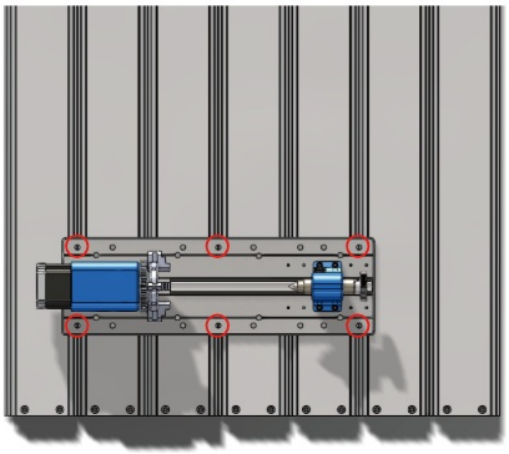
TIP: Different equipment and different platform plate correspond to different hole positions, please determine the hole position of your machine according to the following figures.



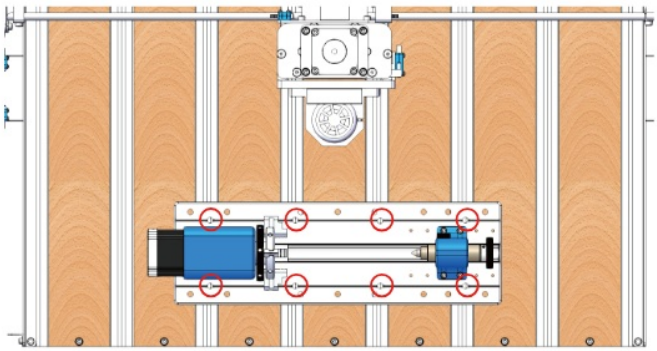
A. 4030 V1 Original MDF Platform
(Fixed with 6 M6x22 rounded hex screws)



B. 4030 Aluminum Platform
(Fixed with 8 M6x18 rounded hex screws and M6 slider nuts)

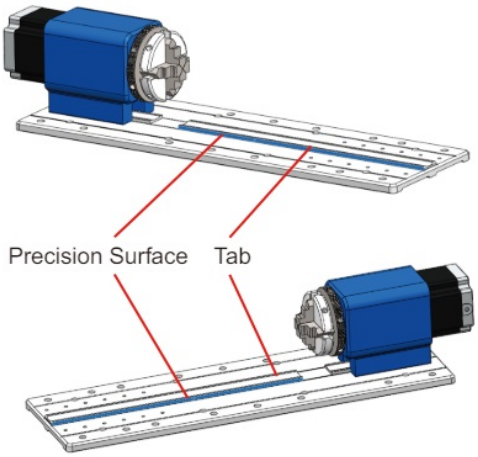


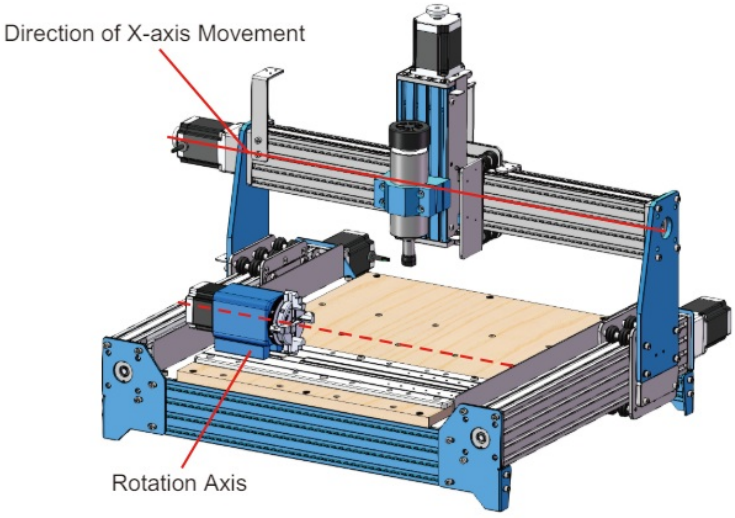
C. 6060 Aluminum with MDF Hybrid Platform
(Fixed with 6 M6x18 rounded hex screws with M6 slider nuts)



D. 6050 Original Platform
(Fixed with 8 M6x22 rounded hex screws with M6 slider nuts)

STEP 2 Equipment X-axis Position Adjustment (Take 4030 for example)
Rotary engraving requires the module to be as parallel as possible to your X-axis movement. When the rotation axis is not parallel to the direction of X-axis movement, it will lead to damage to the machine or a large error in the size of the engraved parts. To position/calibrate module alignment, the unit has 2 raised precision surfaces along the center of the module baseplate between the chuck and tailstock positions. (Remove the tailstock for easier calibration.)

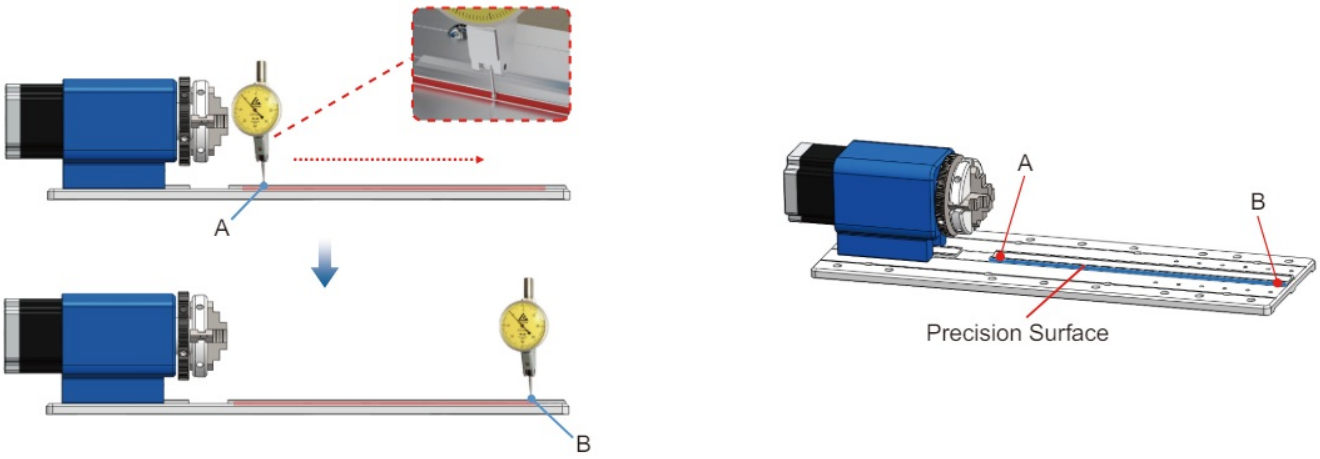




Note: Point A refers to the point closer to the chuck, and point B indicates the point furthest away from the chuck. The precision surface refers to the elevated rails shown above.

Method 1: (Requires a Dial Test Indicator)

1. Attach the dial test indicator onto the Spindle mount base.
2. Jog the Spindle/indicator to Point A. Low the indicator so that the tip touches the side of the precision rail tab (A reading of 0.1mm on the dial test indicator is what you are looking for). Now, set the dial test indicator to zero.
3. Jog the machine slowly towards point B and watch the indicator, checking the reading of when you reach point B. If the reading is still 0, alignment calibration is complete.
4. If the reading is not 0, make small adjustments to the module base plate position and repeat the above steps until the reading is 0.
5. Tighten module base plate screws after calibration.



Method 2: (Requires Round Pin Probe) This method relies more on experience and “feel” to align your Rotary module.

1. Replace the tool on the spindle with a precision round pin of the same diameter.
2. Select two points A and B on the side of the tab, the distance between the two points is about 140mm.
3. Jog the machine for the round pin on the spindle slowly approaching the point A, so that the pin is touching the precision surface of the tab.
4. Jog the machine slowly towards point B and watch the gauge checking the clearance of when you reach point B. Adjust the parallel alignment of the rotary module as shown in the figure above in order to make contact between the round pin and the precision surface of the tab at point B.
5. Repeat the above steps and adjust repeatedly until the fit is exactly right at point B.
6. Tighten the module baseplate when alignment is complete.

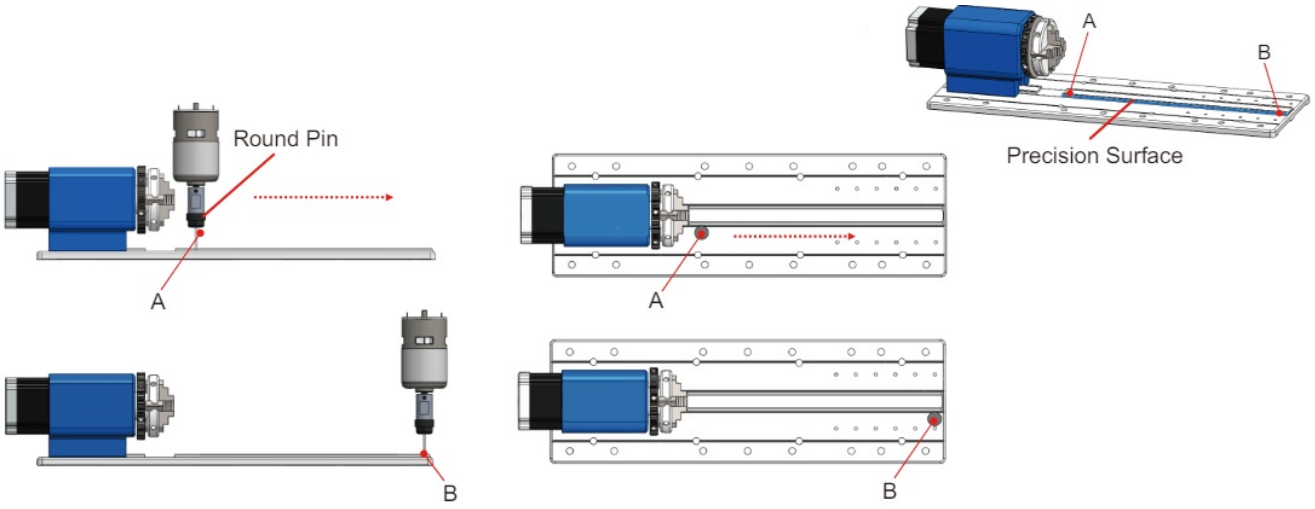
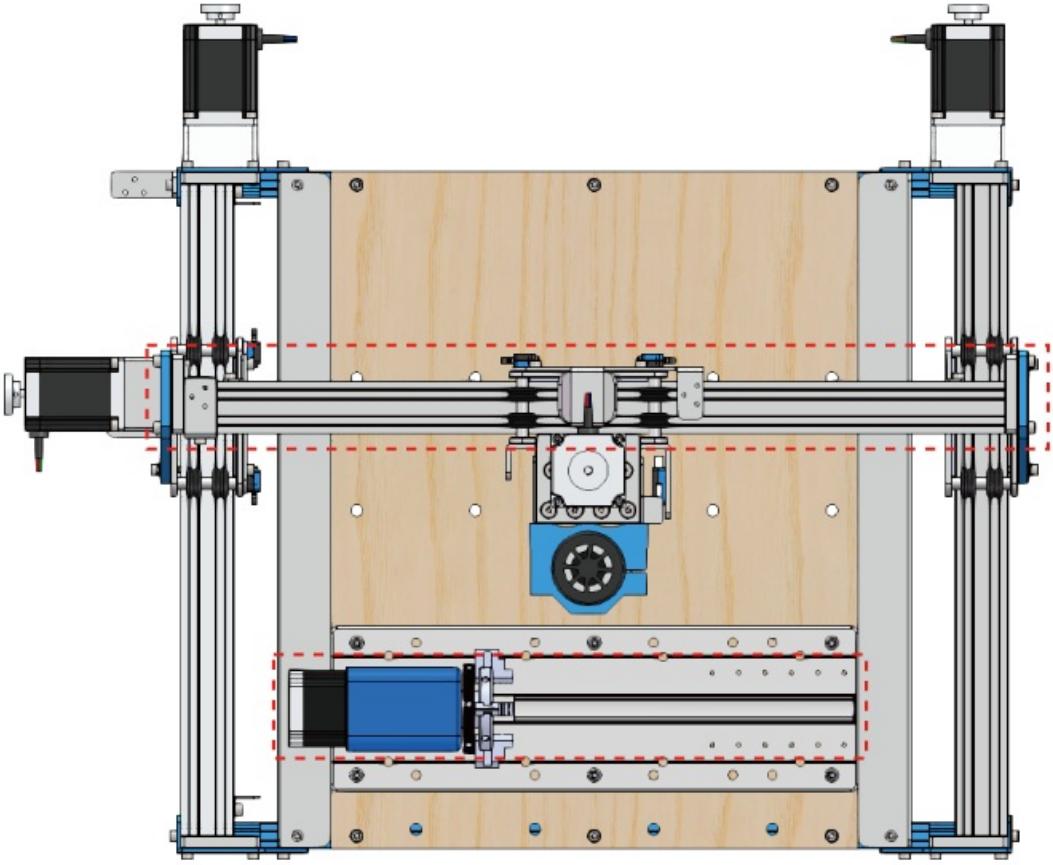
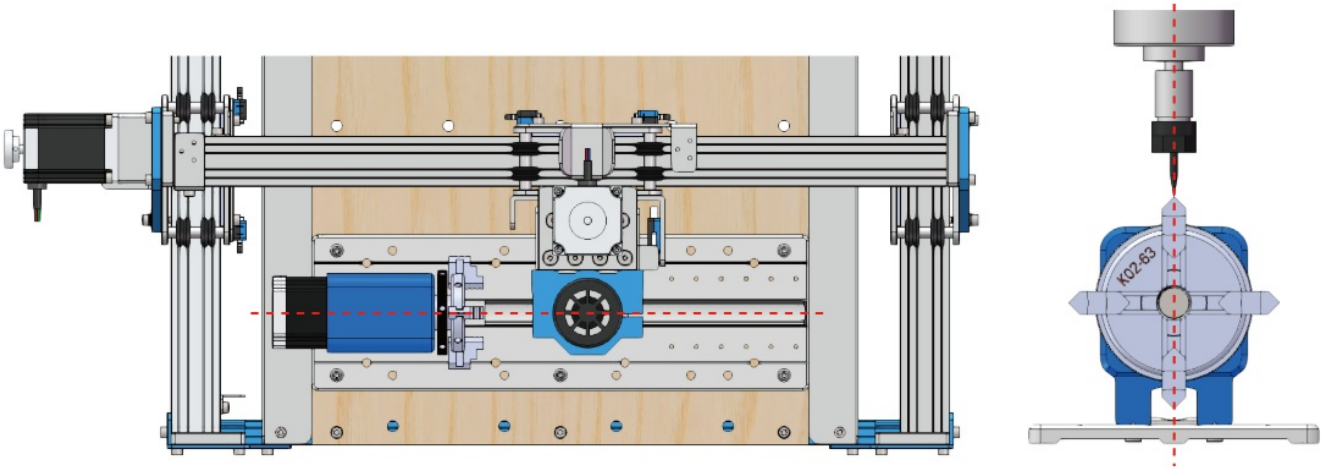


Figure showing the parallelism of the rotary axis with the X-axis of the device, please make sure that the two parts in the red box remain parallel.



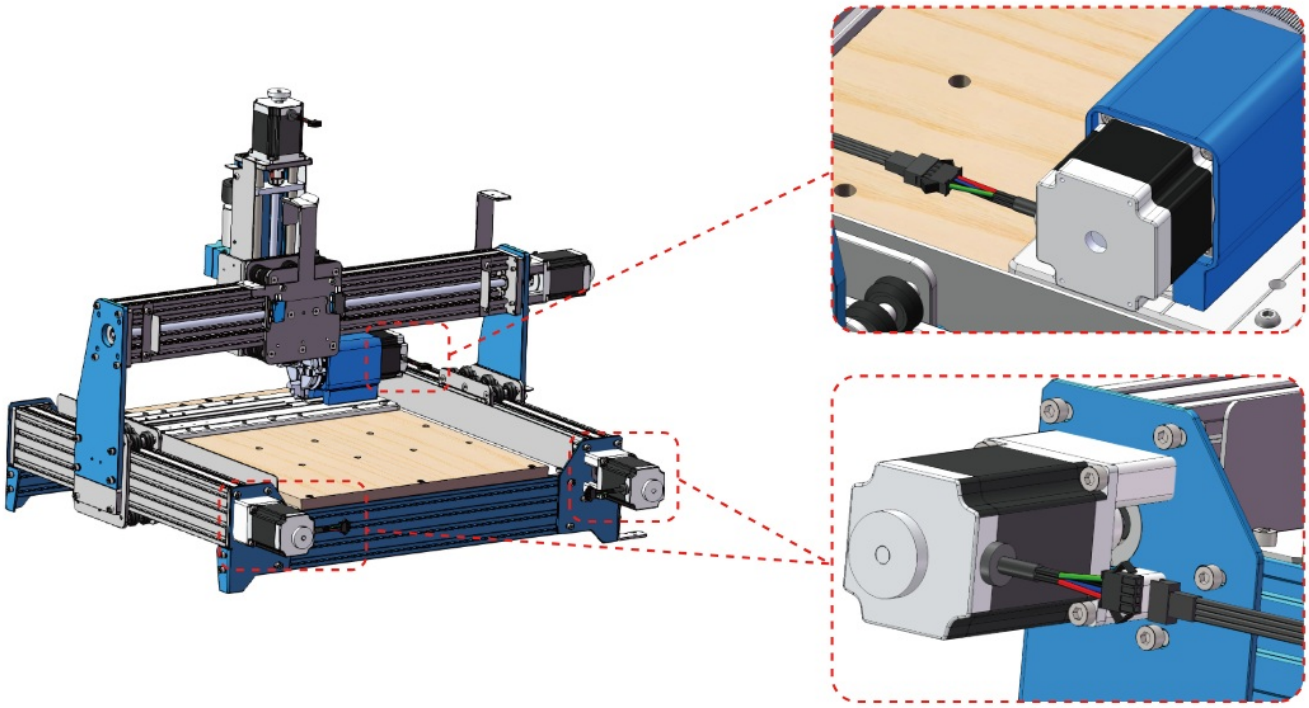
Equipment Y-axis Position Adjustment (Take 4030 for example)

Use the computer or offline, move the Y-axis of the device and align the center point of the device spindle with the midline of the rotary axis as shown in the figure.



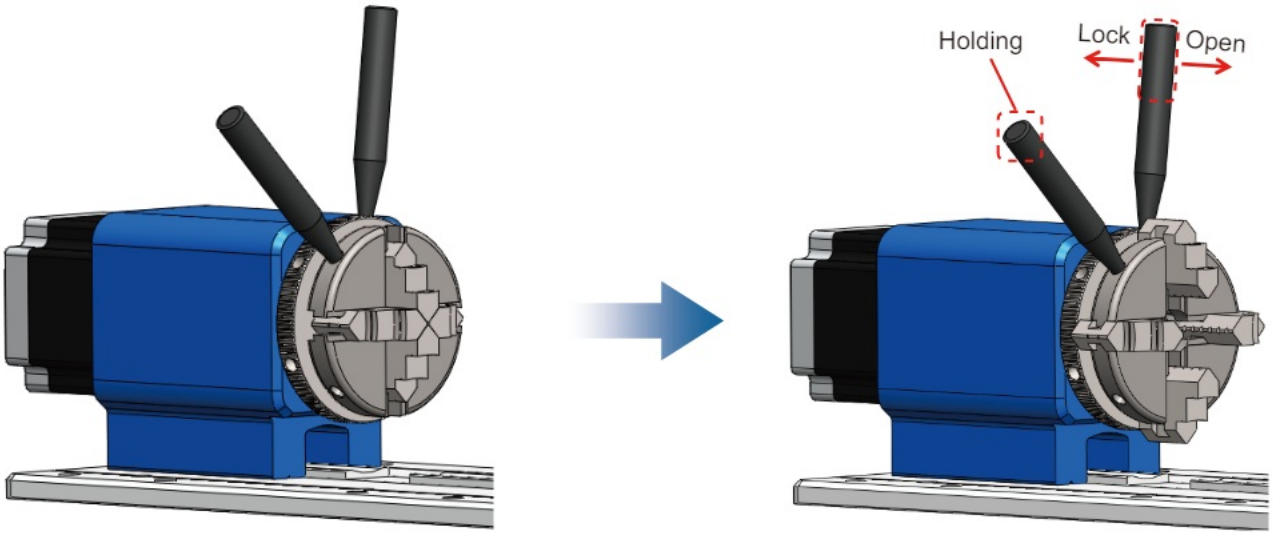
Wiring

Disconned both of the Y-axis cables from the machine. Connect one of the cables to the Rotary Module and the other end to the Y-axis interface of the CNC engraver controller box.



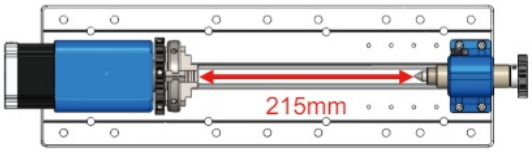
Adjusting Rotary Chuck / Installing Material Stock

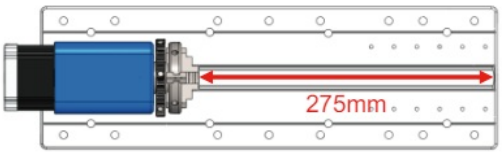
1. Insert the 2 locking wrenches into the chuck.
2. Hold one wrench still with one hand and turn the other wrench to adjust the jaws of the chuck to open or lock.

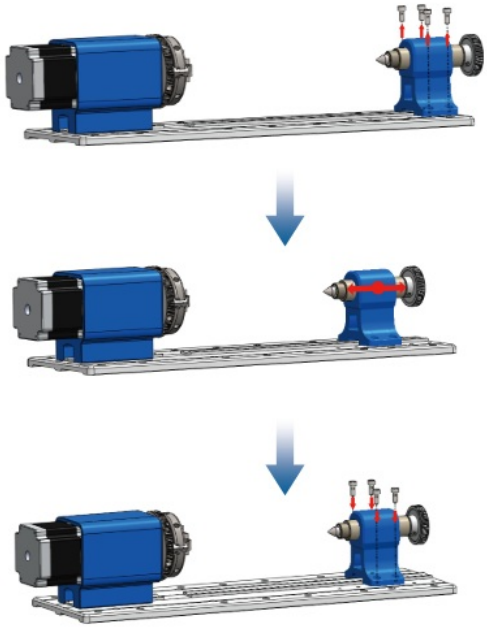


Adjust the Tailstock

1. The tailstock can be used as needed depending on the engraving requirements. (The maximum loading length is 215mm when the tailstock is installed; without the tailstock, the maximum loading length increases to 275mm.)
2. Move to the proper location and tighten the four screws securing the tailstock spacing.

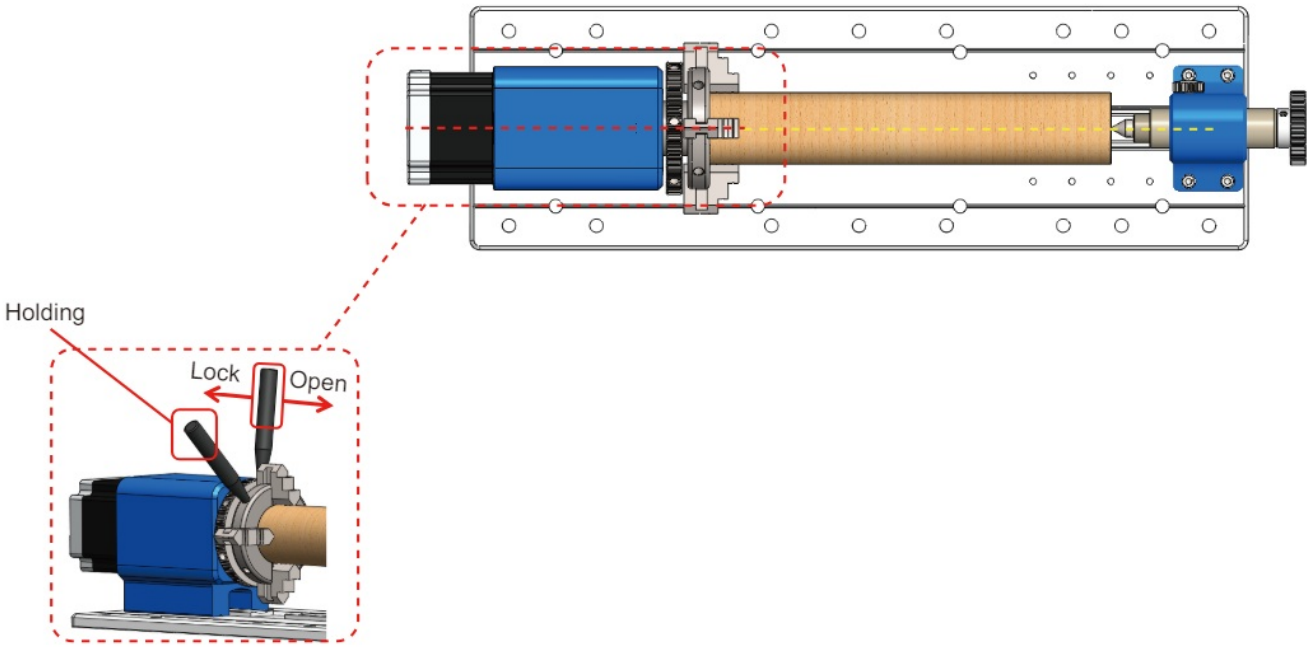






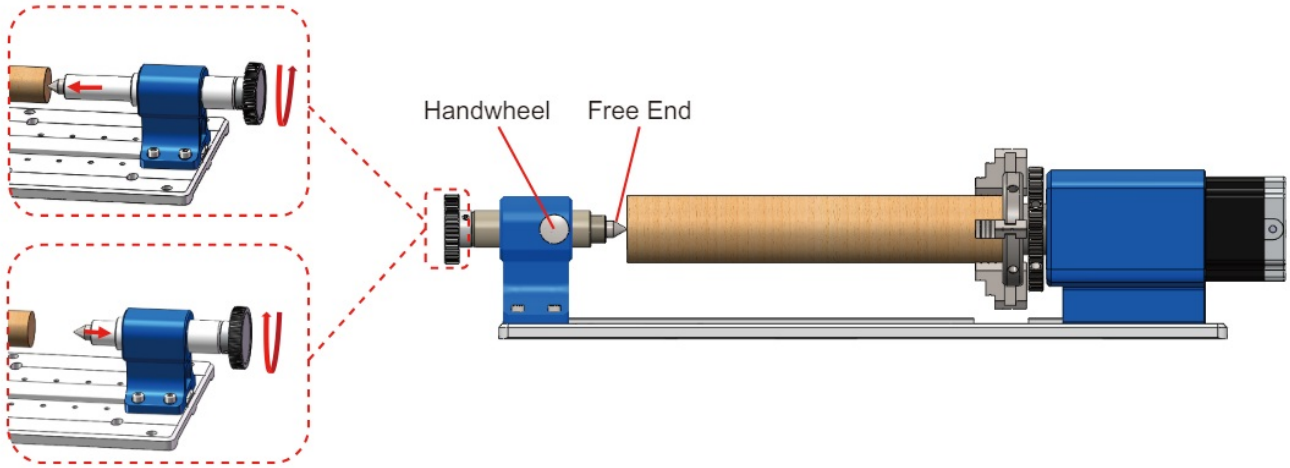
Adjust the Tailstock

Insert the stock to be engraved, adjust the axis of the stock and the center of rotation of the rotary module in a line, then lock the chuck.



Adjusting the Length of the Tailstock Spacing

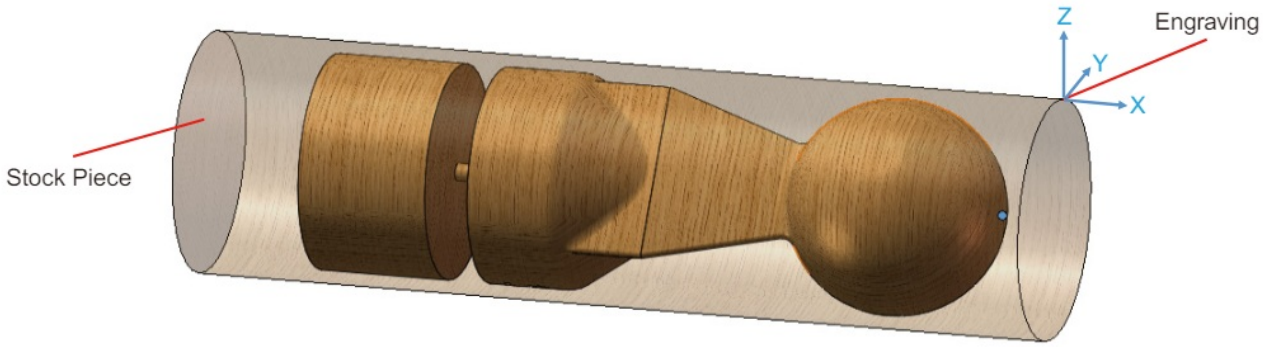
1. Using the tailstock reduces possible wobble during operation of the clamped engraving material.
2. Rotate the handwheel to control the distance of the telescopic tailstock, as shown in the figure.
3. When the tailstock touches the free end of the engraving material, turn the side handwheel to lock the tailstock in place.



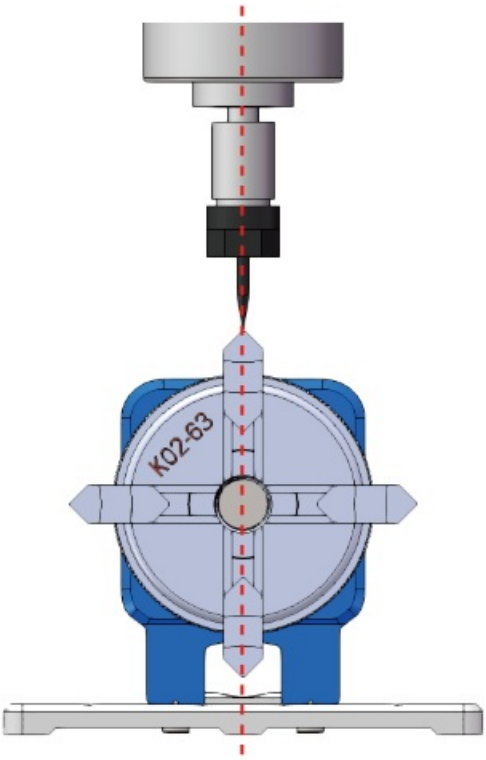
Prepare for Engraving

Blanks & Prep

1. Select the appropriate stock size as needed for your machined part. machined part size should be larger and bigger than stock size.
2. Setting the zero point of a machined part at the top of the end of the part. (The zero point of the machined part can be set according to your needs.)

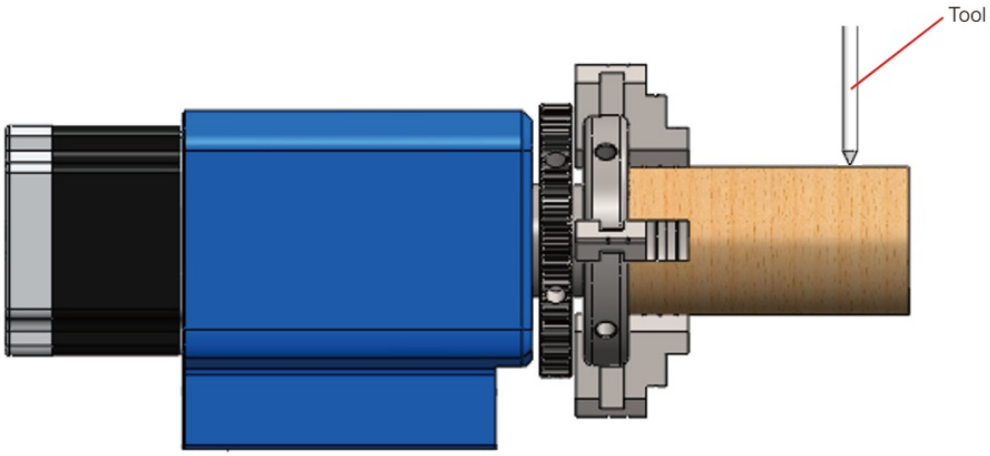


Y-axis Tool Setting Operation
According to the above installation steps, determine whether the center point of the main axis of the equipment is aligned with the midline of the rotary axis in the Y-axis direction, as shown in the figure.



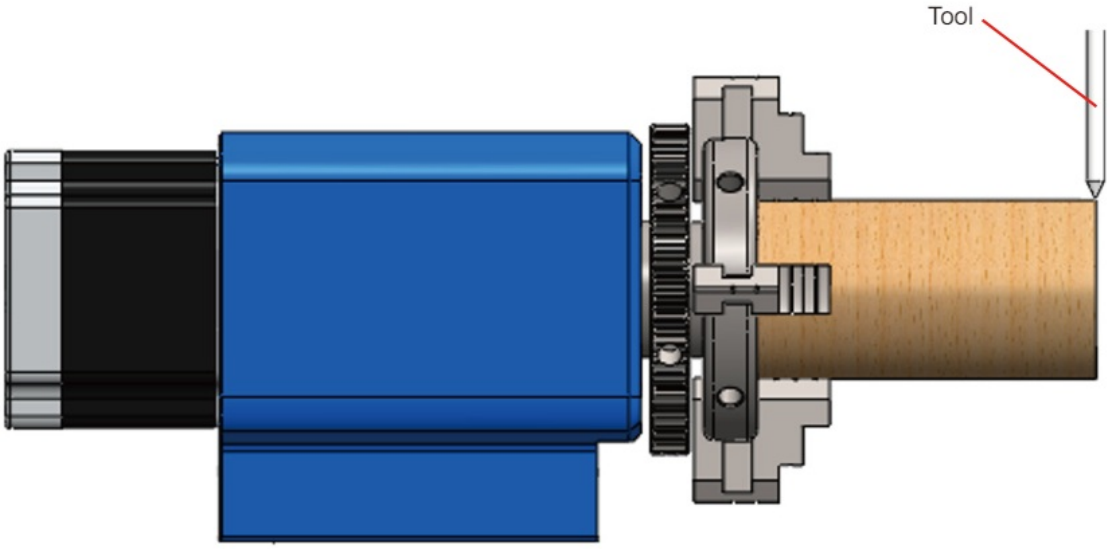
6.3 Z-axis Tool Setting Operation

1. Attach the Z-probe kit, then place the Z-probe kit on the upper surface of the stock and perform tool setting operation.
2. When the tool bit just touches the upper surface of the stock as shown in the figure, the Z-axis tool setting is completed.



X-axis Tool Setting Operation

1. Move the X-axis so that the tool is in contact with the free end of the stock.
2. Zero the X coordinate, the position o is now the zero point of X-axis.



Adjustment of the Software Parameter

In order for the rotary module to operate smoothly, the value of max travel for the Y-axis needs to be changed to 9999. So first of all we enter $131=9999.

Formula for Modifying Parameters

- $101=200 x Drive Subdivision x Rotational Speed Conversion (Circumference)
- $101=200 x Drive Subdivision x Rotational Speed Conversion (Diameter x π)

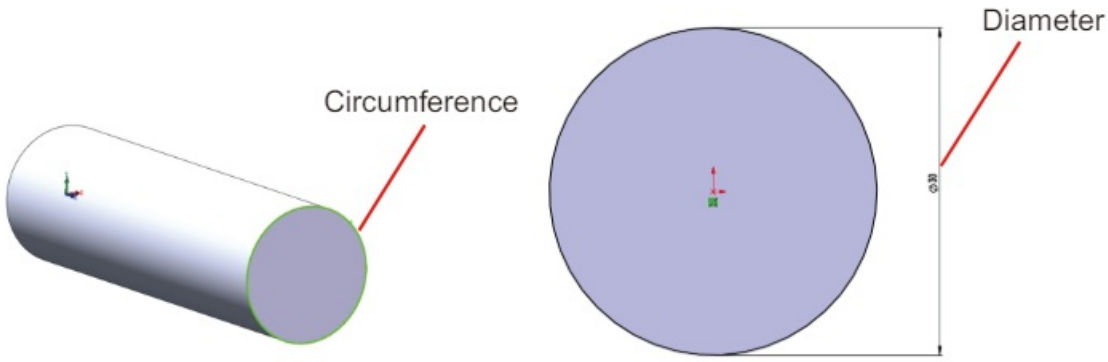
Please calculate the pulse equivalent based on the actual measured stock diameter.

A. For 6050
Drive Subdivision: 8 Rotational Speed Conversion: 10 Take a 30cm cylindrical relief of wood as an example, and take into account the formula:$101=200x8x10/(30xπ)=169.851

B. For 4030

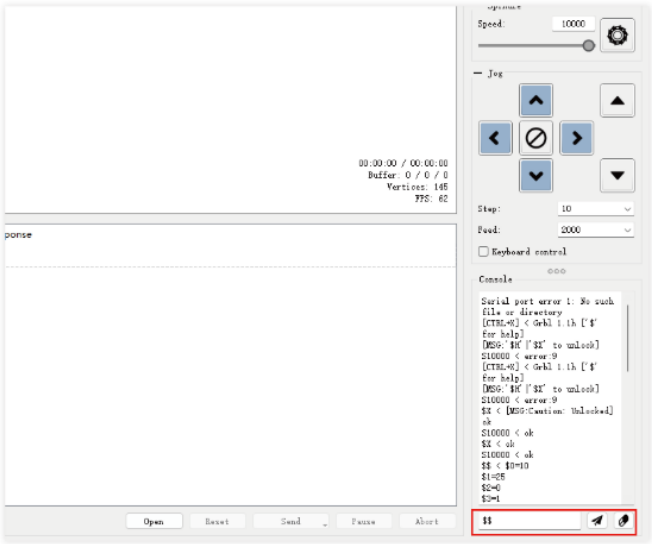
- **Drive Subdivision:** 8
- **Rotational Speed Conversion**: 10

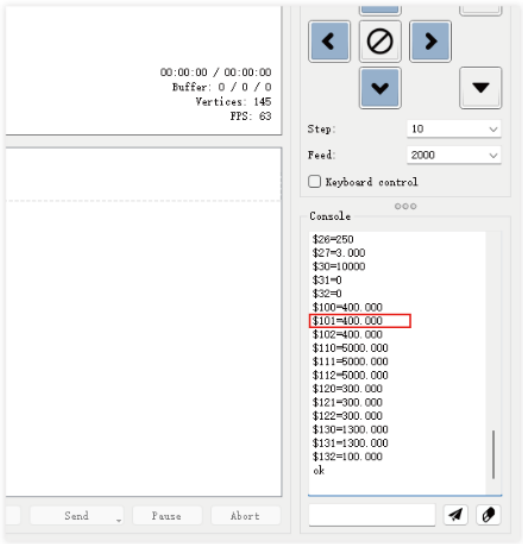
Take a 30cm cylindrical relief of wood as an example, and take into account the formula:$101=200x8x10/(30xπ)=169.851



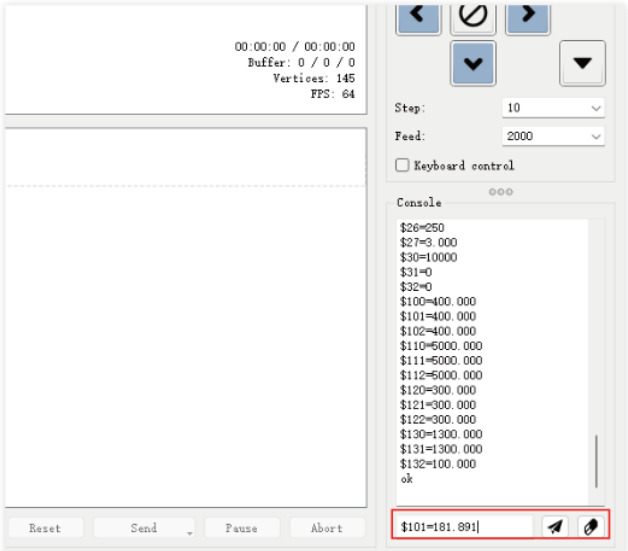
Input Parameter

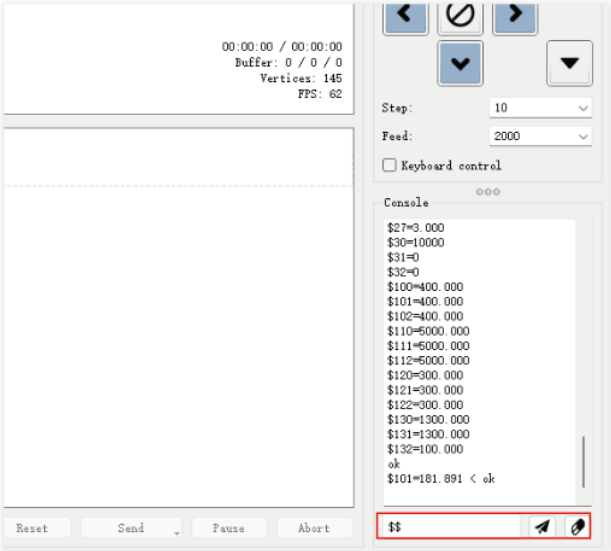
1. First enter $$ to check the current value of parameter $101.



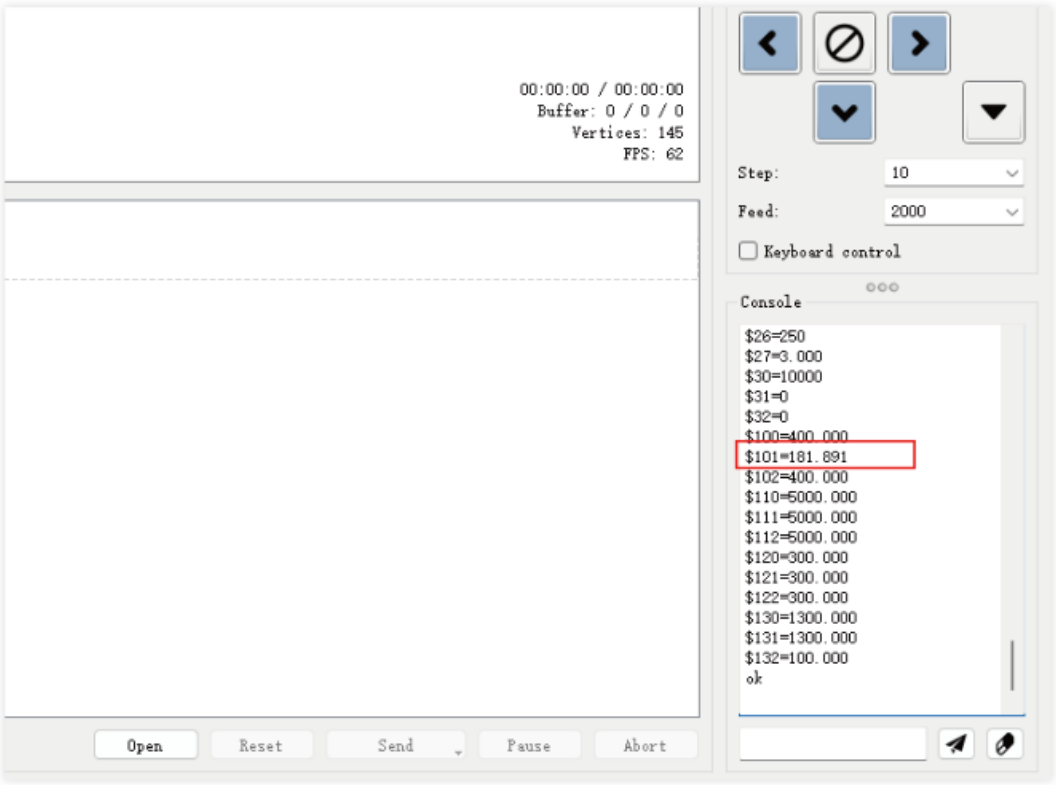


2. Enter “$101 = The value calculated according to the above formula”.
3. Enter $$ again to check whether the data is a successful input.





4. Modify the finished $ 101 parameter should be the value you entered, as shown below.



Tool setting is completed, parameter modification is completed, you can start engraving! Wish you enjoy the fun of engraving with the rotary module!

- Email: ***support@sainsmart.com***
- Facebook messenger: **https://m.me/SainSmart**

Help and support is also available from our Facebook Group Vastmind LLC, 5892 Losee Rd Ste. 132, N. Las Vegas, NV 89081

Facebook Group

Documents / Resources

	Genmitsu PROVerXL 4030 Rotary Module Kit [pdf] User Manual PROVerXL 4030 Rotary Module Kit, PROVerXL 4030, Rotary Module Kit, Module Kit, Kit

References

- User Manual