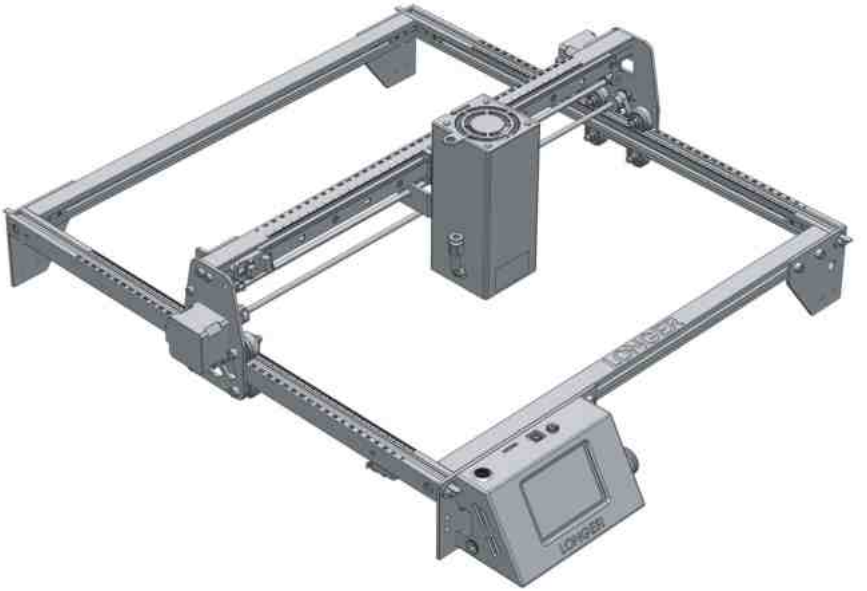
LONGER

CE FC RoHS

Quick Start Guide

www.longer3d.com

RAY5 Unboxing Video



LONGER LASER ENGRAVER **Ray5 40W**

LaserBurn APP & Software

a) Please scan the QR code below or search for “LaserBurn" in the Google Play Store or Apple App Store to download the app.

Note: After downloading and installing the app, please carefully read the warnings and precautions in the app to ensure safe and proper use of this product.

b) Download the PC software from the link below. LightBurn is compatible with Windows and macOS systems, and LaserGRBL is compatible with Windows.

LightBurn
https://LightBurnsoftware.com/pages/download-trial

LaserGRBL
https: //lasergrbl.com/download/

Please download the software, configuration file, parameter table, manual, etc. from the following links: https://www.longer3d.com/pages/download

After-Sales Service

Technical servie for this product is available globally. Please contact us if you encounter any issues, and we will get back to you as soon as possible.

Shenzhen Longer Technology CO., Ltd.

Add: FL 10, Building 2B, Intelligent Park, 76 BaoHe Ave, Longgang, Shenzhen, China

Service Hotline: (+1)888-575-9099

Mon-Fri: 9:00am-6:00pm (EST, UTC-5)

Sun-Thu: 8:30pm-7:00am (EST, UTC-5)

Email: support@longer.net

Facebook ID: Longer Global

Facebook Group: Longer Laser Engraver Official Group

Youtube Channel: Longer Official

TABLE OF CONTENTS

! ATTENTION !

1. The Ray5 engraves and cuts materials by the means of a high-energy diode laser beam.
   The hazards associated with a high-energy diode laser beam include the possibility of fires, generation of hazardous and/or irritating toxic fumes, but more importantly damage to eyes and skin.

2. 

   Laser engravers are divided into several internationally valid classesboased on their performance and the risk of injury. The Ray5 40W falls into the ClassIV (Class4 IEC standard focus on the American FDA classification).

Laser class	Class Definition
Class I	Class I levels of laser radiation are not considered to be hazardous.
Class IIa	Class IIa levels of laser radiation are not considered to be hazardous if viewed for any period of time less than or equal to $1x10^3$ seconds but are considered to be a chronic viewing hazard for any period of time greater than $1x10^3$ seconds.
Class II	Class II levels of laser radiation are considered to be a chronic viewing hazard.
Class IIIa	Class IIIa levels of laser radiation are considered to be, depending upon the irradiance, either an acute intrabeam viewing hazard or chronic viewing hazard, and an acute viewing hazard if viewed directly with optical instruments.
Class IIIb	Class IIIb levels of laser radiation are considered to be an acute hazard to the skin and eyes from direct radiation.
Class IV	Class IV levels of laser radiation are considered to be an acute hazard to the skin and eyes from direct and scattered radiation.hazard to the skin and eyes from direct and scattered radiation.and eyes from both direct and scattered radiation.

The high energy laser beam can cause severe eye damage, including blindness and serious skin burns.

Improper use of the controls and modification of the safety features may cause serious eye injury and burns.

Please wear Personal Protective Equipment (PPE). Safety glasses are designed to filter specific ranges of laser wavelengths. The Ray5 40W comes with safety glasses specificlly designed for the LONGER Laser Module.

DO NOT look directly into the laser beam;

DO NOT aim the laser beam at reflective surfaces;

DO NOT operate the laser without PPE forall individuals in the vicinity of the Ray5 40W;

DO NOT allow unsupervised access to the Ray5 40W by children;

DO NOT allow pets near the Ray5 40W;

DO NOT modify or disable any safety features of the laser system;

DO NOT touch the high-energy laser beam.

3. We strongly recommend placing the machine in a well-ventilated room, and at the same time, the door of the room has a sealing effect and the windows have curtains, so as to effectively avoid looking directly at the laser beam and some smoke and steam , Particles and other highly toxic substances. At the same time, you can pay attention to the Longer products (cover) in the follow-up.

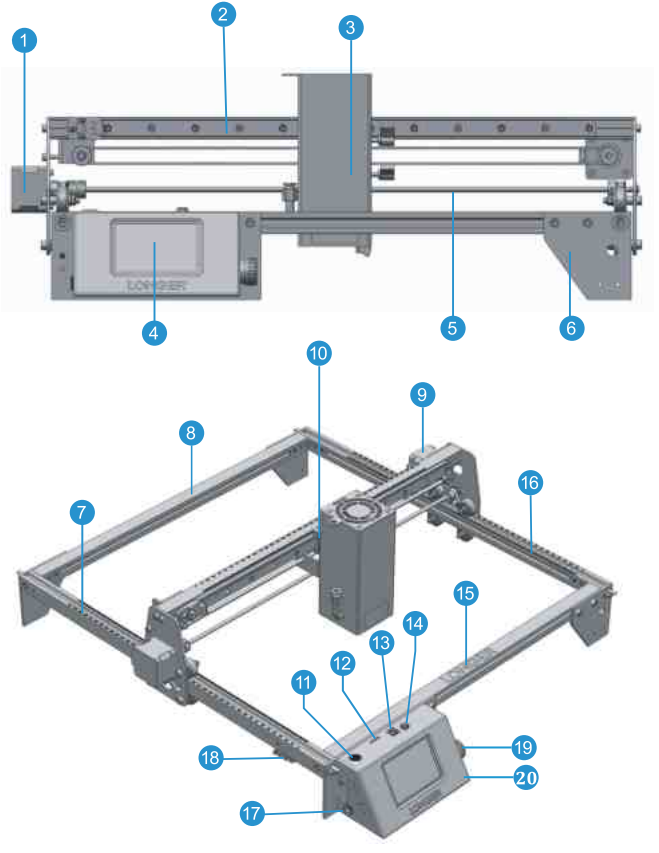
4. The high-energy diode laser beam can produce extremely high temperatures and significant amounts of heat as the substrate material is burned away while engraving and cutting.Some materials are prone to catch fire during cutting operations creating flame, fumes and smoke.

5. Although the Ray5 40W has a built in flame sensor, this technology should NOT be considered 100% accurate and should be seen only as a warning system.

   P.S. During the working process of Ray5 40W, if a flame is found, the machine will stop the laser and make a sound to indicate abnormal conditions. Please pay attention to the working status of the machine.

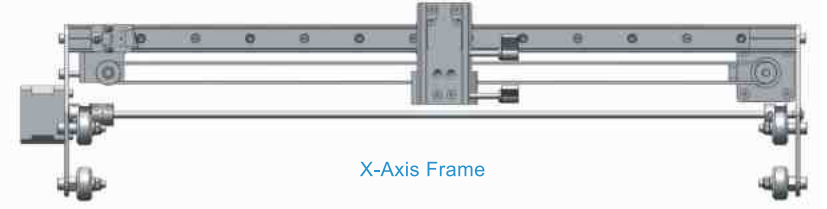
6. During operation to ensure that any flare ups flame are properly contained and extinguished.

LASER ENGRAVER INTRODUCTION



1. Y-Axis Motor
2. X-Axis Frame
3. Laser Module
4. Touch Screen
5. Synchronous Shaft
6. Support Feet
7. Left Frame
8. Rear Frame
9. X-Axis Motor
10. Laser Holder
11. Power Switch
12. TF Card Port
13. USB Port
14. Air Pump Port
15. Front Frame
16. Right Frame
17. Power Port
18. Limit Switch
19. E-Stop
20. Control Box

PACKING LIST



X-Axis Frame

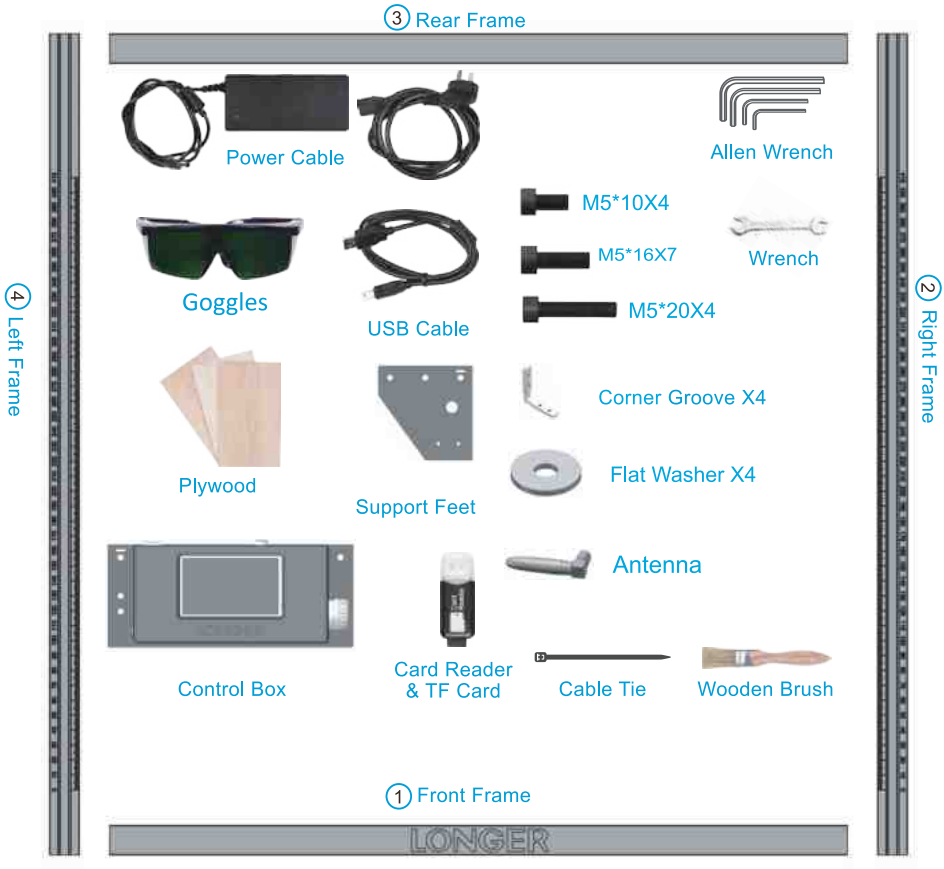
Laser Module

Timing Belt

Limit Switch

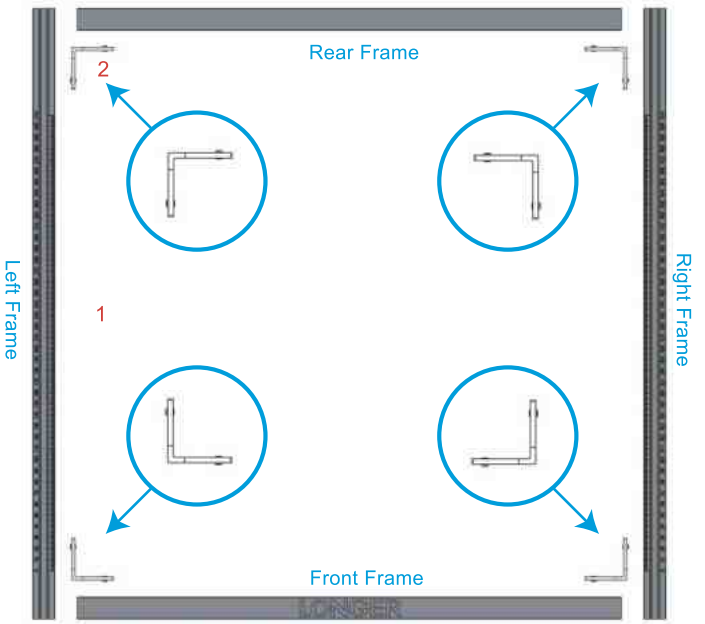
Air Pump

Silicone Tube

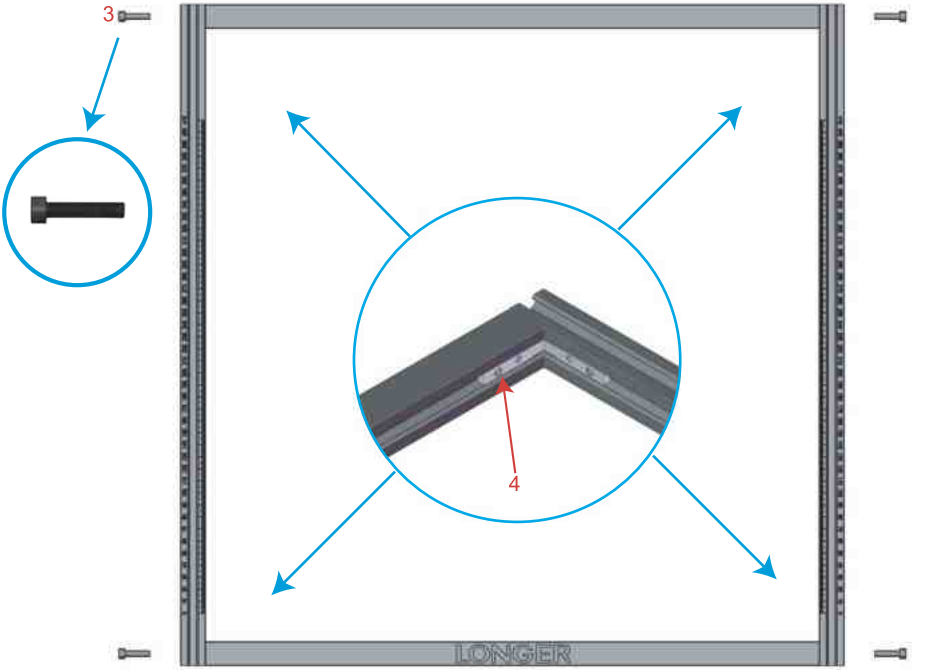

3 Rear Frame
Power Cable
Allen Wrench
M5*10X4
M5*16X7
Wrench
Goggles
USB Cable
M5*20X4
4 Left Frame
2 Right Frame
Plywood
Support Feet
Corner Groove X4
Flat Washer X4
Antenna
Control Box
Card Reader
& TF Card
Cable Tie
Wooden Brush
1 Front Frame
LONGER

INSTALLATION STEPS

1 Place the profiles on a flat table in order, and place four corner grooves into the profiles referring to diagram.



▼ Tighten the M5*20 screws into frames.
Tighten the M4 screws on the corner grooves.

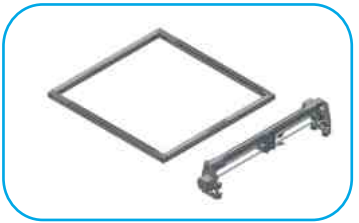


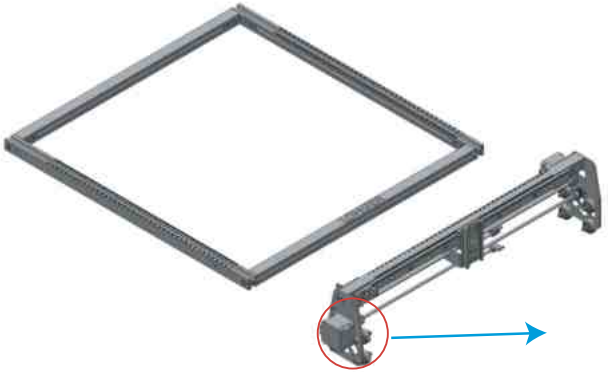
2

Preparation:

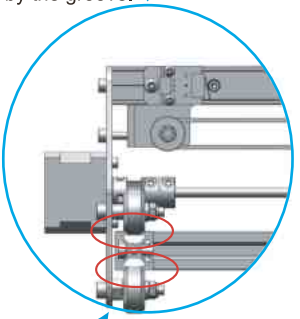
X-Axis Frame, and the frame to complete the assembly.

Install the X-Axis Frame in the V-groove of the left and right Frames along the direction of the arrow.





Pay attention to adjusting the eccentric nut to prevent the roller from being damaged by the groove.



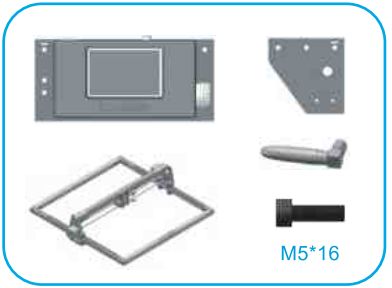
Eccentric nut

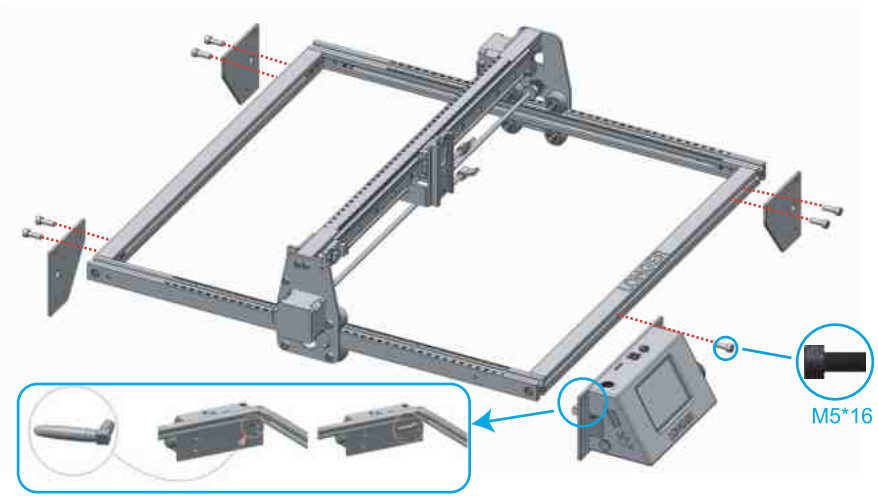
3

Preparation:

Preparation: Support feet x3, engraving machine control box, M5*16 hexagon socket cup head screw x7, antenna.

According to the figure, install the supporting foot, the control box of the engraving machine, and the antenna in the corresponding position.

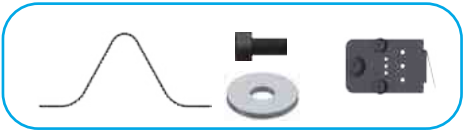




4

Preparation:

Flat washer x4, Timing belt x2, Limit Switch, M5X10 hexagon socket head screw x4.

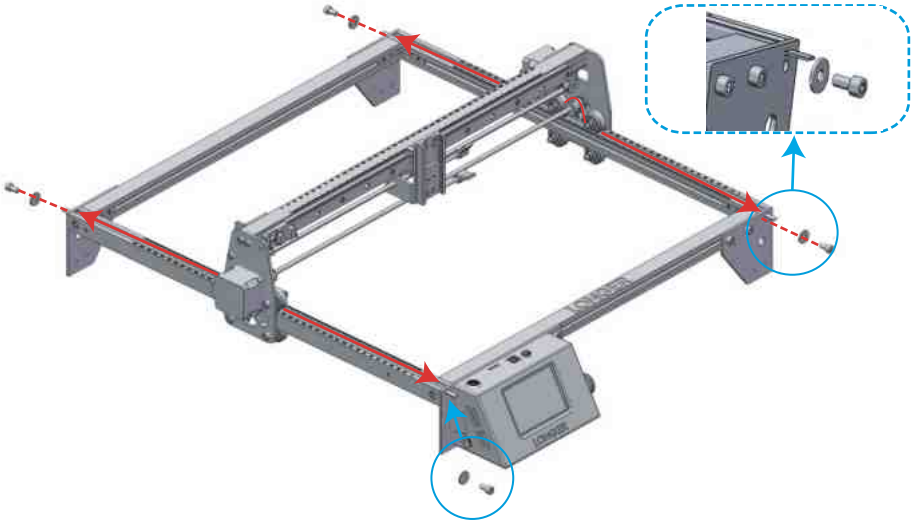


a). Place a timing belt along the red arrow with the tooth face down.

b). Put the flat washer on the M5X10 screw, press the timing belt with the flat washer and tighten the screw.

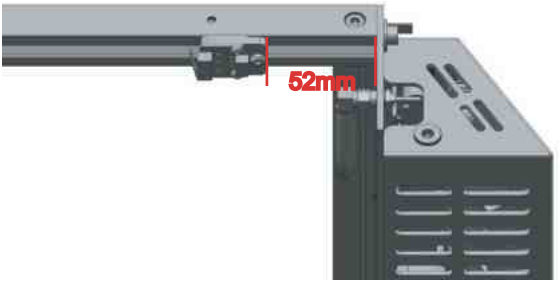
c). Tighten the belt by hand, then fix another end of belt in the manner of previous step.

d). Fix another belt on left frame in the same way.



Note: When securing the timing belt, do not allow the screws and flat washers to over-press the timing belt to avoid damaging the timing belt.

e). Turn the Ray5 40W engraver over, attach the limit switch to the edge of the label, and fasten it wilt a hex key allen wrench, then limit switch is about 52mm from the left sheet metal.



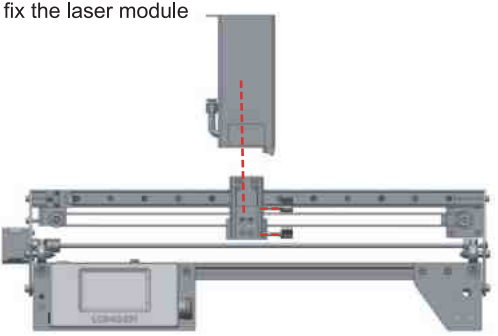
Note: Please install the limit switch attached with label, otherwise it will affect the engraving size or cause the laser head module to collide with the profile when homing.

5

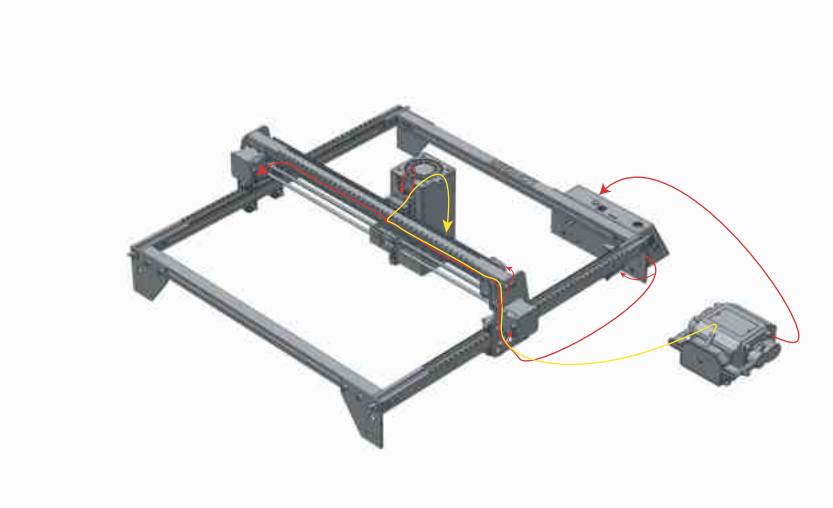
Preparation:

Laser module

First install the laser module on the X-axis frame, then tighten the M4*20 handle screw clockwvisely to fix the laser module



6 As shown in the figure, connect the cables of the control box to the motor, limit switch and laser module. Connect one end of the silicone tube to the laser module and the other end to the air pump. Finally, plug the air pump terminal into the control box port.

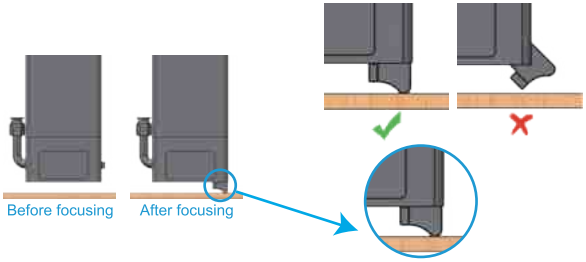


Note: Move the laser module to the upper right corner and use the velcro on the side of the metal plate to secure the cable and silicone tube. Please leave enough cable and silicone tube length to ensure that the laser module can move freely within the maximum engraving range.

7

Adjust laser focus:

Pull out the focusing block, loosen the M4*20 handle screw, move the laser module down, tighten the M4*20 handle screw when the bottom of the focusing block touches the plywood, and close the focusing block



Please reference more details on digital manual in TF card about the operation of Laser Engraver and installation of LaserGRBL or LightBurn.

* Before using the engraver, please rotate it clockwise to release the emergency stop switch, otherwise the Ray5 40W cannot be powered on normally, and be careful not to rotate the emergency stop switch counterclockwise to avoid damage.

LaserGRBL SOFTWARE OPERATION

1 Download

a) Download LaserGRBL from the following link: https://lasergrbl.com/download/

b) Double click the software installation package to start the installation process. Click 'Next' until the installation is completed.

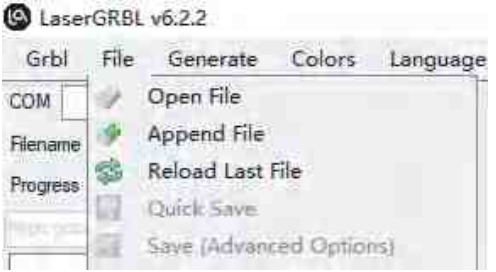
c) Once LaserGRBL is installed, rotate emergency stop switch clockwise, press the power switch button, power up the Ray5, and connect the laser engraver to computer via data cable.

2 Install CH340 driver

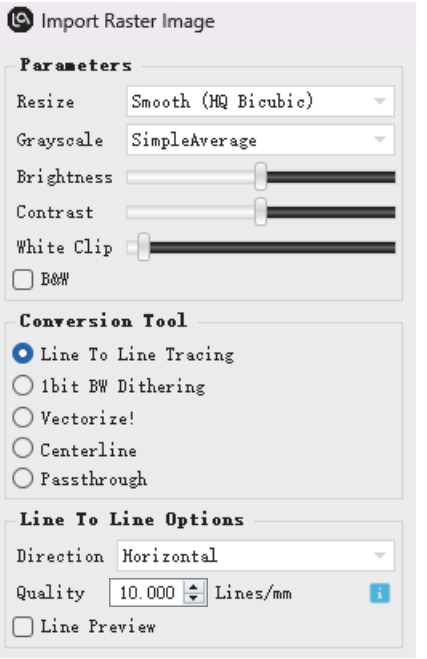
If you cannot find the correct port, install the CH340 driver manually by clicking Menu > Tools > Install CH340 Driver. After installation, restart your computer.

3 Usage

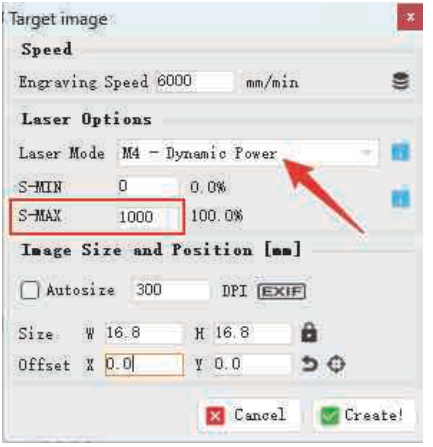
a) First, click the 'File' button, then select 'Open File' to choose the file you want to engrave.



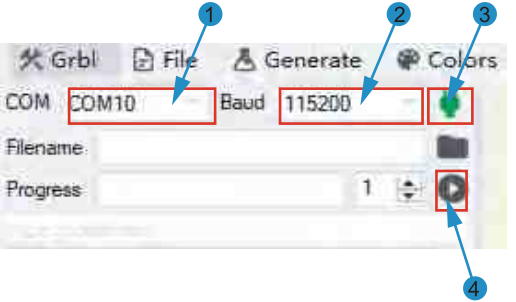
b) After opening the file, set the Quality value to 10 lines/mm for high efficiency.



c) After clicking the Next button, adjust the speed and power values in this window according to parameter table.The S-MAX value should be ten times the actual power. Then, click Create.



d) Select correct port, set the baud rate to 115200, connect to Ray5 40W, click the start button.



For more help with LaserGRBL, please refer to the link:https: //lasergrbl.com/usage/

LightBurn SOFTWARE OPERATION

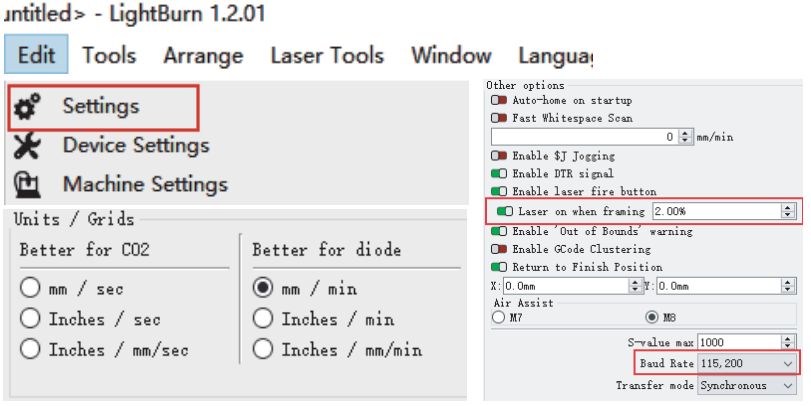
1 Setup

a) Download Lightburn from https: //lightburnsof ware.com/download/ and double-click to install it.

b) Download the 'RAY5_40W.lbdev' file from SD card.

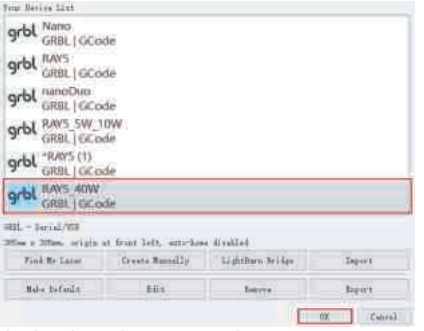
c) Click on Settings, then change the unit to mm/min.

d) Set 'Laser on when framing' to 2.00%, select 115200 for 'Baud rate', and click 'OK'.

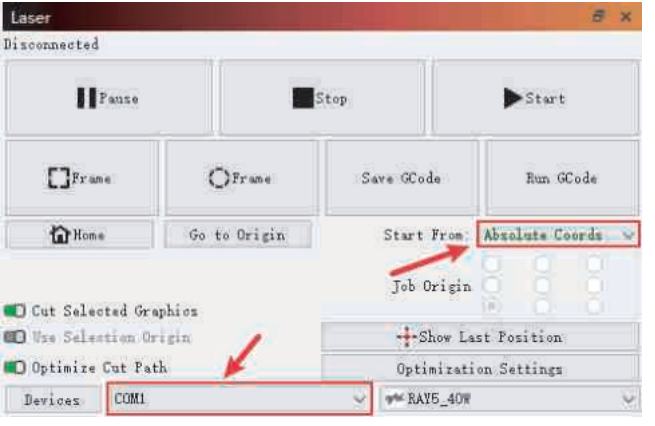


d) Upon launching LightBurn for the first time, the New Device Wizard will prompt to help you set up the machine. Click 'Import' .

Select the ‘RAY5_40W.lbdev’ file and click ‘Open’ , Choose ‘RAY5_40W’ from device list and click ‘OK’.



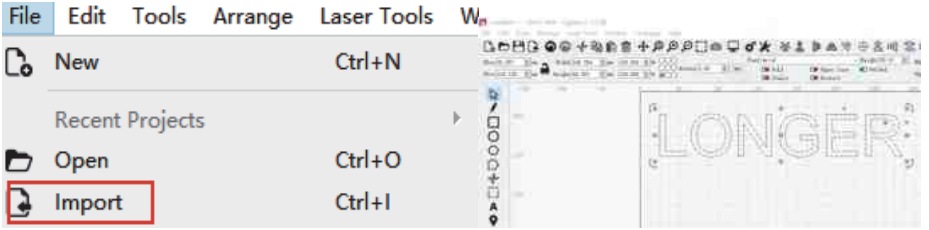
e) If no ports are listed in the drop-down menu, it means no engraver is detected. This could be due to the engraver not being plugged in correctly, not powered on, or the PC missing a driver. You will need to download and install the CH340 driver. It is recommended to use ‘absolute coordinates’ when engraving



2 Import graphic

a) Click File > Import

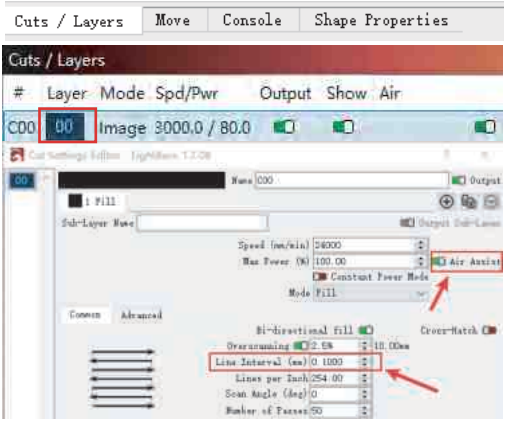
b) Open the project you want to carve



3 Setting parameters

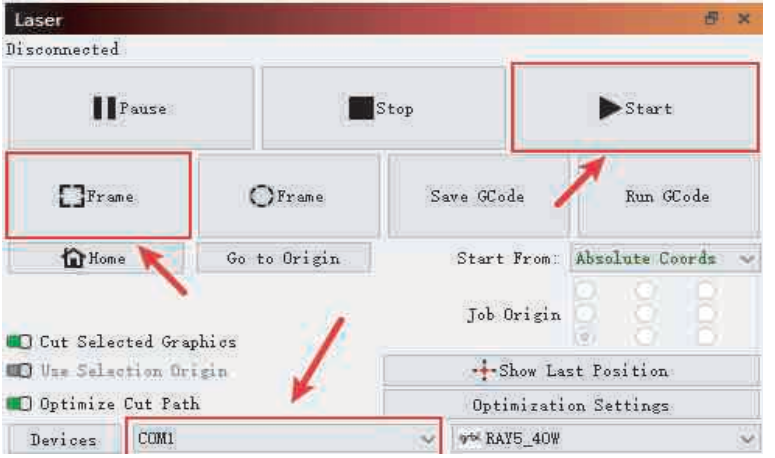
a) Double-click the layer.

b) Modify the laser power and speed accoring to the parameter table, set 'Interval' to 0.1 mm for high efficiency. Enable air if it needs to turn on the air pump.



4 Prepare to engrave

a) Select the graphic, then click ‘Frame’ , to confirm the carving position, and then click ‘Start’ .

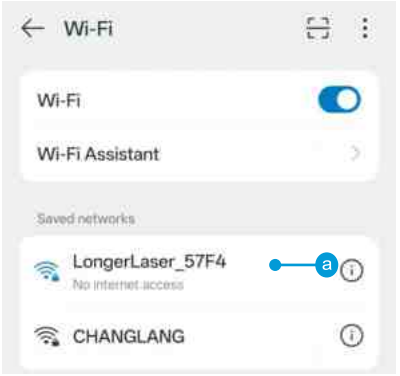


For more help with LightBurn, please refer to the tutorial at: https://lightburnsoftware.com/pages/tutorials.

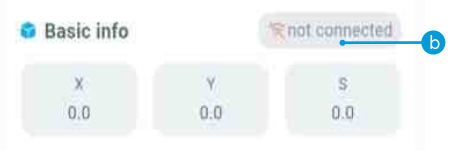
LaserBurn APP Operation

1 Connect to WiFi in AP mode

a) Open the WLAN settings on your phone, search for the WiFi network starting with LongerLaser_XXXX and input the password 12345678 to connect to the Ray5 40W WiFi.

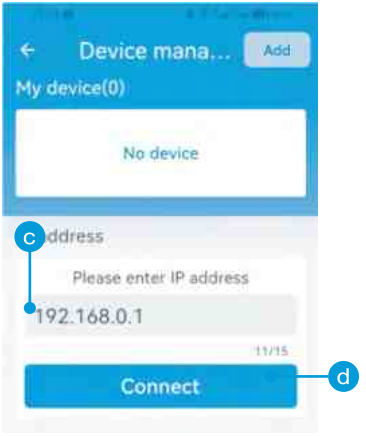


b) Return to LaserBurn and go to the Home page, then click the Not Connected icon.



c) Enter the IP address 192.168.0.1

d) Click Connect. A message will appear saying 'Connection Succeeded' when the connection is successful.

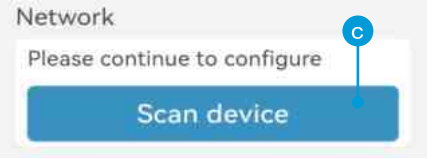


2 Connect to WiFi in STA mode

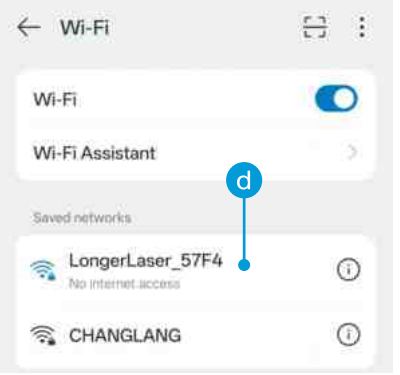
a）Open the WLAN settings on your phone. Run LaserBurn and go to the Home page, then click the Not Connected icon.

b）Enter the network configuration page, then click Add in the upper right corner.

c) Click Scan device .



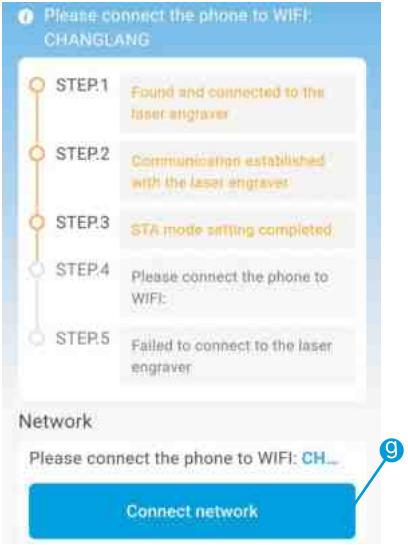
d) Search for the WiFi network starting with LongerLaser_XXXX and input the password 12345678 to connect to the Ray5 40W WiFi.



e） After the connection is successful, return to LaserBurn select Set STA mode.

f) Connect to the router's WiFi (only supports 2.4G), and enter the password.

g) Go back to LaserBurn, click ‘Connect network’ at the bottom of the page, then connect your phone to the same WiFi as the STA mode from the previous.



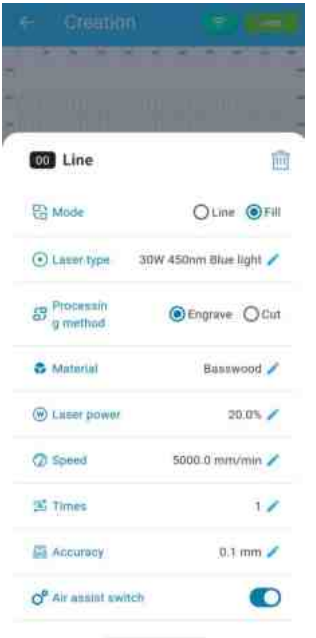
h）When the connection is successful and network process reaches 100%.

i）Clock FINISH at the bottom to return to the device list interface.

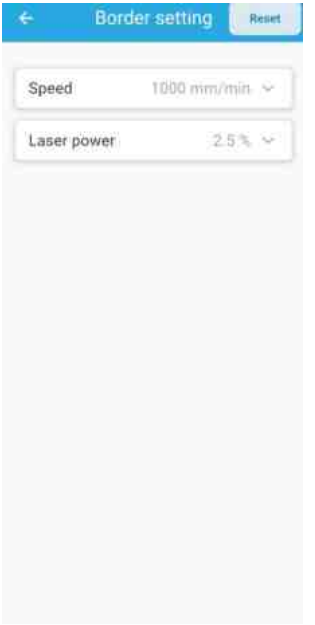
3 Make a project

a) Run the LaserBurn app, connect it to the Ray5 40W, add a graphic, and click ‘Edit’ to set the size and position.

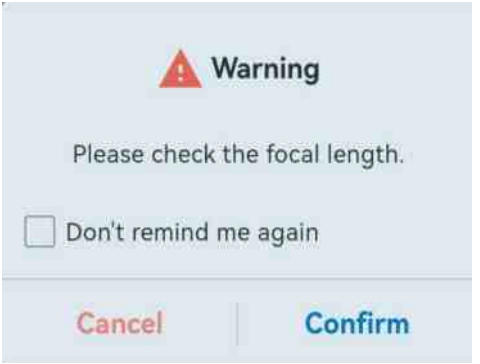
b）Click ‘Layer’ to set the parameter of the graphic, then click ‘next’ in the upper right corner.



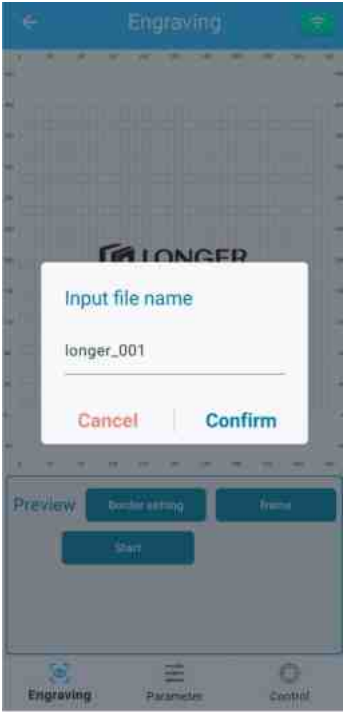
c) Click ‘Next’ to enter the engraving preparation page, Click ‘Border setting’ to set the speed and patrol power. After setting, click ‘frame’ to patrol the border. After confirming the engraving position, click ‘Start’ to engrave.



d) After confirming that the focus is adjusted normally and the goggles are worn, click ‘Confirm’ .

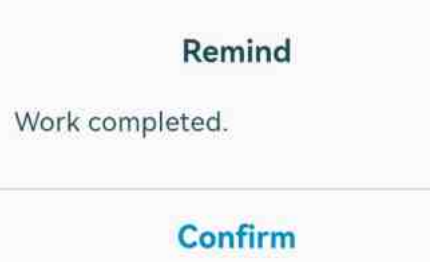


e) Click ‘Comfirm’ to make sure the file name, and then the file starts to upload to the Ray5 40W. After the upload is completed, Ray5 40W will start engraving task.



f) The APP will display the task progress.

g) When task is completed, there will be a Work completed prompt. Click 'Confirm' to return to Home page.



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