LONGER

Nano Quick Start Guide V1.0

Shenzhen Longer Technology Co., Ltd.

LaserBurn APP and software

1. Please scan the QR code below or search for Laserburn on Google or Apple store to download the APP

   Note: After downloading and installing the APP, please read the warnings and precautions in the APP carefully to ensure that you can use this product normally.

2. Download the PC client from the link below. Lightburn is suitable for Windowns and MAC systems, and LaserGRBL is suitable for Windowns systems.

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

   LaserGRBL
   https://lasergrbl.com/download/

   For complex grayscale engraving, it is recommended to transfer the image to the mobile phone album and import it into the APP for engraving, which will have a better effect.

After-sales service

- We support global online technical support services for this product. If you encounter any problems during use, please contact us at any time and we will reply to you as soon as possible.
- Longer mailbox: info@longer.net
- Longer after-sales email: support@longer.net
- Service hotline: (+1) 888-575-9099

Table of contents

Safety Precautions

- Please read the [Safety Guidelines for Use] in detail and remember all the contents to ensure standardized operation.
- This product does not contain any user-replaceable components. Please do not attempt to disassemble Nano or troubleshoot problems by yourself, no matter what the scenario.
- Nano will emit laser when it is working, and the beam may cause burns to the human skin; especially to the human body or animals (pets).The damage to the eyes is extremely serious; in addition, the damage to the screens of electronic products such as mobile phones and Pads is also extremely serious. Properly use and maintain this product, which is extremely important for the safe operation of this product. Regarding the operation and maintenance specifications of this product, please strictly follow the instructions in this manual.
- When operating Nano, be sure to wear goggles at all times.
- Before operating the Nano device, please be sure to read this operating content carefully and strictly abide by the operating procedures.
- Caution – Use of controls or adjustments or performance of procedures otherthan those specified herein may result in hazardous radiation exposure.
- This equipment uses Class IV lasers (strong laser radiation). This laser radiation may cause the following accidents: 1) Ignite surrounding flammable materials; 2) During the laser operation, other radiation and harmful gases, poisonous gases or smelly gases; 3) Direct exposure to laser radiation can cause harm to the human body. Therefore, operators must keep a distance from the equipment and wear protective equipment (such as goggles, protective covers, protective clothing or fire-fighting equipment, etc.). It is strictly prohibited to place flammable and explosive items around the workbench and equipment. At the same time, the working environment must be maintained good ventilate.
- There may be risks in the laser working process. Users should carefully consider whether the material of the object to be engraved is suitable for laser operations.

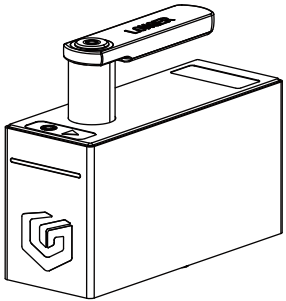
- The operating voltage of the equipment is 12V 4A. An adapter of appropriate specifications should be used for power supply. Operation under overload or unstable voltage is strictly prohibited. And if the ground wire of the power supply (such as a power strip) used in the power plug of this product does not effectively function, the power supply cannot be plugged in, otherwise there will be a very dangerous risk of electric shock.
- This product is equipped with a very precise and dangerous laser source component. It is strictly prohibited to place the device near electrical appliances with strong electromagnetic interference, as this may cause electromagnetic interference. When the laser source is turned on, laser light will be emitted at the speed of light. Users must avoid direct exposure to the laser beam.
- It is strictly prohibited to place any irrelevant total reflection or diffuse reflection objects in the device to prevent the laser from being reflected on the human body or flammable objects.
- Before using this product to engrave objects, please ensure that the emissions produced by laser irradiation of the object to be engraved comply with local laws and regulations.
- During the working of the engraver, an adult must be on duty and cannot leave, otherwise Longer Technology will not be responsible for the losses caused.
- Minors are prohibited from using the engraver alone without adult supervision.

For more safety precautions, please refer to the user manual.

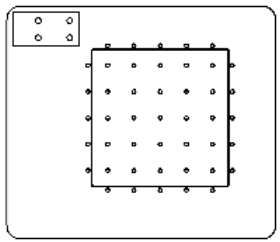
Disclaimer

- Thank you for purchasing Nano. The content mentioned in this article is related to your safety and legal rights and responsibilities. Before using this product, please read this article carefully to ensure that you have the correct settings for the product. Failure to comply with the instructions and warnings in this article may cause injury to you and those around you, or cause damage to the Nano or other surrounding items. Once you use this product, you are deemed to have carefully read the disclaimer and warning information, and understood, recognized and accepted all the terms and contents of this statement. You promise to take full responsibility for the use of this product and the possible consequences. You promise to use this product only for normal purposes and agree to these terms and any relevant regulations, policies and guidelines formulated by Longer Technology. Longer Technology is not responsible for any damage, injury or any legal liability caused directly or indirectly by the use of this product. Users should follow all safety guidelines including, but not limited to, those mentioned in this article.

Product accessories list

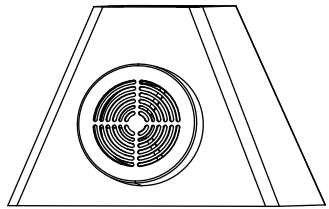


Laser unit



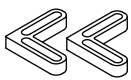
Base plate

Electric lifting bracket

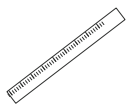


Protective cover

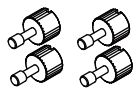
Goggles



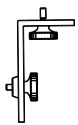
L-shaped positioning piece



Ruler



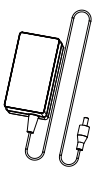
Thumb screws



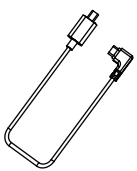
Mounting bracket

M4x8 Screws

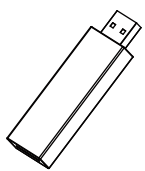
H2.5 Allen wrench



Power adapter

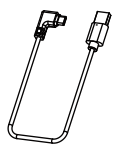


Double type-c cable

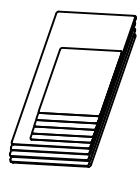


Card reader

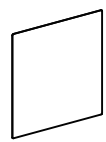
TF card



Data cable



Consumables



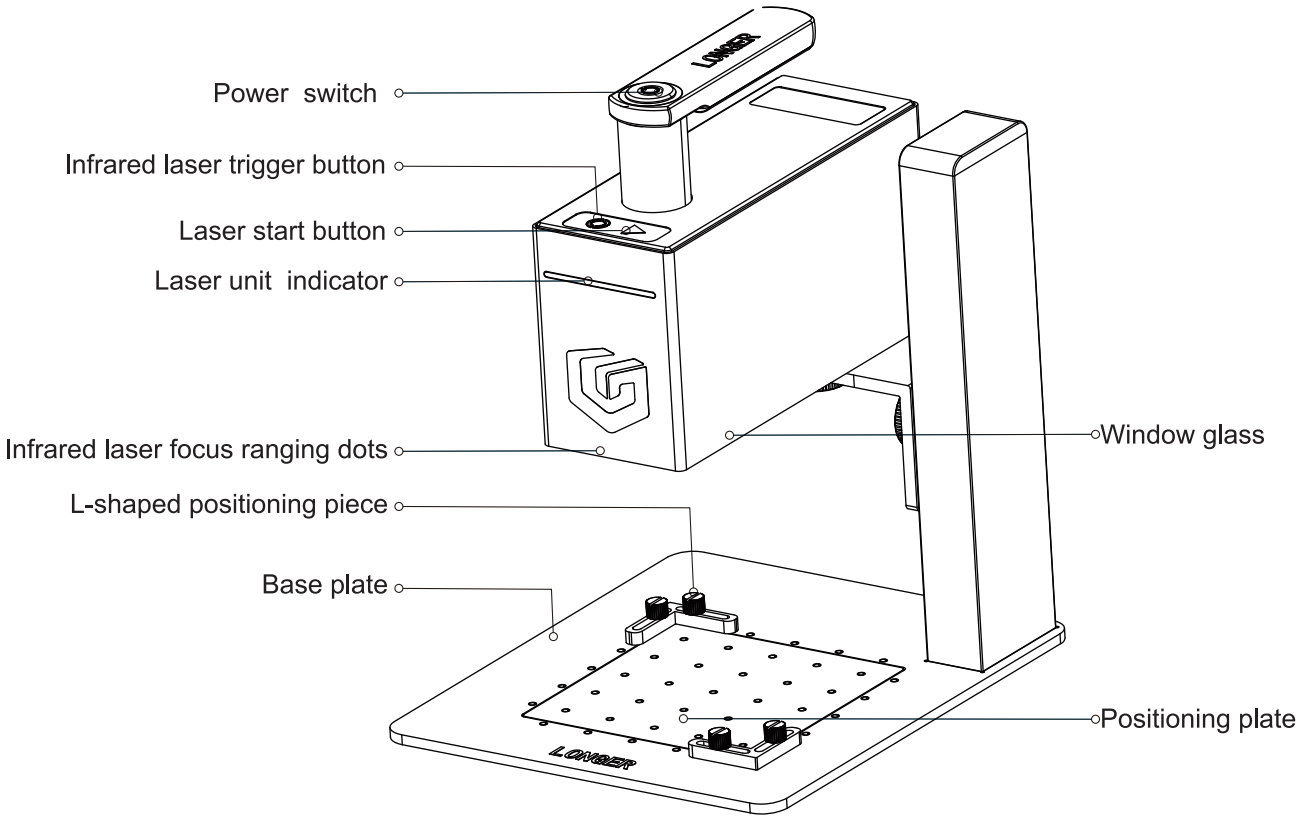
Glasses cloth

Product specification

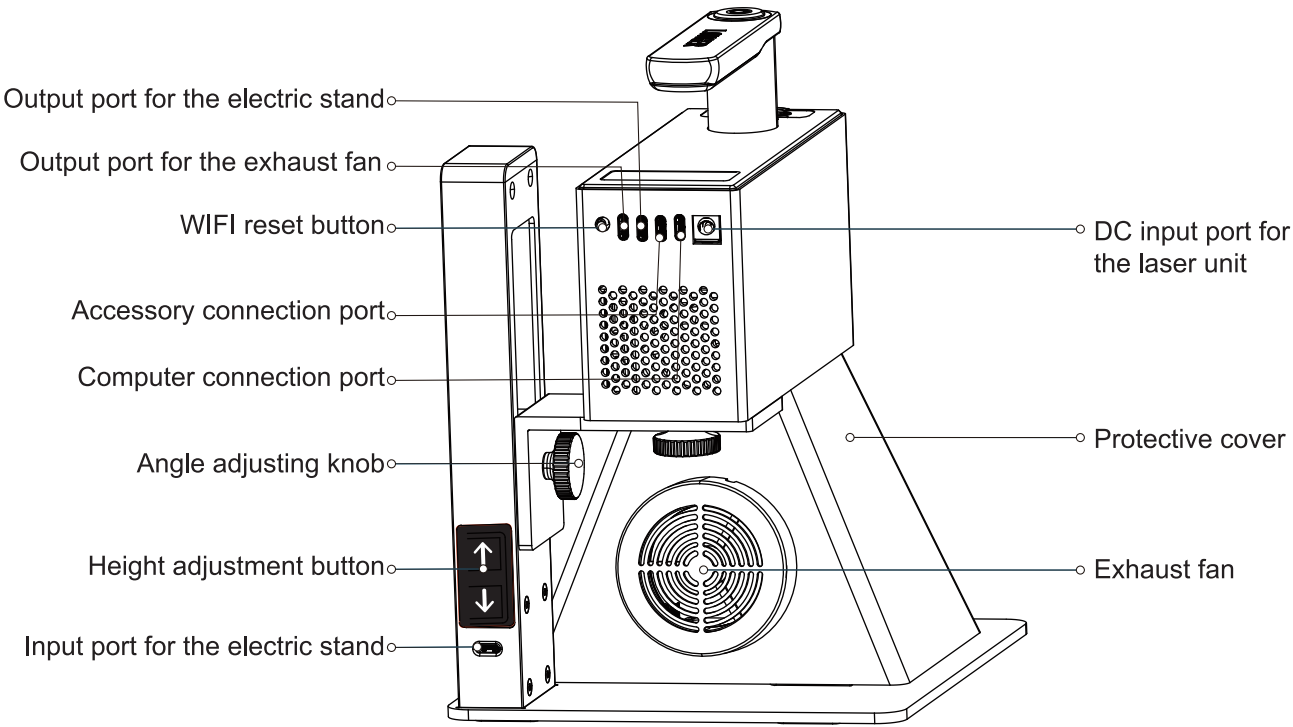
Features		Features	
Model	Nano	Laser Power	6W
Laser Source	One diode laser with FAC	Laser Wavelength	450nm
Working Area	100*100mm	Cutting Depth	6mm
Resolution	3.3K	Engraving Precision	0.05mm
Engraving Speed	2200mm/s	Preview Speed	17000mm/s
Support Format	jpg, bmp, png, dxf, svg, ai, tiff, etc	Lifespan	10000+H
Warranty Period	One year	Preview Mode	Outline preview
Engraving Angle	0~360°	Material of Machine	Aluminum alloy
Connection	WIFI, USB, APP	Safety Certifications	CE; FCC; FDA; RoHS
Support Systems	Windows; MAC; Linux	Product Volume	205mm*179mm*249mm
Gross Weight	3.9kg	Net Weight	2.55kg

Continuous Working Hours	More than 7 hours
Power Adapter	AC Input 100-240V 50/60Hz 1.7A DC Output 12V-4A 48W
Applicable Materials	Engraving or cutting on wood, acrylic, leather, cloth, metal, ceramics, etc
Support Languages	German; Portuguese; French; English; Italian; Spanish; Japanese

Product instruction



Product instruction

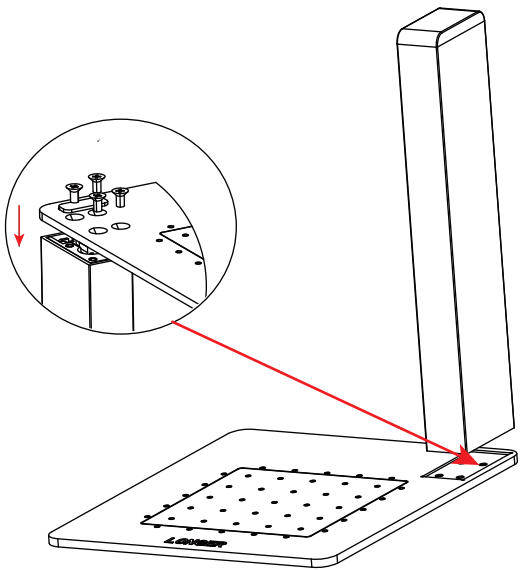


Quick installation

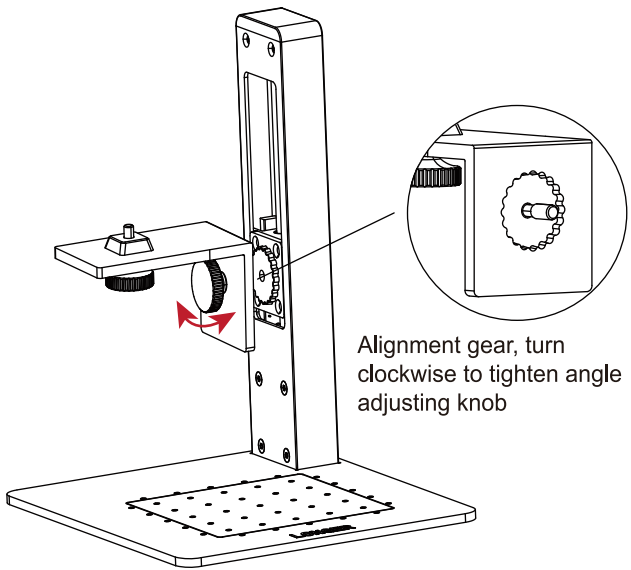
Electric lifting bracket assembly

1) Attach the electric lifting bracket to the base plate using the wrench and 4 M4x8 screws.

When taking out the bracket, be careful that the positioning plate is not fixed on the base. The positioning plate may fall off the bracket.



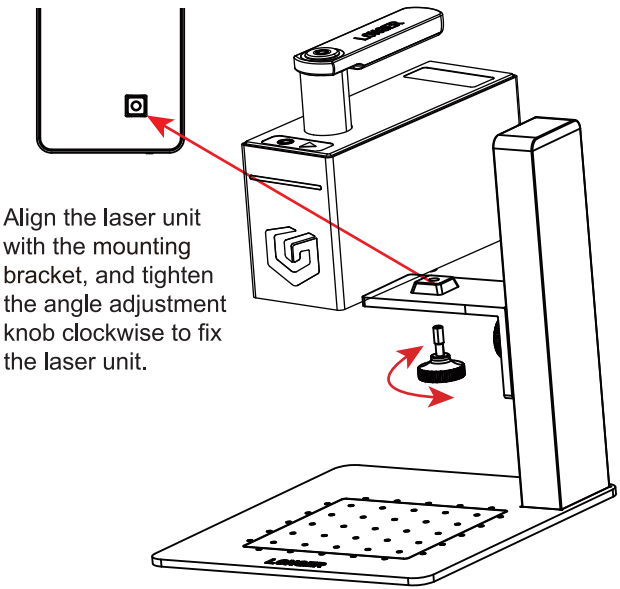
2) Attach the mounting bracket to the electric lifting bracket using the angle adjusting knob.



Quick installation

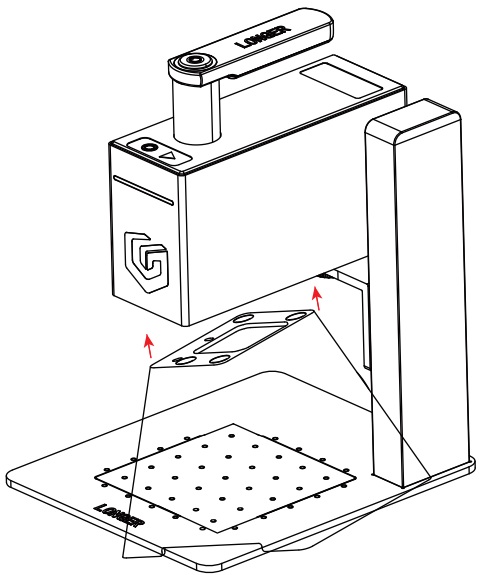
Install the laser unit and protective cover

1) Fix the laser unit on the electric lifting bracket.



Align the laser unit with the mounting bracket, and tighten the angle adjustment knob clockwise to fix the laser unit.

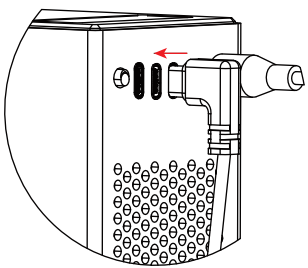
2) Mount protective cover.



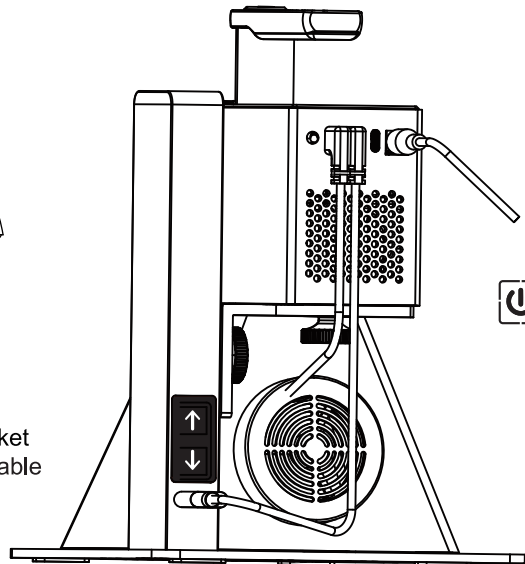
- Note: Make sure of exhaust fan is toward rear

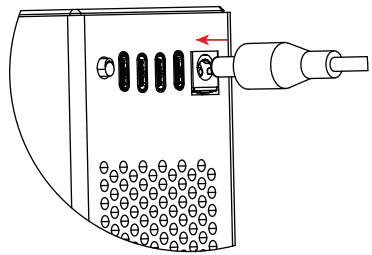
Quick installation

Wiring

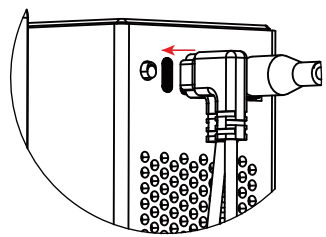


Connect to electric lifting bracket with the blue double Type C cable

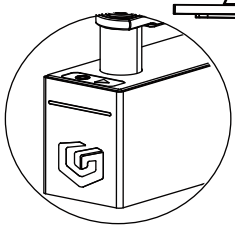




Connect to power supply with the power adapter



Connect to exhaust fan with green Type C cable



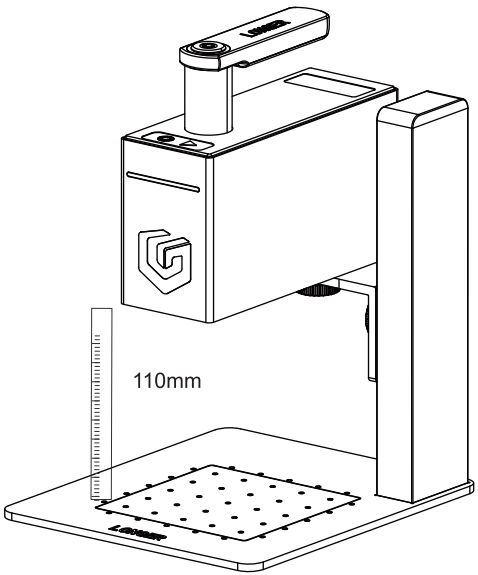
Green light: idle state
Blue light: working status
Red light: alarm status
Yellow light: pause/waiting state

Connect to computer with red data cable

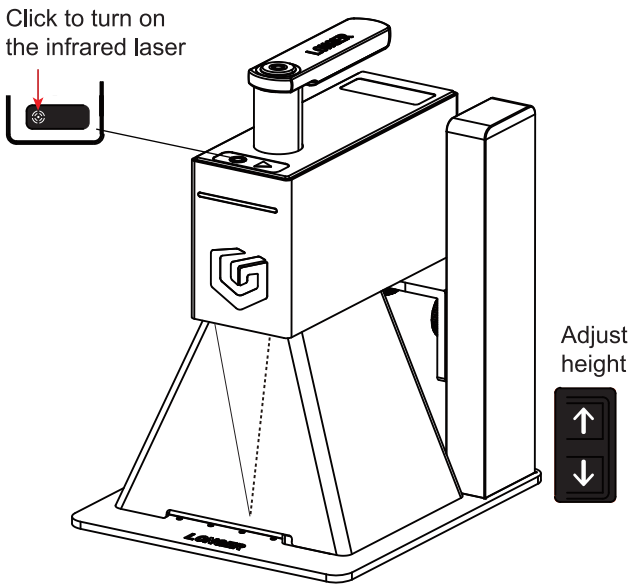
Manual focus setting

Adjust focus

1) Focus by ruler
Adjust the height of the laser module by touching the button of the lifting bracket until the bottom of the laser unit is 110mm away from the surface of the engraved object.



2) Focus assist by infrared laser
Press the infrared laser button and adjust the height of the bracket. When the two laser points overlap into one point, the focus is completed and you can start engraving.

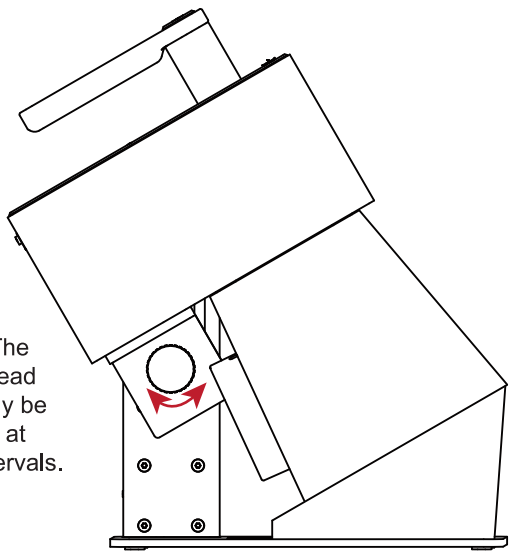


- Note:The red dot is not the engraving center point, it is only used for focus reference

Multiple application scenarios

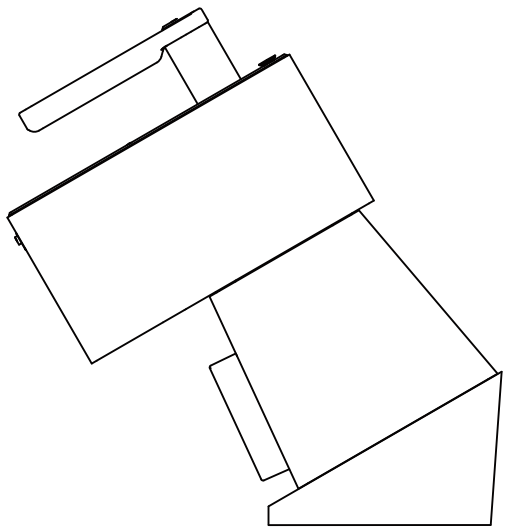
Process materials with slopes

1) Oblique engraving
Turn the angle adjustment knob counterclockwise to loosen it, adjust the angle of the mounting bracket, and after the adjustment is completed, it will mesh with the gear, then turn the angle adjustment knob clockwise to lock it and adjust focus.



- Note: The laser head can only be rotated at 20° intervals.

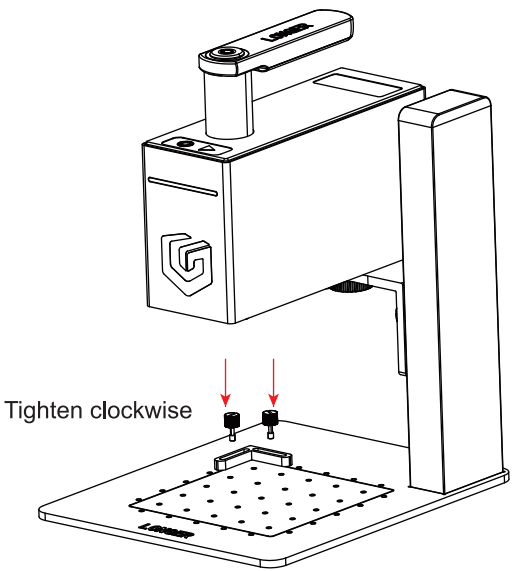
2) Handheld engraving
Hold the handle and place the protective cover against the surface of the object to be engraved, and you can engrave.



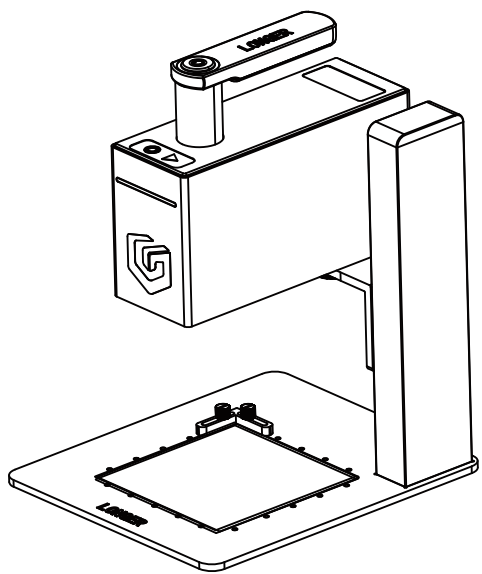
Multiple application scenarios

Batch engraving

1) Place the positioning plate and tighten the two M3X8 thumb screw.



2) Place carving materials.



LaserGRBL software operation

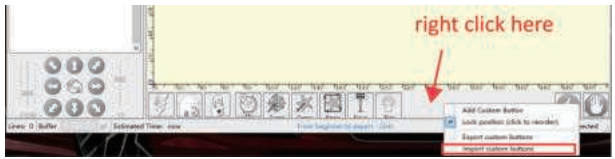
Download

a) Find LaserGRBL software in attached SD card(path:/-software), Or download from the link:https://lasergr-bl.com/download/

b) Double-click the software installation package to start thesoftware instalation, and keep clicking Next until the installation is completed.

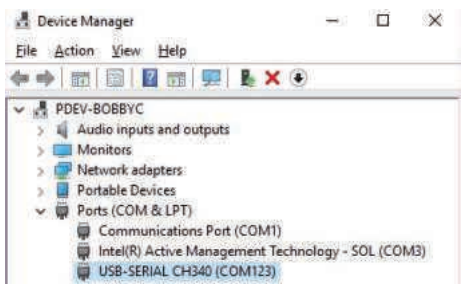
c) After installing LaserGRBL, power up the Nano, press the power switch button, and connect the laser engraver to computer via red data cable.

Import configuration



a) In order to meet the use of Nano in LaserGRBL, it must to import custom buttons. Right-click in the blank area at the bottom and select Import custom buttons, open nano.zbn file to import, click YES to confirm, then there are three new Nano, Slide, Rotary icons.

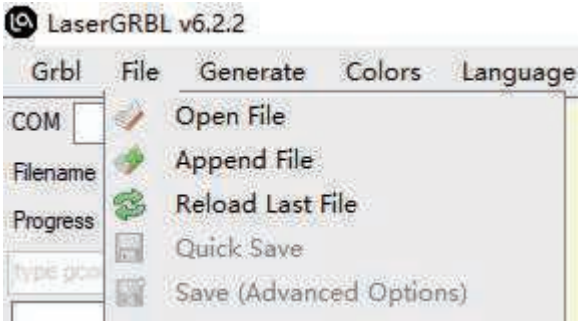
nano.zbn file is stored in the softwares directory of the SD cards



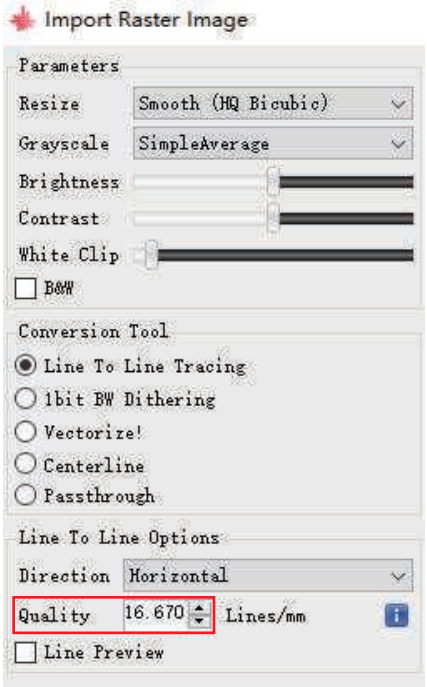
b) If you cannot find correct port, please install CH340 driver manually by click Menu > Tools > install CH340 Driver to install the driver, and restart the computer after installation is completed.

LaserGRBL software operation

Usage

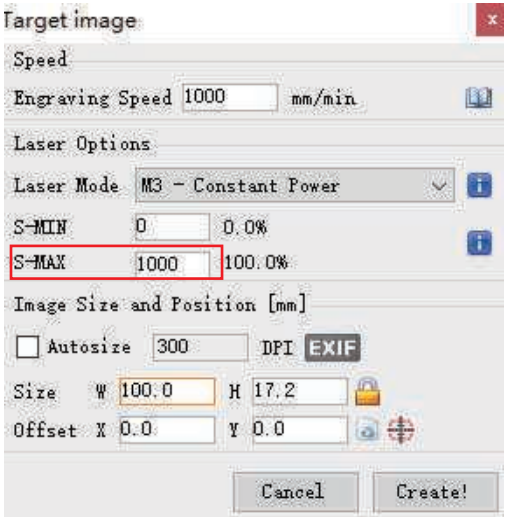


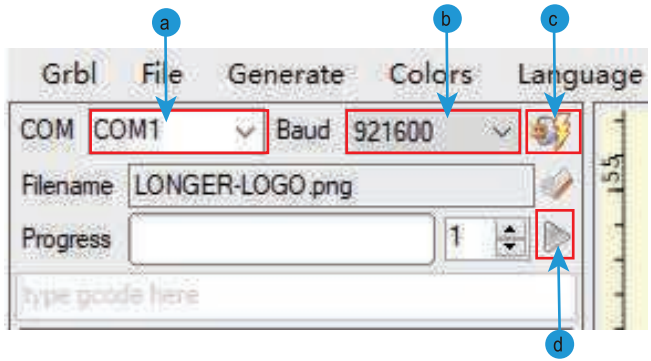
Click the 'File' button first and click the 'Open File' button to select the file that needs to be carve.



After opening, set the Quality value to 16.67Lines/mm.

LaserGRBL software operation





After clicking the Next button, adjust the speed and power value in this window.
The value of S-MAX is ten times the actual power, click Create.

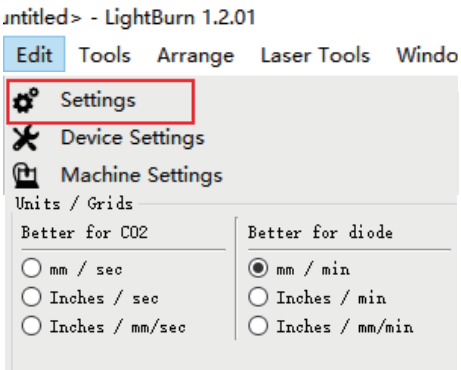
a) Select correct port
b) Set baud to 921600
c) Connect to Laser Nano
d) Click start button

More help information about LaserGRBL, please check the 'Nano User Manual' file in the SD card and refer to the link:https://lasergrbl.com/usage/0

LightBurn software operation

Setup

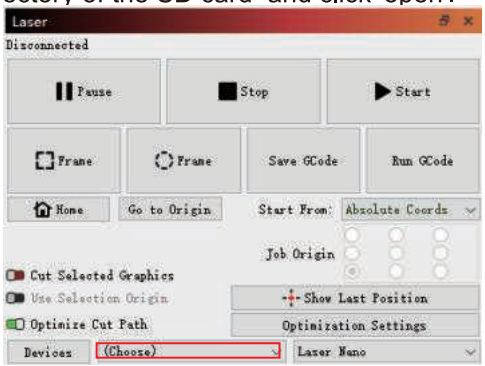
a) Find Lightburn in software folder in SD card or download from https://lightburnsoftware.com/download/, double click to install it.



b) Click Settings, change unit to mm/min.

c) For the first time launching LightBurn, it will prompt a 'NewDevice Wizard' for help you setup machine. Click 'Import'.

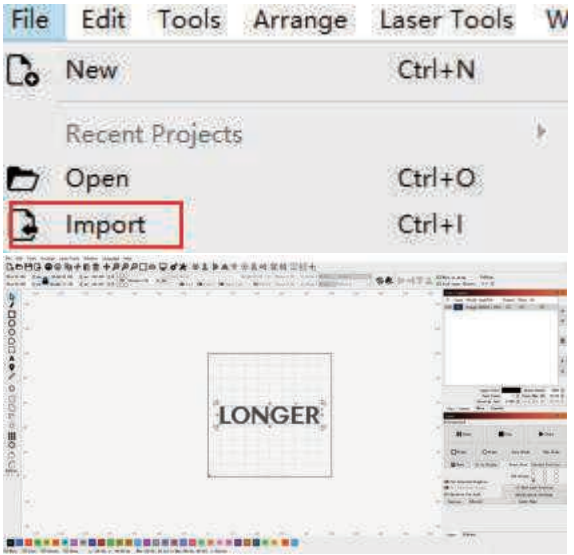
d) Select the 'Nano.lbdev' file in the software directory of the SD card and click 'open'.



e) If no ports are listed in the drop-down, it means that no engravers were found, which could mean that it is not plugged in correctly, isn't powered, or the PC is missing a driver. It needs to download and install CH340 driver.

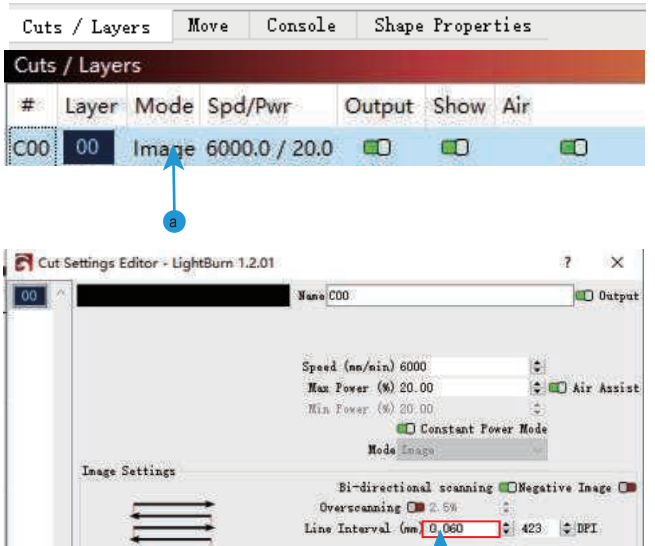
LightBurn software operation

Import graphic



a) Click the File > Import
b) Open the project you want to carve

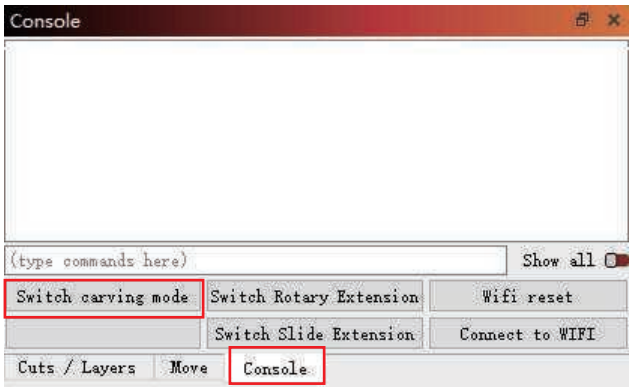
Setting parameters



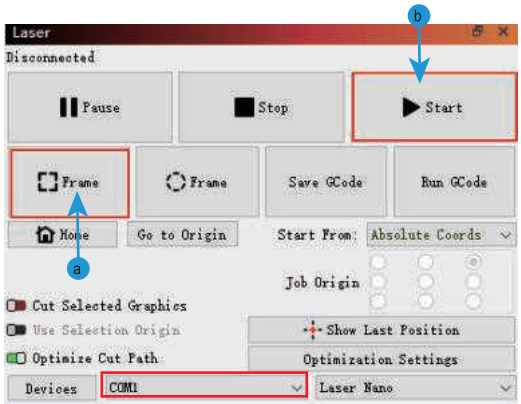
a) Double click the layer.
b) Modify the laser power and speed accoring to the parameter table, set 'Interval' to 0.06mm. Enable Constant Power Mode.

LightBurn software operation

Prepare to engrave



a) Click the 'Console' button first and click the 'Switch carving mode' button.

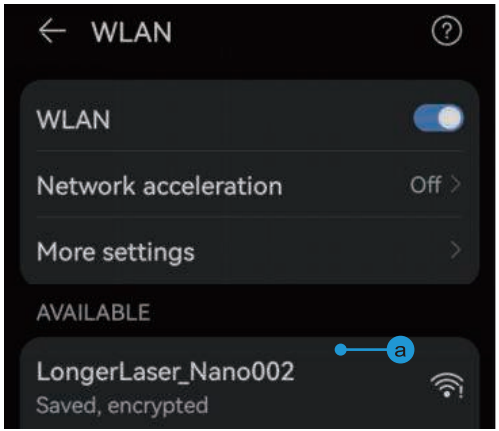


b) Select the correct port connection to click 'Frame' first, confirm the carving position and then click 'Start'.

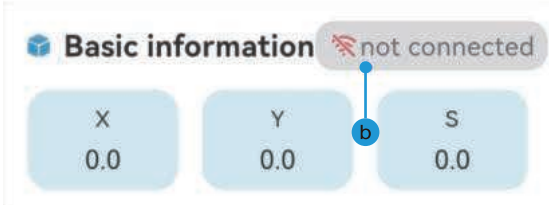
More help information about LightBurn, please check the 'Nano User Manual' file in the SD card and refer to the link: https://lightburnsoftware.com/pages/tutorials

LaserBurn software operation

Connect to WIFI in AP mode



a) Open the WLAN settings on your phone, search for the WIFI starting with LongerLaser_Nano and input password 12345678 to connect the wifi of Nano. If WIFI of LongerLaser_Nano can not be found, please long press the WIFI reset button on the back of the Nano until you can hear three buzzers to reset the WIFI, then search the WIFI list again.

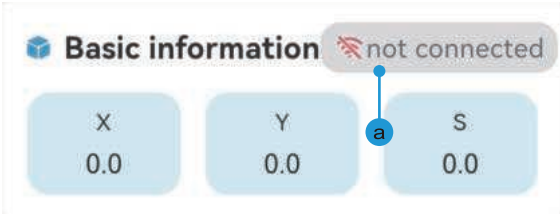


b) Return to LaserBurn and enter the Home page, click not connected icon.

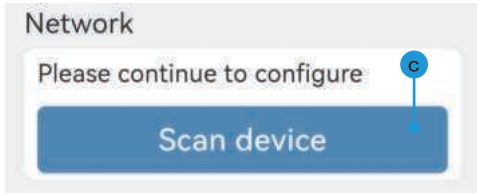
c) Enter the IP address 192.168.0.1
d) Click Connect. There will be a remind ‘connection succeeded’ when connect successful.

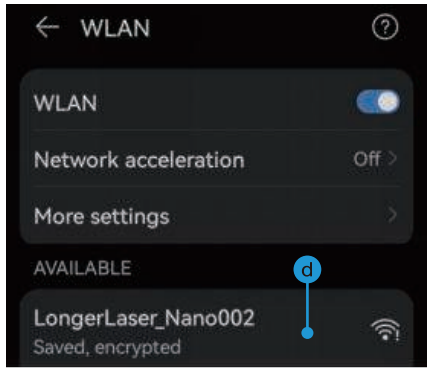
LaserBurn software operation

Connect to WIFI in STA mode



a) Open the WLAN settings on your phone. Run LaserBurn and enter the Home page, click not connected icon.
b) Enter the network configuration page, click Add in the upper right corner.

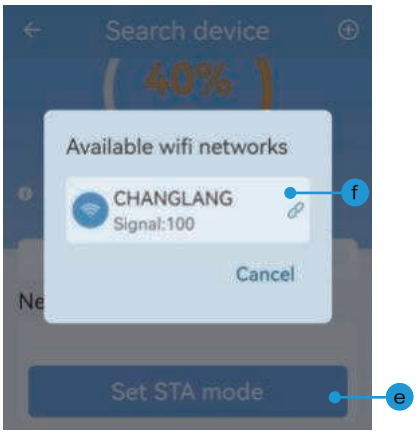




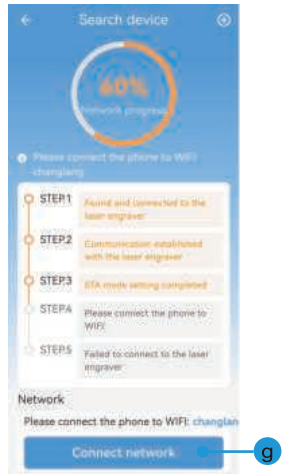
c) Click Scan device.
d) Search for the WIFI starting with LongerLaser_Nano and input password 12345678 to connect the wifi of Nano.

LaserBurn software operation

Connect to WIFI in STA mode



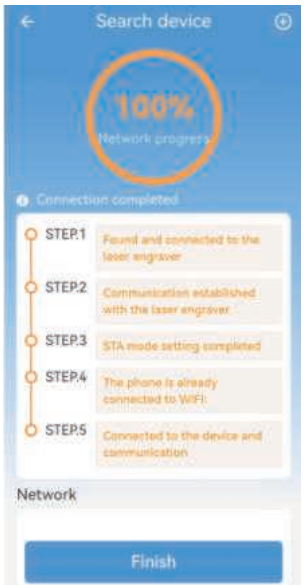
e) After the connection is successful, return to LaserBurn, select Set STA mode.
f) Connect WIFI of router (only supports 2.4G), and enter the password. The indicator light in front of Nano will switch to orange breathing light during connecting, then will turn green if the connection is successful.



g) Back to LaserBurn, click Connect network at the bottom of the page, connect the phone to the same WIFI as the STA mode in the previous step, wait for network configuration.

LaserBurn software operation

Connect to WIFI in STA mode

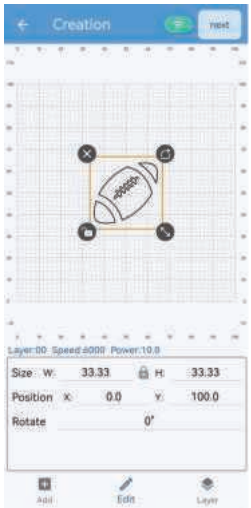


h) When the connection is successful and the network process reaches 100%.

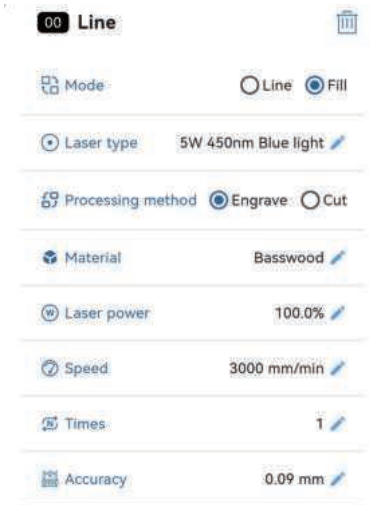
i) Click FINISH at the bottom to return to the device list interface.

LaserBurn software operation

Make a project



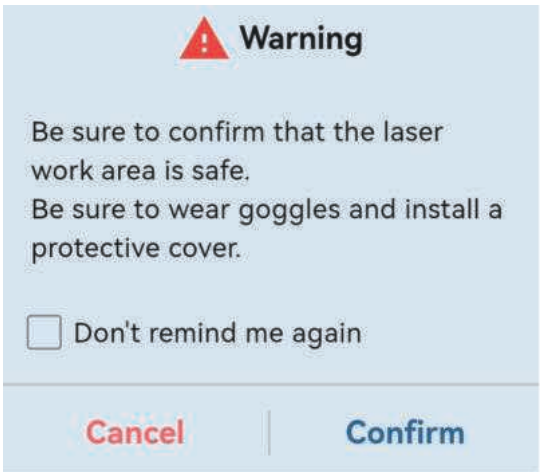
a) Run LaserBurn app and connect the APP to Nano, add a graphic, click Edit to set size and position.



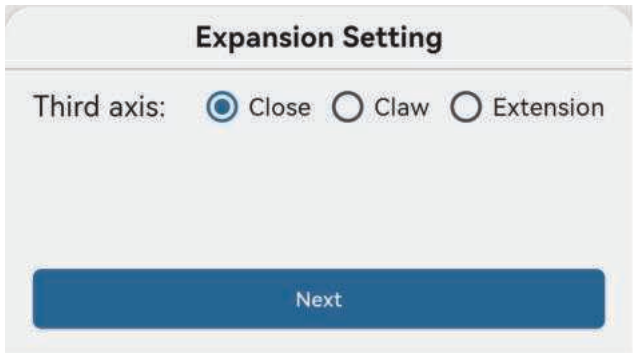
b) Click Layer to set the parameter of the graphic, then click next in the upper right corner. Accuracy has only two values options, 0.09mm or 0.06mm.
0.06mm for high precision
0.09mm for high efficiency

LaserBurn software operation

Make a project



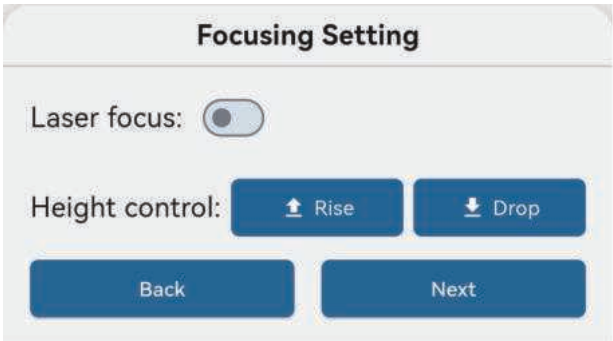
c) There will be a warning window, make sure the work area is safe, wear goggles and protective cover is installed , click Confirm.



d) Set the third axis option, select None for the Nano, click Next.

LaserBurn software operation

Make a project

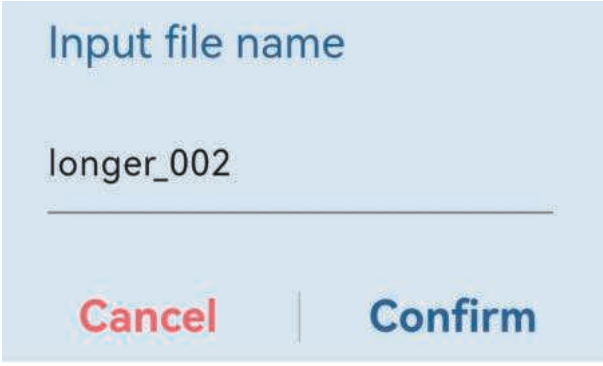


e) Set the focus, enable the Laser focus, the infrared laser will be turn on, click Rise or Drop to adjust the height until two infrared dots coincide with each other, click Next.

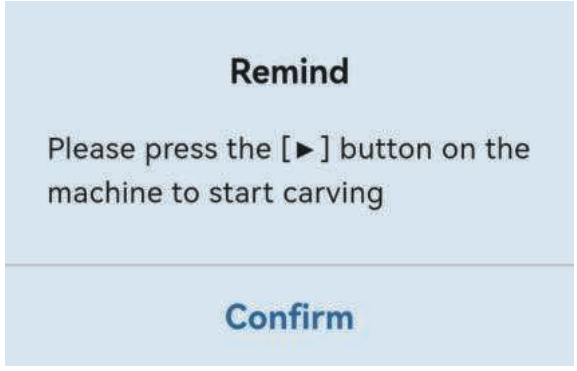
f) Click Border to preview the work position of the graphic to confirm the position of material is correct. If you cannot see the blue light clearly during preview, you can increase the blue light power appropriately, but be careful to avoid burning the engraving material, click Start.

LaserBurn software operation

- Make a project



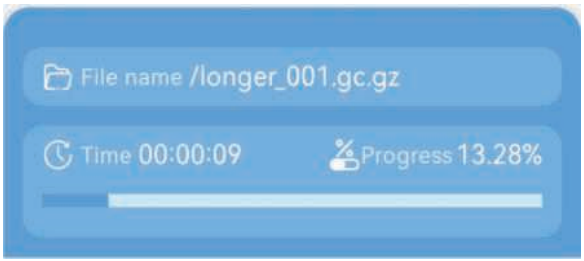
g) After confirming that the focus is adjusted normally and the goggles are worn, click Confirm to make sure the file name, and then the file starts to upload to the Nano.



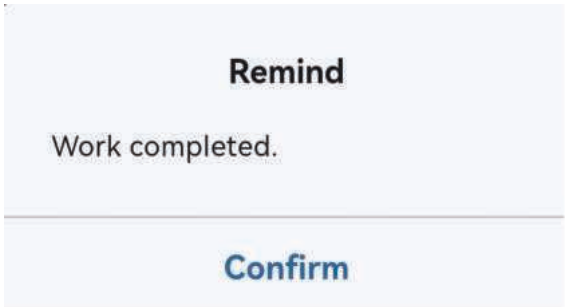
h) After the upload is completed, click Confirm and press the start button on the laser module to start the engraving task.

LaserBurn software operation

Make a project



i) The APP will display the task progress.



j) When task is completed, there will be a ‘Work completed’ prompt. Click confirm to return to Home page.

For detailed operation, please check the 'Nano User Manual' file in the SD card

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  2) Failure or damage is caused by any installation, repair, alteration, addition, or disassembly by agencies or personnel who are not authorized by LONGER;
  3) Modification, alteration or removal of the original identification information of the product or components.

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We provide global online technical support services. If you encounter any problems, please contact us.