



ACMER

ACMER P1 LaserGRBL Beginner's Guide



Disclaimer



Please read the following carefully before using LaserGRBL on the ACMER P1

- ACMER P1 Laser Engraver supports the most popular engraving software LaserGRBL.
- LaserGRBL is an open source, easy to use and powerful software, but LaserGRBL only supports Windows (Win XP/Win 7/ Win 8/XP/ Win 10).

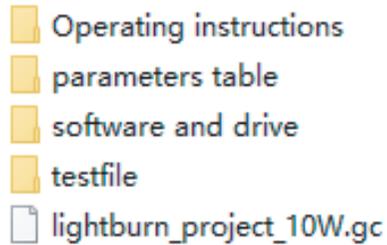
Obtain and install LightBurn

- The ACMER P1 Laser Engraver receives mobile commands from the computer in real time, and the engraver needs to stay connected to the computer and cannot close the engraving software (LaserGRBL or LightBurn) during the engraving process. In addition, the configuration of the computer can affect the speed and even the quality of the engraving. The following will focus on the installation and use of LaserGRBL software.
- **Note:** It is recommended that you adjust your computer's power settings to "Never Sleep" mode.

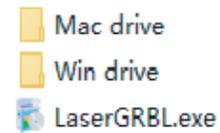
1

Install LaserGRBL

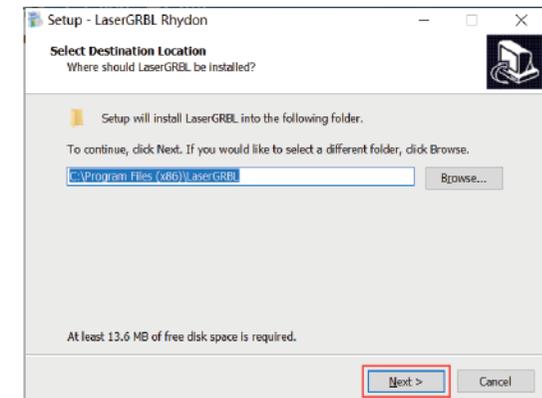
Section 1. Download LaserGRBL software (Only apply to Windows system)



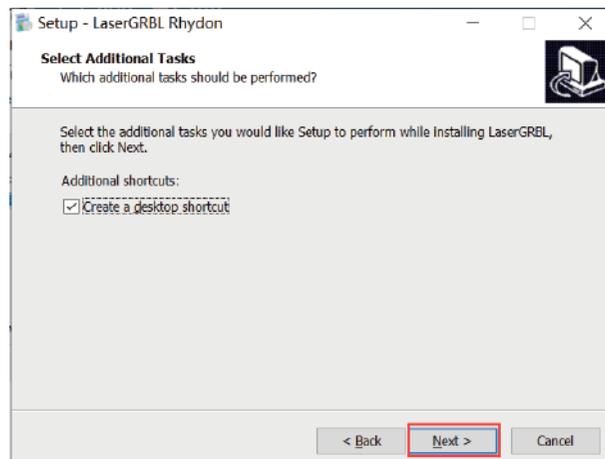
1. Open the file with the machine or from the LaserGRBL website (LaserGRBL website: <http://lasergrbl.com/download/>.) to download software installation packages.



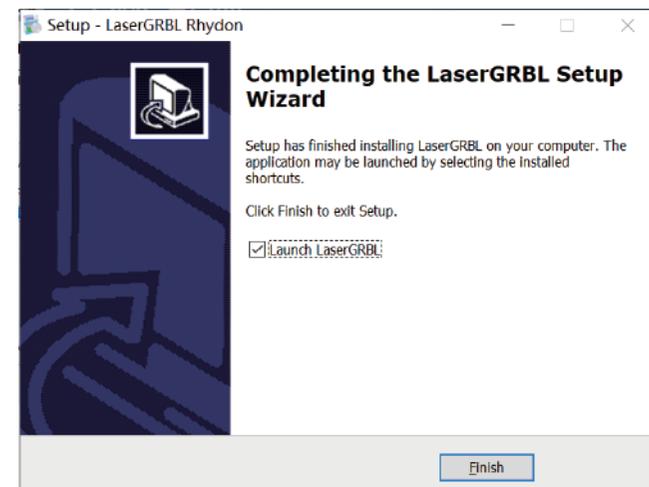
2. Double click "LaserGRBL".



3. Choose the installation path, Default path (C:\Program Files\LaserGRBL).
Choose "Next" to continue



4. Create a desktop icon.
Choose "Next" to continue.



5. Complete setup.

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Connect ACMER P1 Laser Engraver

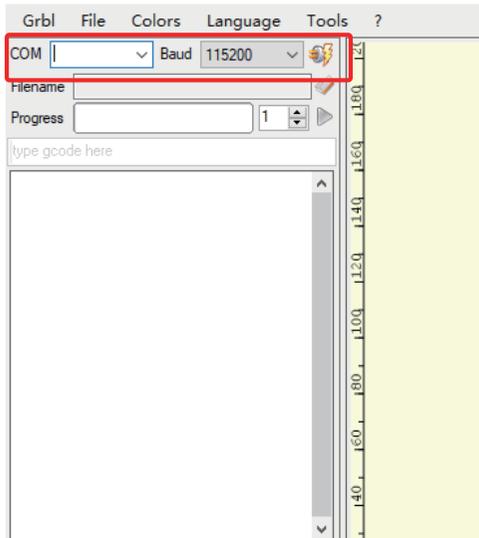


Tip: One computer can open several LightGRBL softwares to connect several engraving machines. When you operate several engraving machines, please make sure to confirm whether the COM port information corresponds to the device you are using.

1. Connect the ACMER P1 laser engraver to a computer with LaserGRBL software and plug in the power supply.



2. Open LaserGRBL software and select the correct port number and baud rate: software-115200



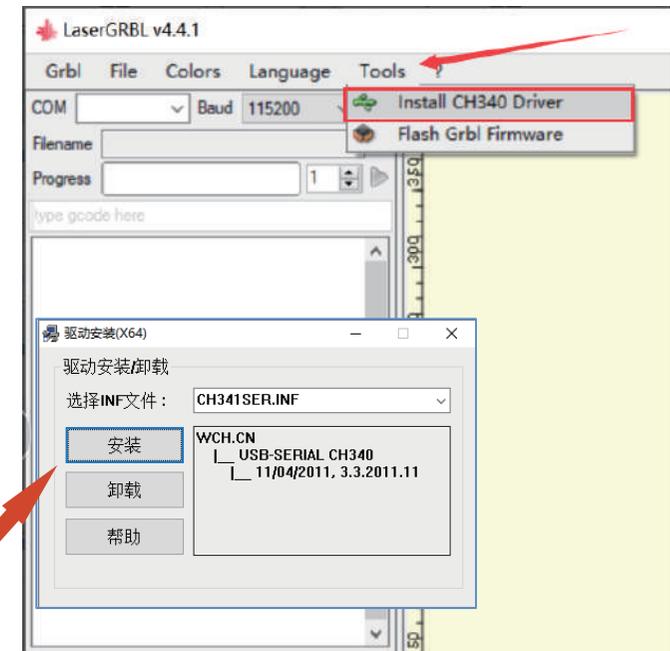
a. Generally, COM ports don't need to be selected manually. But if you have more than one serial devices connected to the computer, you need to select it manually. You can find the port of the laser engraver to create in the Device Manager of Windows system.

- Operating instructions
- parameters table
- software and drive
- testfile
- lightburn_project_10W.gc

Mac drive

Win drive

CH340SER.EXE



b. If the COM port doesn't show on the interface, please check whether the driver is installed and please install the CH340 driver.

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Unlock

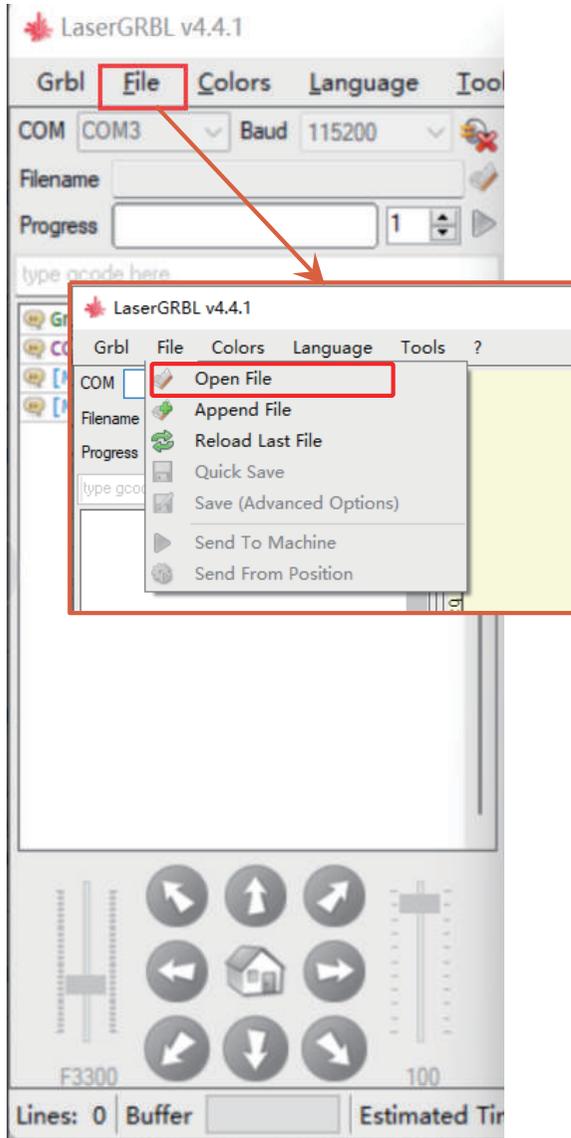
The screenshot shows the LaserGRBL v4.7.1 software interface. The window title is "LaserGRBL v4.7.1". The menu bar includes "Grbl", "File", "Colors", "Language", "Tools", and "?". The main interface is divided into several sections:

- Top Left:** COM port selection (COM4) and Baud rate (115200). A red box highlights the connect button (a plug icon with a lightning bolt) with the annotation "1: the connect button".
- Left Panel:** A text input field for "type gcode here" and a message log showing "[MSG:Using machine:MKS DLC32]". A red box points to the message log with the annotation "2: Prompt for firmware version number after the connection".
- Bottom Left:** A control panel with directional arrows, a home button, and a speed slider set to F1000.
- Bottom Center:** A toolbar with various icons. A red box highlights the lock icon (a padlock) with the annotation "3: the unlock button".
- Right Panel:** A large yellow coordinate grid with axes labeled from 0 to 1600. The current position is shown as "X: 0.000 Y: 0.000".
- Bottom Status Bar:** Displays "Lines: 0", "Buffer", "Estimated Time: now", "Engraving myths and truth (video)", "S [1.00x] G1 [1.00x] G0 [1.00x]", and "Status: Idle".

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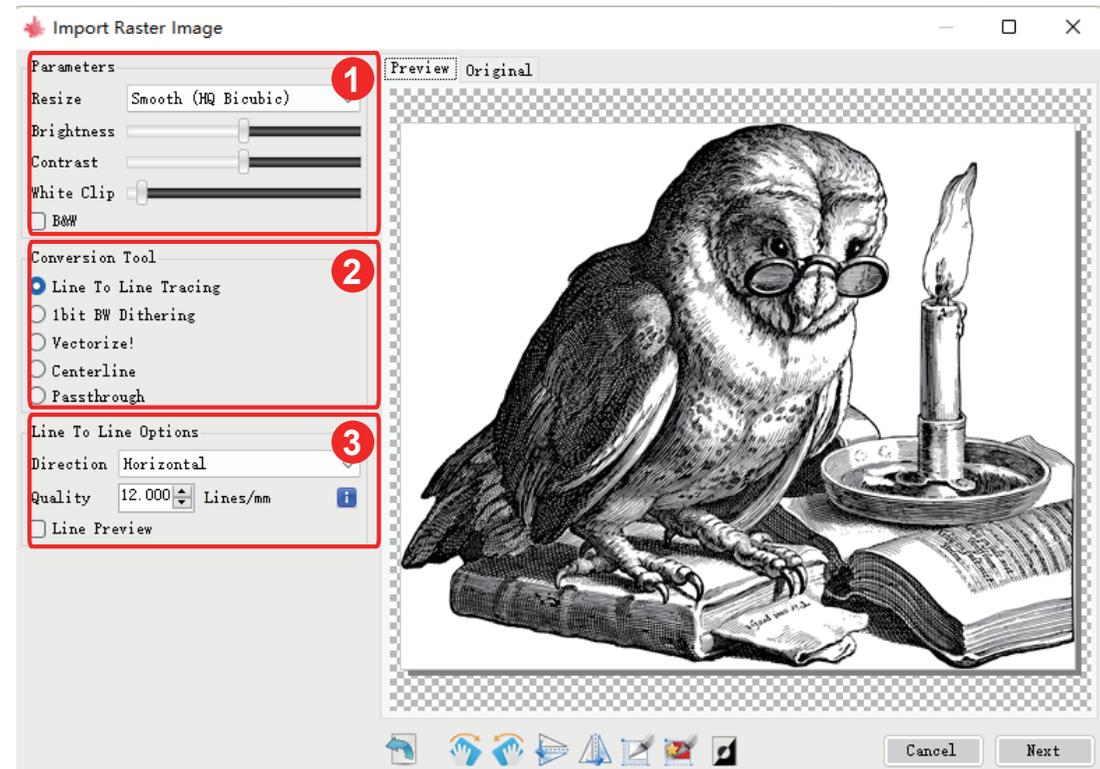
Import images

1. Open File and add the image to be engraved



2. Set engraving parameters (please see the next page for details)

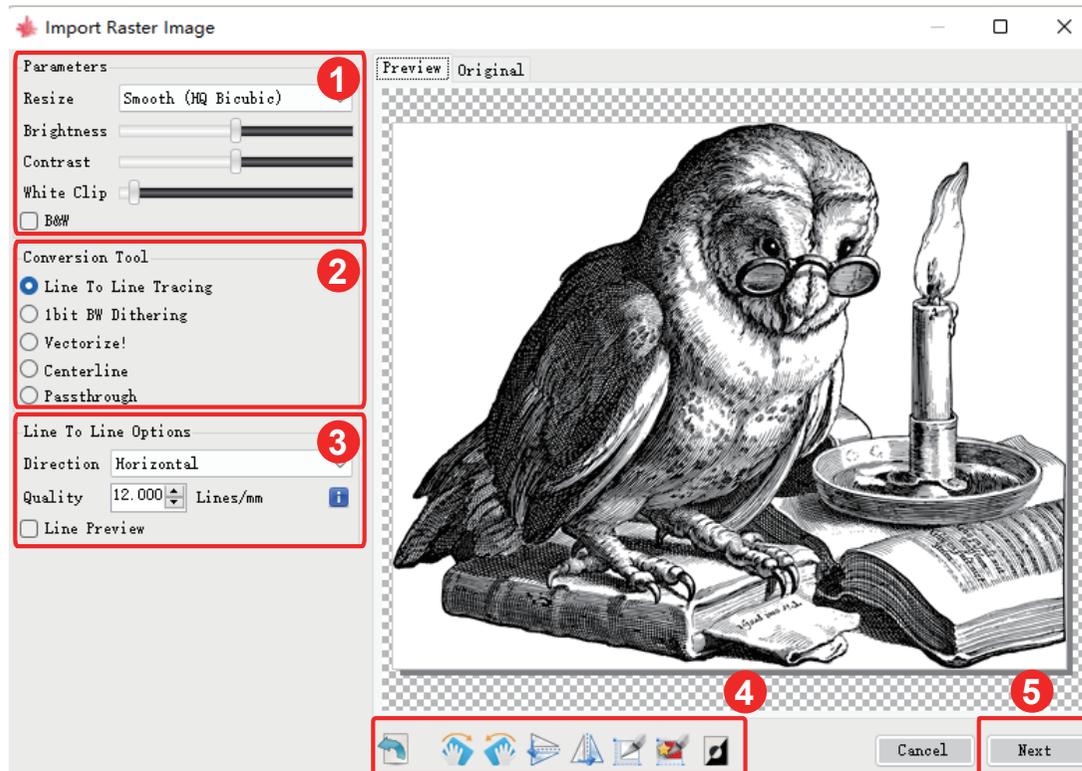
- 1 Adjust the brightness and contrast of the picture according to the set mode; (if you wanna use the cut mode, please select vector image and no fill)
- 2 Set up conversion tools (e.g. grayscale mode, dot matrix mode, vector graphics, etc.)
- 3 The higher the quality of the picture, the better the engraving effect will be;



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Setting parameters 1

1. Please carefully set the engraving parameters



1 LaserGRBL can adjust the brightness, contrast, and other attributes of the target image. When the parameters are adjusted, you can see the actual effect in the preview window on the right and can try to adjust it to what you think is satisfactory.

2 The engraving mode is usually selected as "progressive tracking" and "1bit jitter". 1-bit jitter is more suitable for engraving grayscale images. If you want to cut, please select vector or centerline engraving mode and choose no fill.

3 Engraving quality essentially refers to the line width of the laser scan. This parameter depends primarily on the size of the laser spot of the engraver. The Z1 engraver applies a square spot of .08mm. Therefore, the recommended engraving quality range is 8-20 (commonly 12).

4 At the bottom of the preview window, you can also rotate, mirror, and cut the image.

5 After completing the above settings, click next to enter the engraving speed, engraving energy, engraving speed to set the size of the engraving

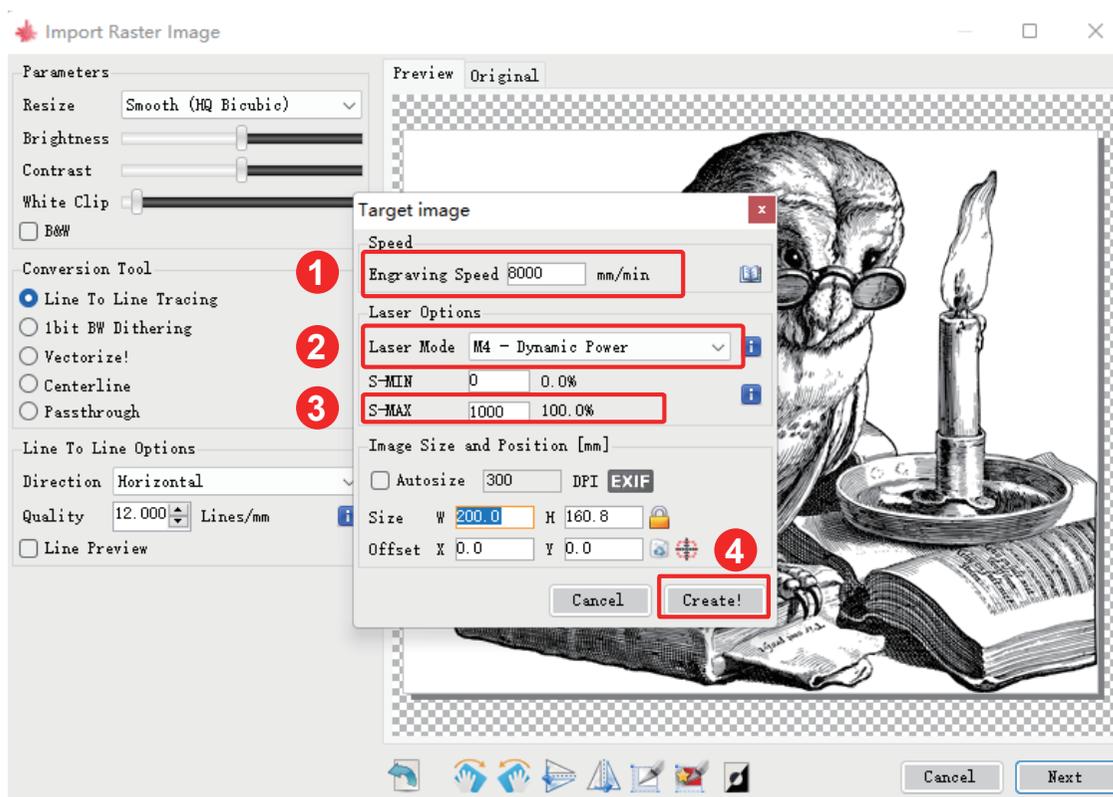
5

Setting parameters 2

2. After completing the previous step of setting, then select the carving speed, carving power, and the carving size (The carving power can be set according to the recommended parameters)



Tip: Please ensure that the size you need to engrave does not exceed the engraving range!



1: Different materials correspond to different carving speed, we recommend that you refer to the carving parameters table; of course you can test different carving effects according to your carving materials.

2: In the laser mode selection, there are two commands M3 and M4 to turn on the laser. It is recommended to use the M4 command for engraving and M3 command for cutting. If your software only has the M3 command, please check if the laser mode configuration is on in GRBL. Please refer to the official description of "LaserGRBL" for the description of GRBL configuration.

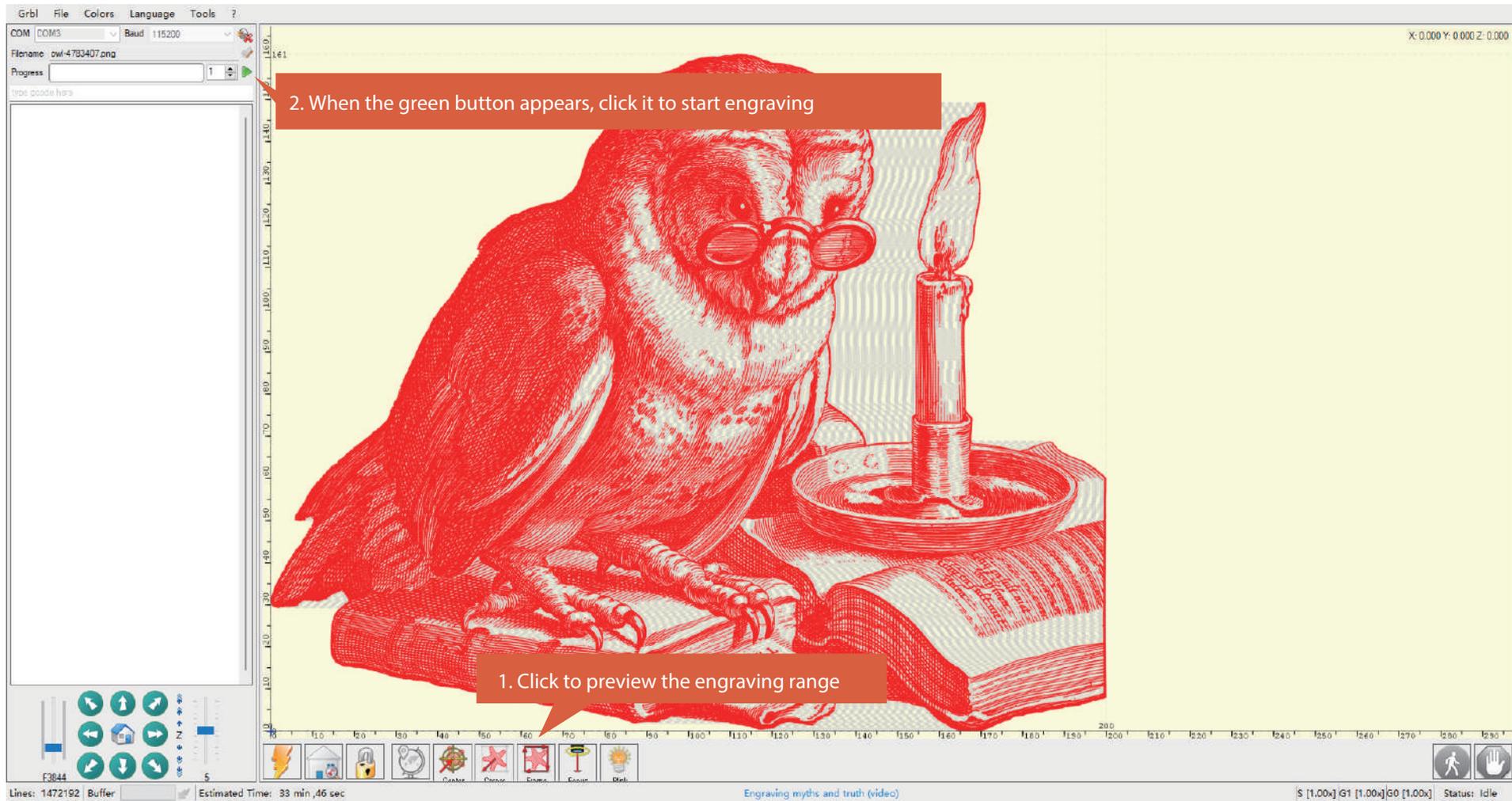
3: The choice of engraving energy depends on different materials, we recommend you to refer to the engraving parameters table we provide, which has the recommended engraving parameters for common materials.

4: Finally set the size to be engraved, click the "Create" button to complete all the settings of the engraving parameters

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Start engraving 1

Manually move the laser head of the machine to the engraving position, click on the preview, and then click on the green button to start the engraving.



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Introduction of LaserGRBL



Reset button: You can click the reset button when need to pause the engraving or when there is an abnormal situation.



Return button: Click the button, the X, Y-axis will run to the mechanical origin. It is recommended that when in large size carving, you could click the button to return to zero before the engraving.



Unlock button: After resetting, you need to click the unlock button;



Origin button: When the button is clicked, the current position is taken as the origin.



Unlock button: After resetting, you need to click the unlock button;



Origin button: When the button is clicked, the current position is taken as the origin.



Preview button: When the button is clicked, the X and Y axes will be moved to the maximum square size of the engraving pattern.



Open Light button: Click the button and the laser will open. If there is no light, please select the light button, right-click the edit button and adjust the power F value

Lines: 7559823 Buffer Estimated Time: 3 hours ,15 min ,18 sec

Lines: The total number of lines of G code. The more lines, the longer the engraving time will be;