

LaserGRBL Software User Manual

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LaserGRBL Operating Guide

Please always wear goggles when using a laser engraver.Using a laser without proper training and protection can result in serious injury and blindness, even at low power output. Laser Classification - Laser Safety Facts (lasersafetyfacts.com)

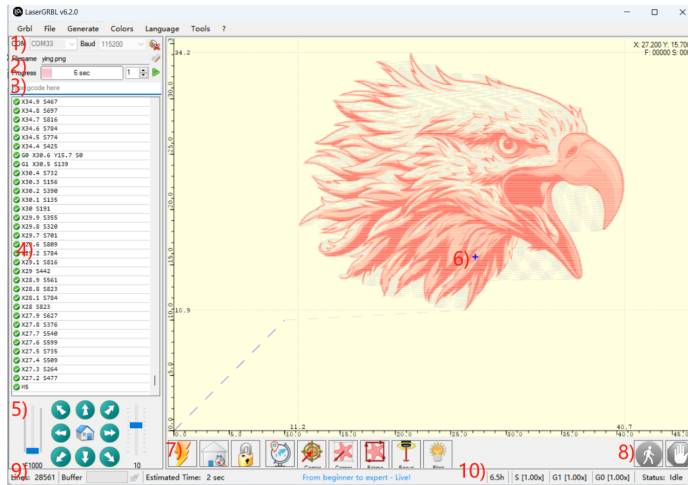
LaserGRBL runs in Microsoft Windows OS

1.Download link

Download – LaserGRBL

2. User interface

Download – LaserGRBL



LaserGRBL user interface

1.Connection control: here you can select serial port and proper baud rate for connection, according to grbl firmware configuration.

2.File control: this show loaded filename and engraving process progress. The green “Play” button will start program execution.

3.Manual commands:

4.Command log and command return codes: show enqueued commands and their execution status and errors.

5.Jogging control: allow manual positioning of the laser. The left vertical slider control

6.Engraving preview: this area show final work preview. During engraving a small blue cross will show current laser position at runtime.

7.Grbl

8.Feed hold and resume: this buttons can suspend and resume program execution sending

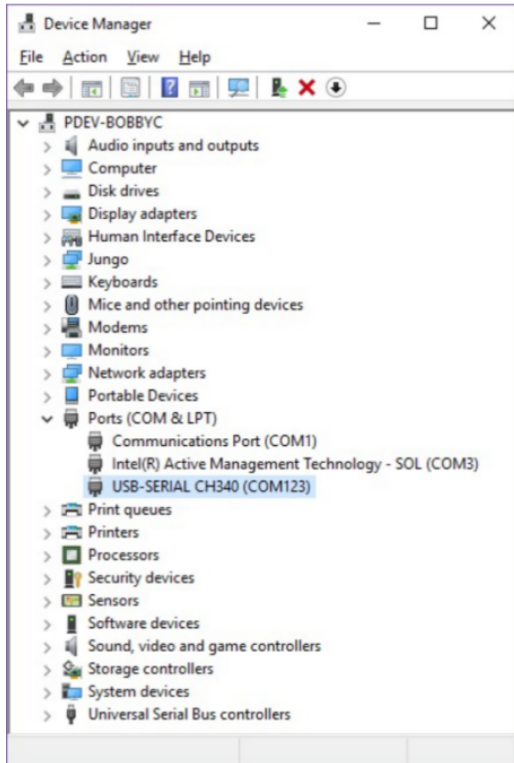
9.Line count and time projection: LaserGRBL could estimate program execution time based on actual speed and job progress.

10.Overrides status an control: show and change actual speed and power override. Overrides is a new feature of grbl v1.1 and is not supported in older version.

3. Connect to engraving machine

Step 1: Make sure the COM port

Your Windows OS recognize your engraver as a serial COM port,once the engraver is connected, as per type of control board this port may appear in the computer's device manager with the name "USB-SERIAL CH340" or "USB Serial Device" or something else.



The name it appears as in Device Manager strictly depends on the type of machine; if no name appears,or if a device with error symbols appears, driver may need to be installed.



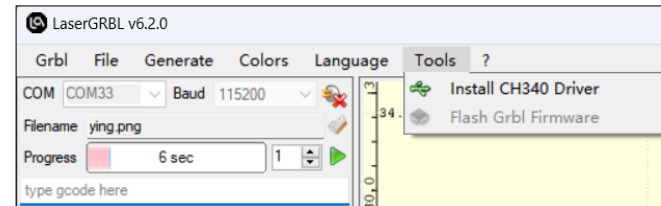
Usually the most common control board uses CH340 chip; If your system cannot recognize the serial port, click 'arduino CH340G' to download and install. Alternatively, you can install CH340 from the Tools menu in LaserGRBL.

Download link:

2.CH341SER.EXE - Nanjing Qinheng Microelectronics (wch-ic.com)

3.<https://asa.atomstack.com/downloadWindowsDrivers.do3>

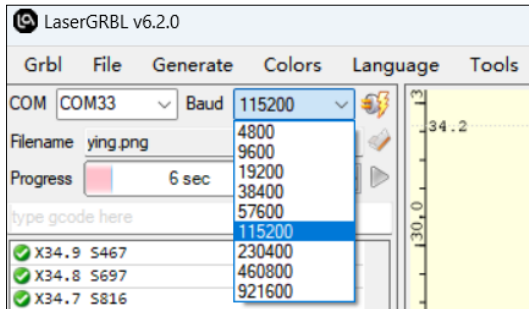
Install CH340 with LaserGRBL from the "Tools" menu:



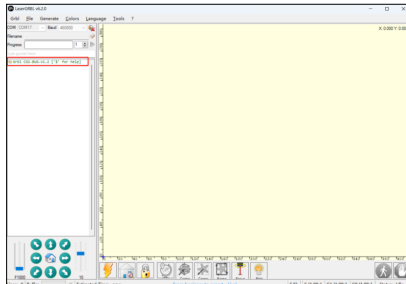
Step 1: Connect to LaserGRBL

LaserGRBL continually checks for available COM ports on the machine. The port list allows you to select the COM port to which the control board is connected. This port number corresponds to the port number displayed near the COM ports in Device Manager.

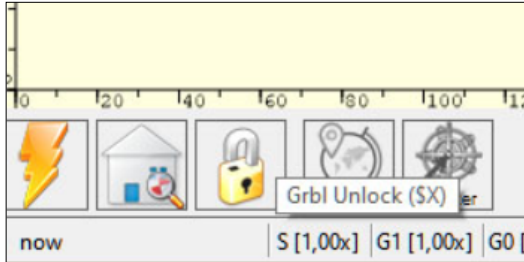
Please select the correct baud rate according to your machine's firmware configuration. The most common baud rate is 115200.



When the correct Com port is recognized and connected, grbl reports "\$" for help showing Grbl firmware version.

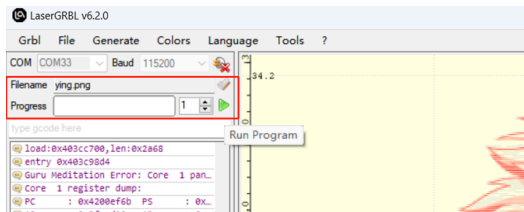


Normally it is possible to exit the alarm state using the “\$X (Unlock)” command or by carrying out the “\$H (Homing)” procedure – for machines equipped with limit switches.



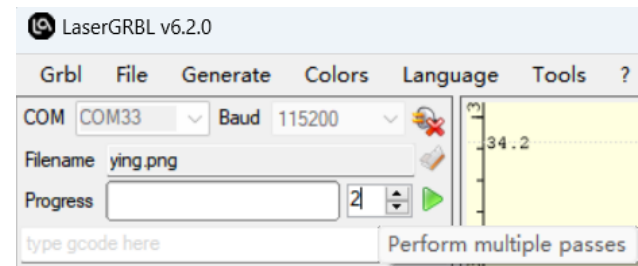
4.load and send

If we have not a program under execution we have the ability to load a file from disk. Use file open button near “Filename” box, or from file menu.



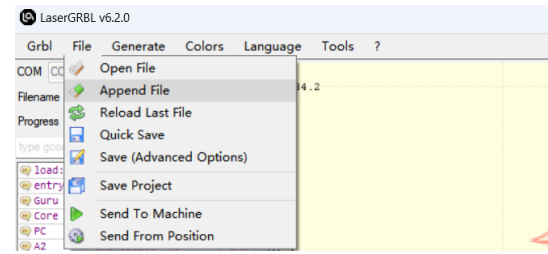
LaserGRBL support G-Code with .nc and .gcode extension. If your file has a different extension but they are G-Code, you can rename your file to use this extensions. LaserGRBL also support opening pictures and raster images in bmp, jpg, png and gif file format.

Multiple engraving/cutting passes setting
LaserGRBL has a numeric switch to perform multiple passes.

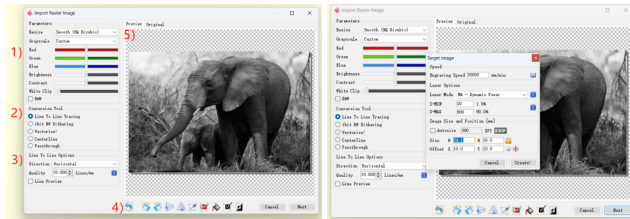


5.Import pictures

Raster import allows you to load it GCode instructions without the need of photos, clip art, pencil drawings, logos, icons and try to do the best with any kind of image. It can be recalled image of type jpg, png or bmp



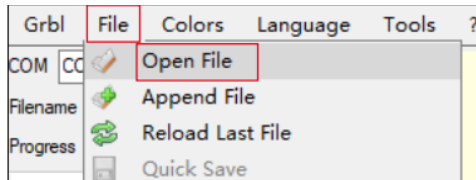
The image import dialog box consists of 5 parts:



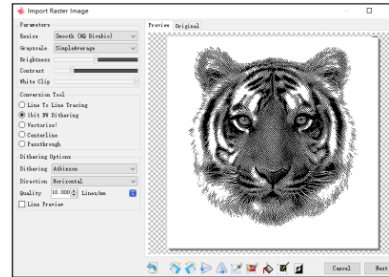
- 1.Parameters: transform original image in grayscale or black and white.
- 2.Conversion tool: choose between tools suitable to various types of images.
 - 2.1.Line To Line: for grayscale PWM pictures
 - 2.2.Dithering: for grayscale dithering technique
 - 2.3.Vectorize!: produce the best result with logo and hand drawn images
- 3.Tool options: contains a specific set of parameters for each different import tool.
- 4.Rotate, crop and flip tools
- 5.Image preview and original image tab

6.How to use LaserGRBL to engrave/cut

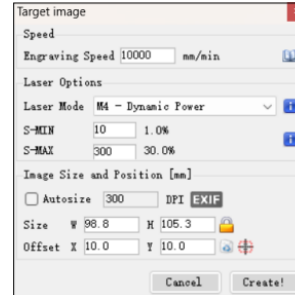
6.1Click "Open File" to open the sculpture model



6.2 Set image parameters,conversion tool and quality



6.3 Refer to material settings table to set engraving speed, S-MAX and passes: <https://atomstack.com/pages/material-set->



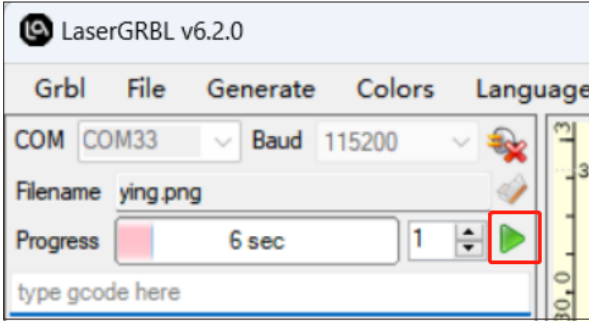
6.4 Determining the engraving position.

6.4.1 Set the current position as the origin for engraving.

6.4.2 Click the "Frame" button, and the laser will begin scanning the external outline of the pattern. You can change the engraving position referring to the scanned external outline. Additionally, you can click the "Frame" button multiple times until the external outline is in the desired engraving position.



6.5 Click send to start engraving

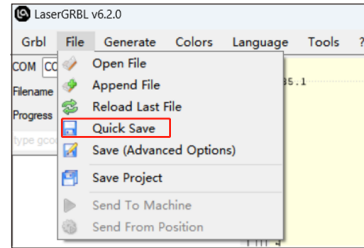


6.6 After engraving is complete and the laser stops working, you can remove your workpiece

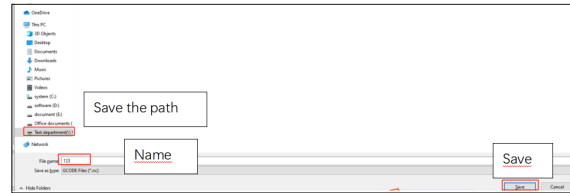


7.如何导出GCode 文件

7.1 Import the image into LaserGRBL, set the parameters, engraving speed and S-MAX, etc. click File and select Save.



7.2 Select the save path, and click 'Save' to generate. nc document



《LaserGRBL》软件使用说明书

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LaserGRBL 操作指南

使用激光雕刻机时，请始终佩戴安全眼镜，在没有适当培训和保护的情况下使用激光会导致严重的伤害和失明，即使在低功率下也是如此。激光分类表 - 激光安全事实 (lasersafetyfacts.com)

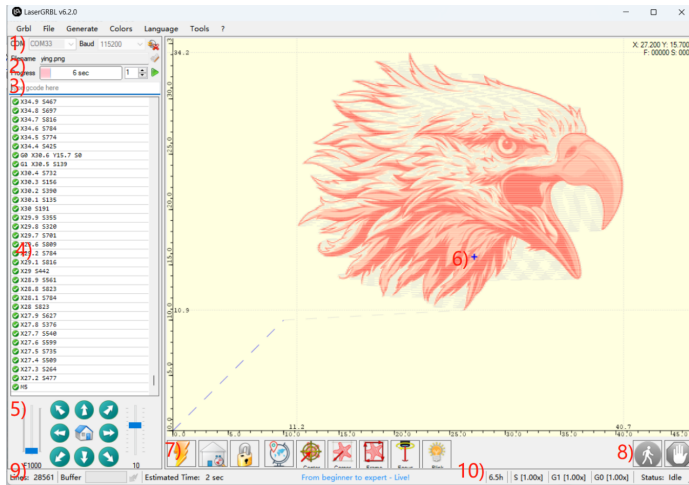
LaserGRBL是Microsoft Windows操作系统的软件

1. 下载链接

Download – LaserGRBL

2. 用户界面

Download – LaserGRBL



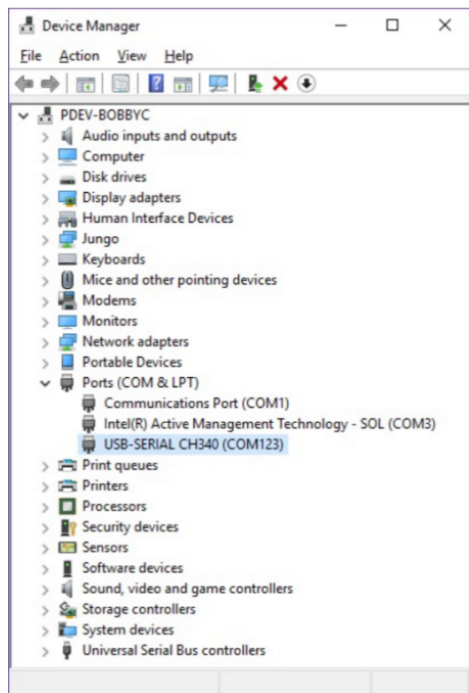
LaserGRBL 用户界面

- 1.连接控制:** 在这里, 您可以根据grbl固件配置, 选择串口和适当的波特率进行连接;
- 2.文件控制:** 此显示加载文件名和雕刻过程进度, 绿色的“运行程序”按钮将启动程序的执行;
- 3.手动命令:** 您可以在这里键入任何G-Code, 然后按“enter”。命令将进入命令队列;
- 4.命令日志和命令返回代码:** 显示已排队的命令及其执行状态和错误;
- 5.慢跑控制:** 允许手动定位激光器, 左侧垂直滑块控制运动速度, 右滑块控制步长;
- 6.雕刻预览:** 此区域显示最终的工作预览, 在雕刻期间, 一个小的蓝色十字将显示在运行时激光的当前位置;
- 7.Grbl重置/归位/解锁:** 此按钮向Grbl板提交软重置、归位和解锁命令, 在解锁按钮的右侧, 您可以添加一些用户定义的按钮;
- 8.命令暂停和恢复:** 此按钮可以暂停和恢复程序执行, 发送指令暂停或恢复命令;
- 9.行数和预估:** LaserGRBL可以根据实际速度和作业进度估计程序执行时间;
- 10.覆盖状态一个控件:** 显示和更改实际速度和功率覆盖。覆盖是grbl v1.1的一个新特性, 在旧版本中不受支持。

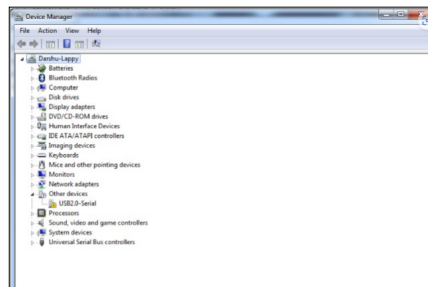
3. 连接到雕刻机

步骤 1: 确保COM端口

您的Windows操作系统识别您的雕刻器为一个串行COM端口，一旦连接，根据控制器的类型，这个端口可能会出现在计算机的设备管理器中，名称为“USB串行CH340”或“USB串行设备”或其他一些东西。



它在设备管理器中出现的名称严格取决于机器的类型；如果没有出现名称，或者出现带有错误符号的设备，则可能需要安装驱动程序。



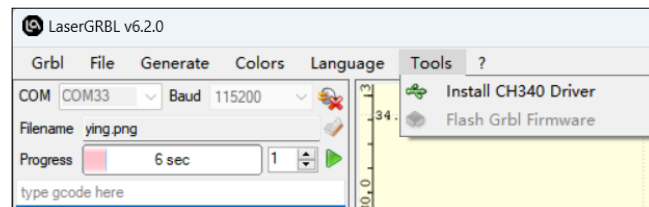
通常最常见的控制器板使用CH340芯片；如果你的系统不能识别串行端口，点击“arduino CH340G”下载安装。也可以用LaserGRBL从菜单的“工具”安装 CH340。

Download link:

2.CH341SER.EXE - 南京秦恒微电子 (wch-ic.com)

3.<https://asa.atomstack.com/downloadWindowsDrivers.do>

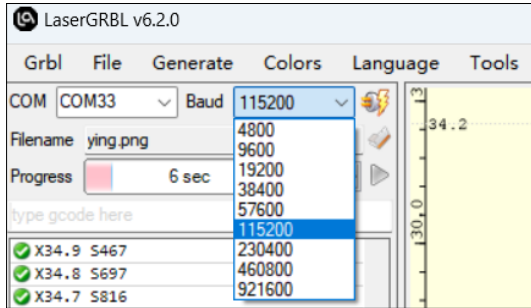
用LaserGRBL从菜单的“工具”安装 CH340:



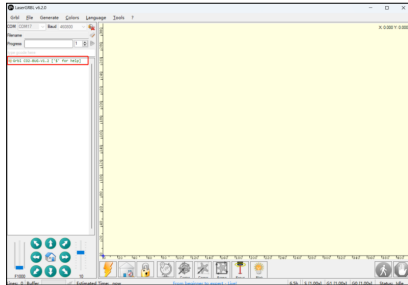
步骤2: 连接 LaserGRBL

LaserGRBL不断检查机器上是否可用的COM端口，端口列表允许您选择连接控制板的COM端口；

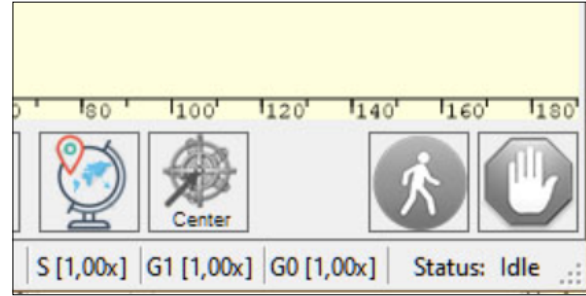
此端口号与设备管理器中的COM端口附近显示的端口号相同；
请根据您的机器固件配置，选择正确的波特率，最常见的波特率是115200



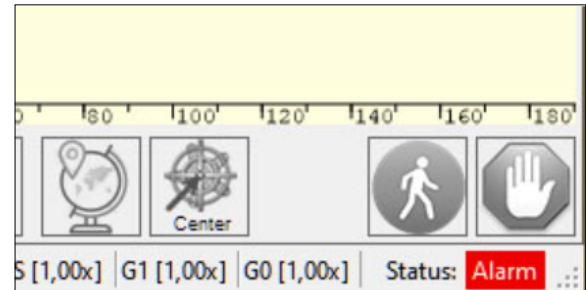
当连接到正确的端口时，grbl 回复 “\$” for help” 显示Grbl固件版本



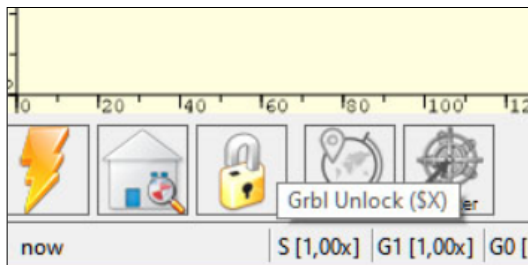
在LaserGRBL界面的右下角，你能看到“Status: Idle”



如果您看到“断开连接”或“连接”，但没有收到来自雕刻器的消息，也许您应该更改COM端口配置中的一些东西；

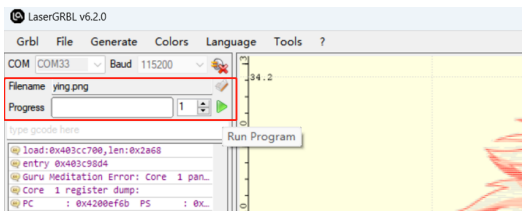


通常，当机器处于报警状态时，需要执行定位程序，或只需按下锁的按钮来确认报警。



4. 加载并发送

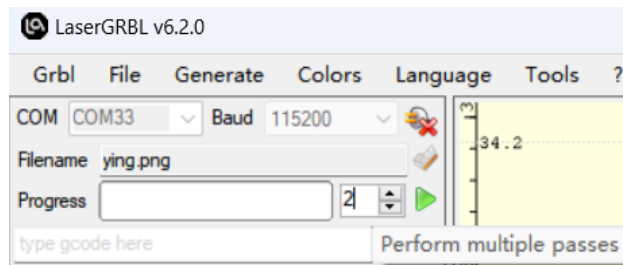
如果我们没有执行一个程序时，我们可以从磁盘中打开一个文件。点击“文件名”框附近的打开按钮，或从文件菜单中打开文件；



LaserGRBL 支持 .nc 和 .gcode 的 G-Code 格式。如果你的文件有不同的扩展名 但是都是 G-Code，您可以重命名文件以使用此扩展名；LaserGRBL 还支持 bmp、jpg、png 和 gif 文件格式的图片。

设置多次雕刻/切割

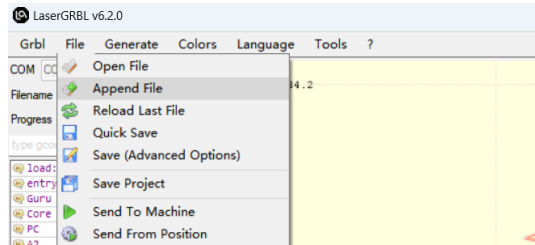
LaserGRBL 包含了一个数字开关来执行多次雕刻/切割。



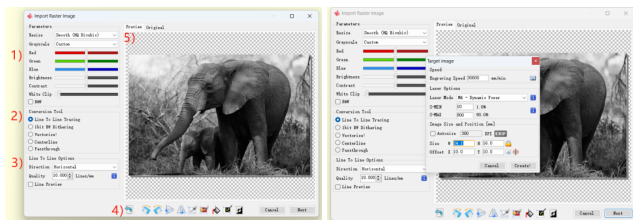
5. 导入图片

在 LaserGRBL 允许您加载一个任何类型的图像导入和转 GCode 指令，而不需要其他软件，LaserGRBL 支持照片、剪贴画、铅笔画、标志、图标，并试图做最好的。

菜单中文件->添加文件，选择 jpg、png 或 bmp 类型的图像



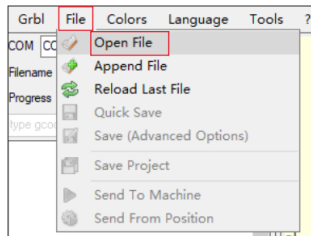
图片导入对话框由5个部分组成:



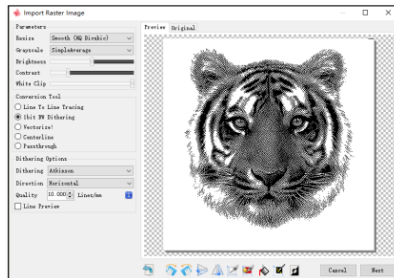
- 1.参数: 以灰度或黑白图像的形式变换原始图像;
- 2.转换工具: 选择适合各种类型的图像的工具;
- 2.1.线到线: 用于灰度PWM图片
- 2.2.抖动: 对于灰度抖动
- 2.3.矢量: 产生最好的结果与标志和手绘的图像
- 3.工具选项:包含针对每个不同的转换工具的一组特定参数;
- 4.旋转、裁剪和翻转工具;
- 5.图像预览和原始图像选项卡。

6.如何使用LaserGRBL雕刻/切割

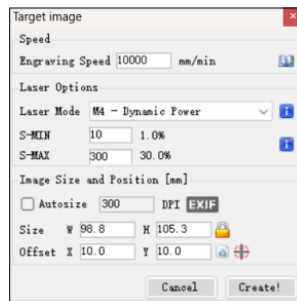
6.1点击“打开文件”，打开雕刻模型



6.2 设置图像参数、雕刻方式、雕刻质量



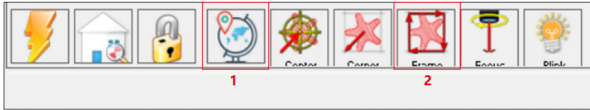
6.3 设置参数，参考参数表设置雕刻的速度、功率，参数表查询通道：<https://atomstack.com/pages/material-setting>



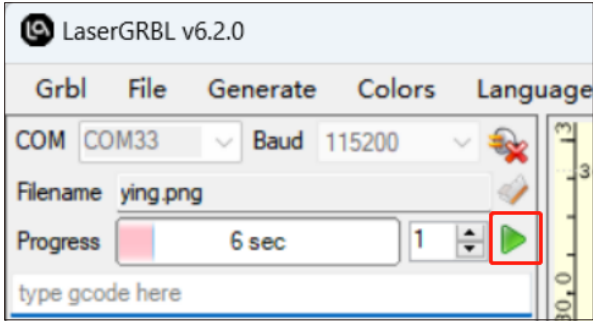
6.4 确定雕刻的位置。

6.4.1 设置当前位置作为雕刻的原点。

6.4.2 点击“轮廓扫描”按钮，激光将开始扫描计算机上图案的外部轮廓。您可以根据扫描的外部轮廓来改变雕刻对象的位置。此外，您可以多次点击“环绕”按钮，直到外轮廓处于所需的雕刻位置。



6.5 点击“开始”，开始雕刻

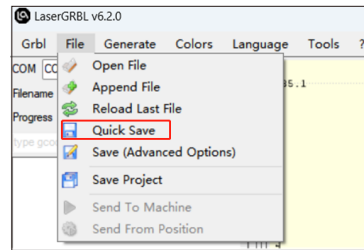


6.6雕刻完成，激光模块停止工作后，您可以从该设备上取出您的雕刻作品。



7.如何导出GCode 文件

7.1 将要雕刻或切割的图片导入到LaserGRBL中，设置雕刻速度和功率等参数后，单击“文件”，选择“保存程序”



7.2选择保存路径，单击“保存”生成nc文件。

