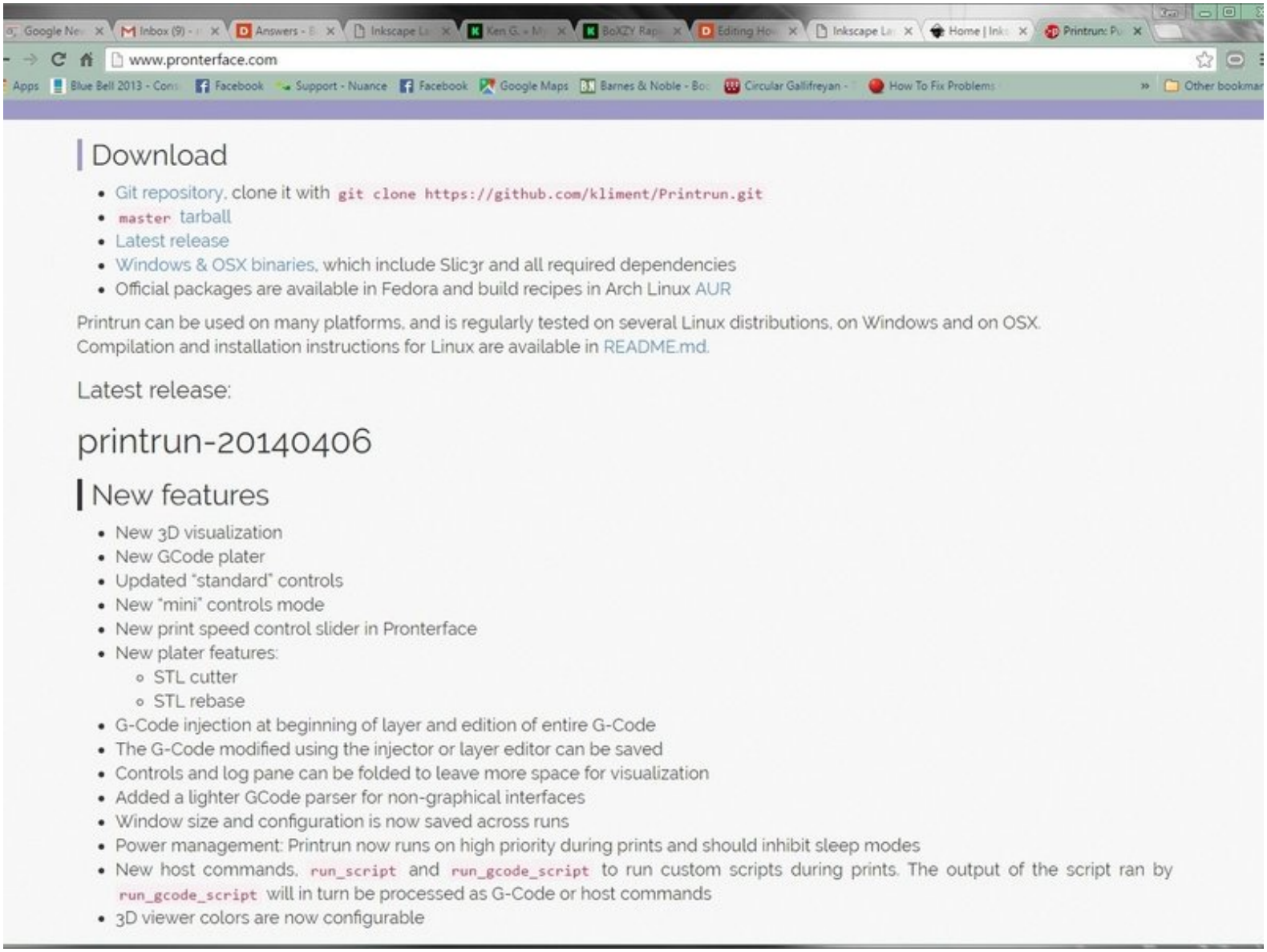
How to laser etch without the BoXZY interface

Laser etching of text can be done without the BoXZY interface, here is how to do it

Written By: Ken Gross



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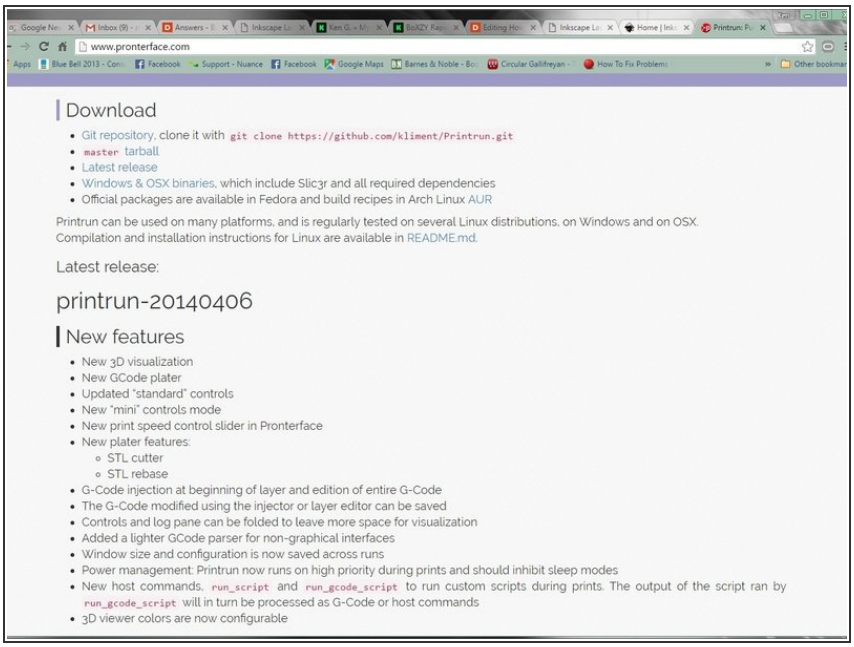
TOOLS:

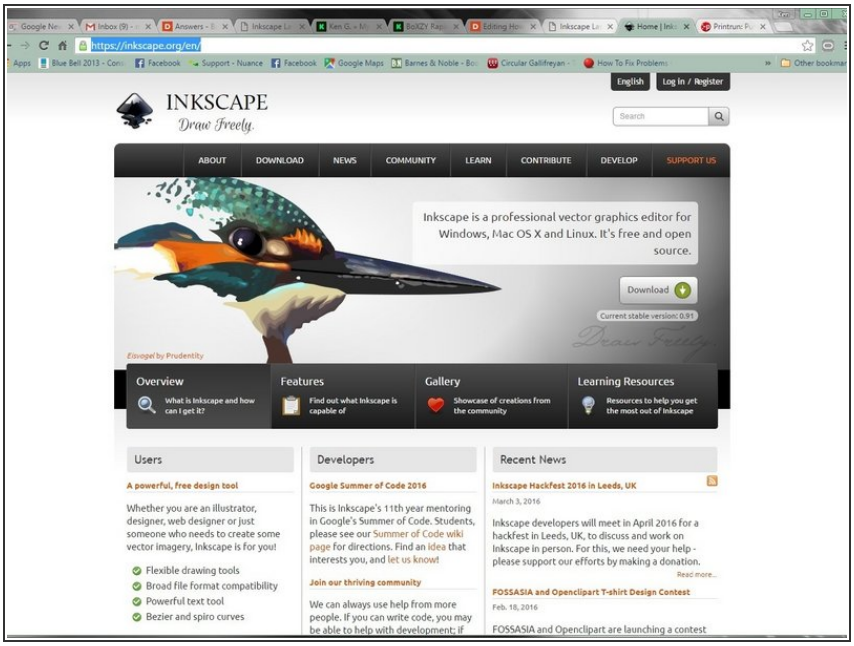
- Inkscape Plugin (1)
- Pronterface (1)
- Inkscape (1)

Step 1 — Install Pronterface



- Download Pronterface for your system, install the program - please remember you must already have Arduino software installed on your machine or Pronterface will not talk to the BoXZY.

Step 2 — Install Inkscape



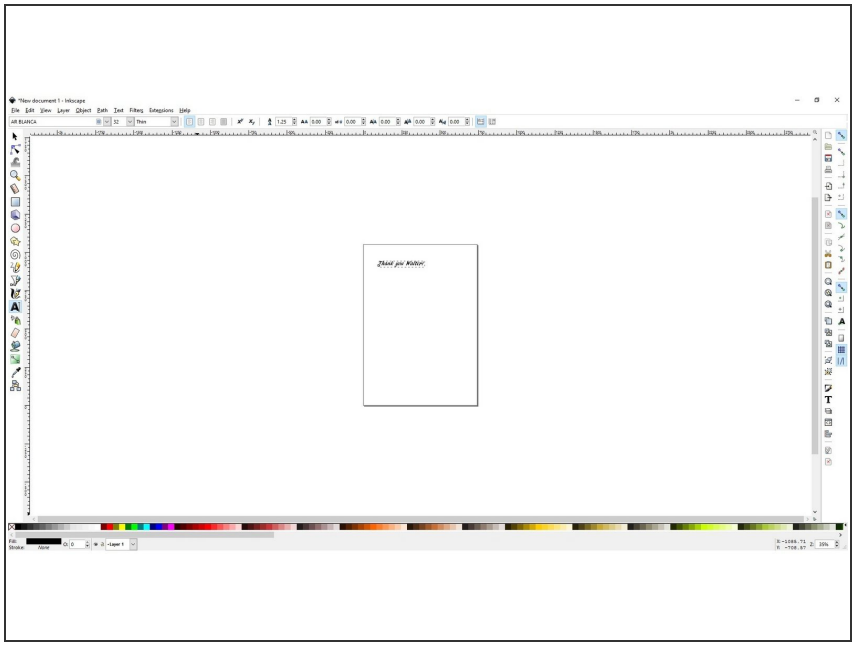
- Download and install Inkscape for your system, when you finish that, you will need to download the Inkscape laser plugin that Walter modified for us, it can be found at: https://github.com/walterhsiao/thlaser-i...

- The extension files (shinylaser.inx, shinylaser.py) go into one of the following inkscape directories:

Windows: C:\Program Files\Inkscape\share\extensions
Mac: ~/.config/inkscape/extensions

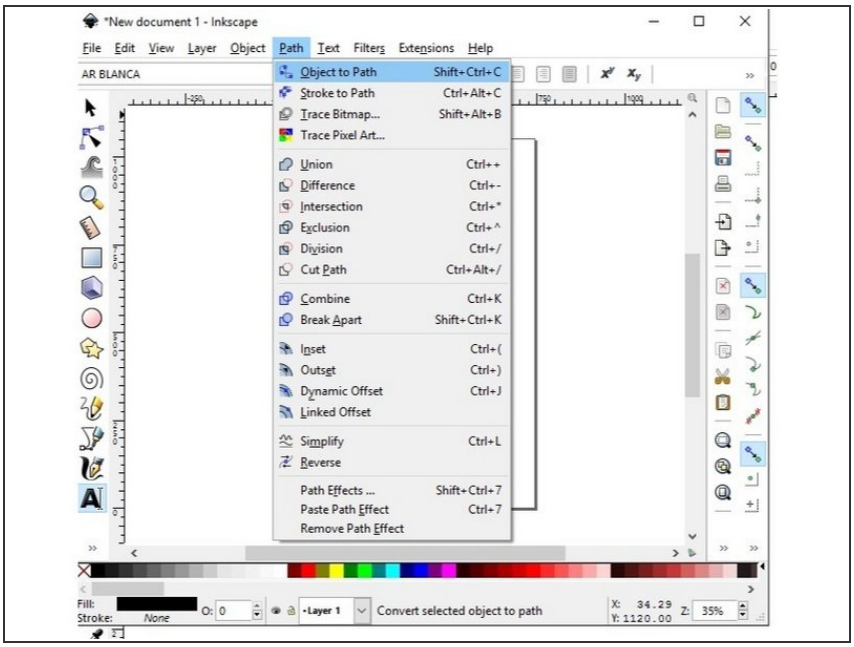
- Thank Walter for his incredible job!

Step 3 — Load Inkscape



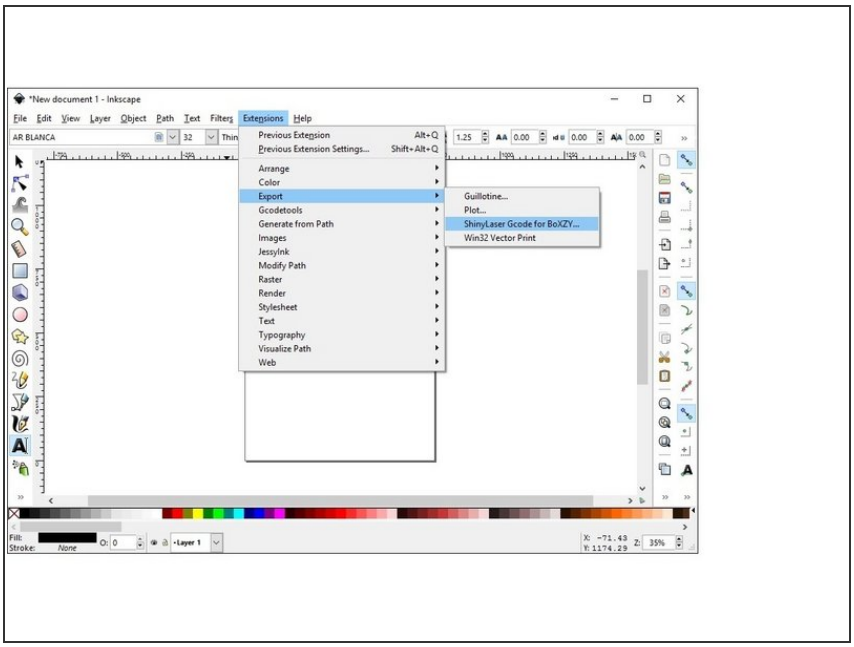
- Fire up inkscape
- Draw your vector artwork in here, or insert text

Step 4 — Convert your work to a path



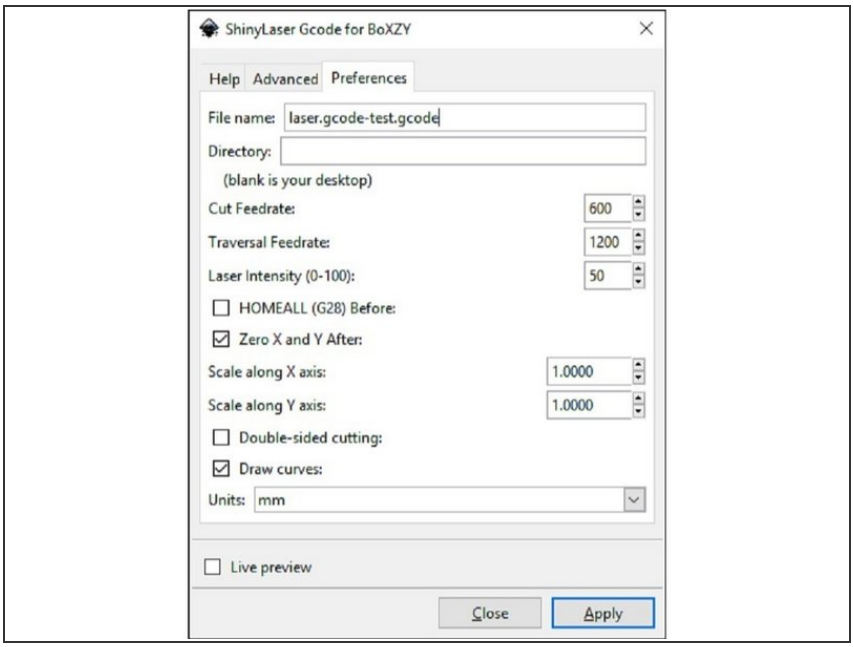
- Run the convert objects to a path

Step 5 — Prepare the work for BoXZY



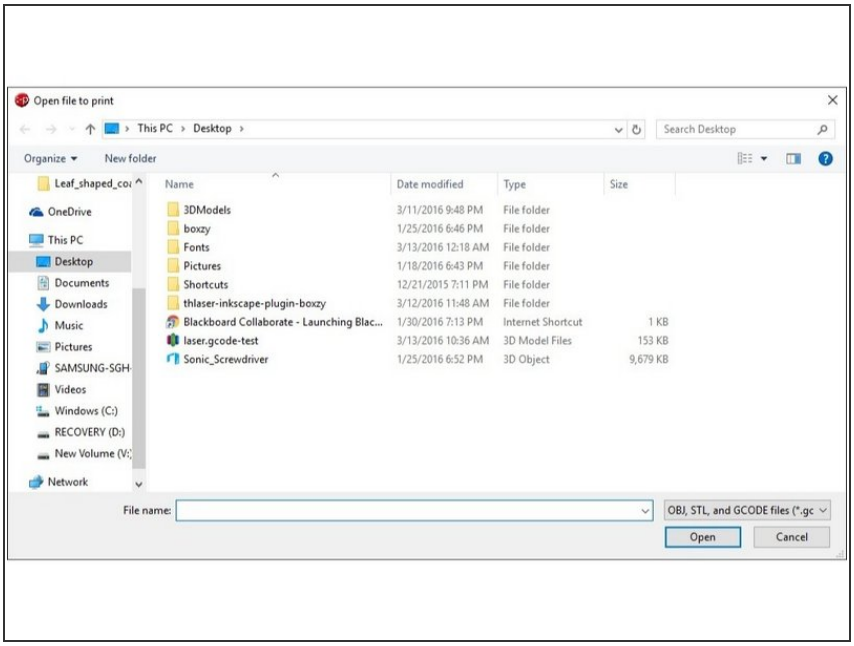
- Open the extensions menu
- Go to Export
- Use Shiny Laser for BoXZY

Step 6 — Make sure to know where your file is and that it ends in .gcode



- Using the plugin export your paths to GCode
- Make sure it has a .gcode file extension for Windows or Pronterface will not find it.

Step 7 — Load your file for etching and home the Axes.

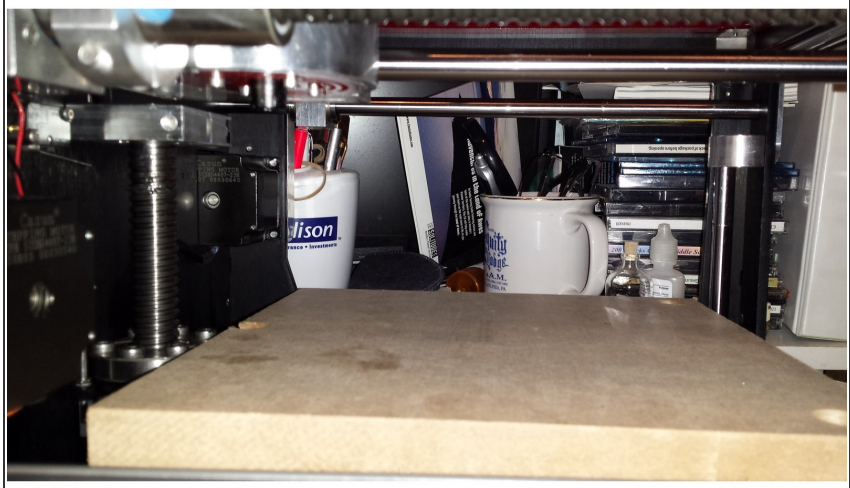


- In Pronterface load the file
- Make sure there is nothing in the quick change carriage
- Home X, Y , and Z Axes.
- Insert the laser into the carriage.
- Manually bring the Z axis down so that the top of what you are trying to etch is at the laser focal point.

- You do this by hitting Z+ until you get where you want to be, It can move in steps of 10, 1, or .1. Alternately, you could edit your

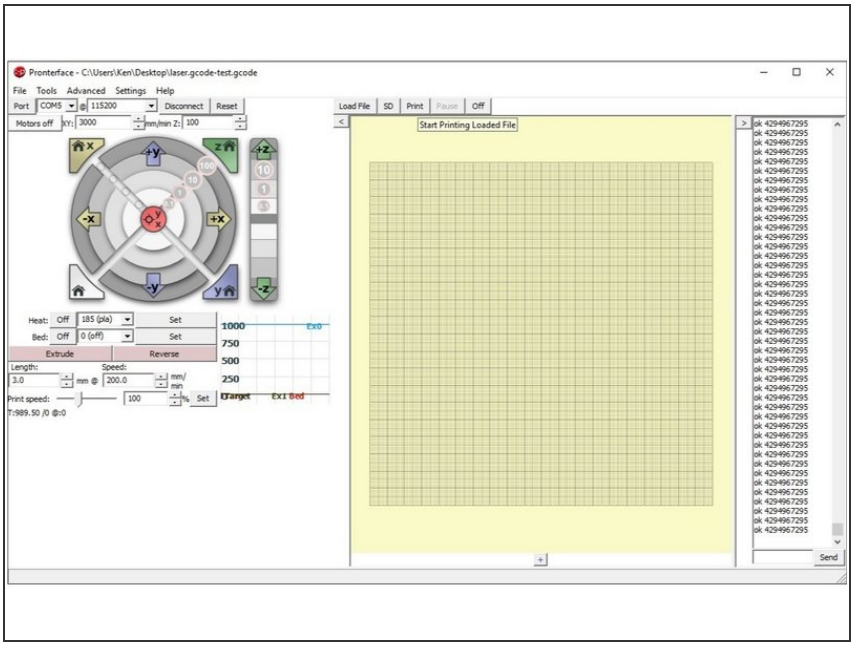
GCode file to adjust Z to the right height. "G1 Z57.3" move the Z to 57.3 mm.

Step 8 — Set your X and Y now and PUT ON YOUR GLASSES



- I am going to burn into the sacrificial board my text.
- Adjust your X and Y to select where you want to have the print begin.

Step 9 — Print it

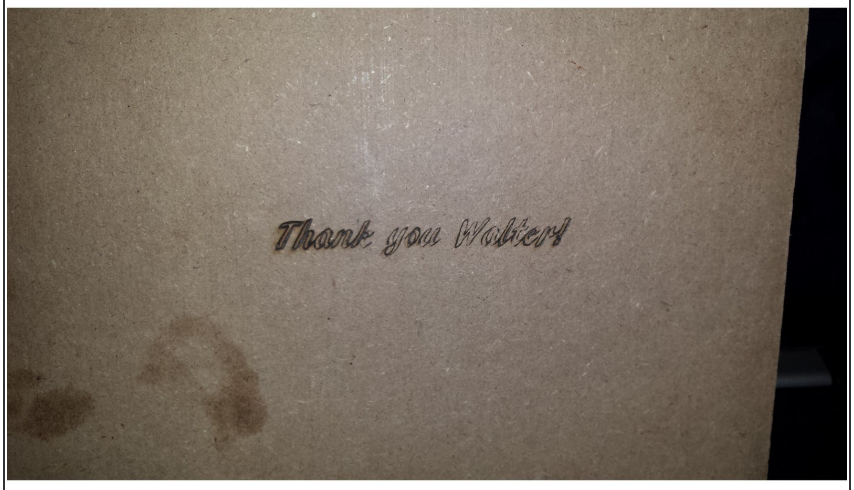


- Make sure YOUR GLASSES ARE ON, the laser can damage you your eyes, or anyone in the area not protected.
- Make sure everything is well ventilated, then hit print.

Step 10 — Sit back and make sure nothing goes wrong

- With your glasses on, make sure that the laser does not set fire to your project, it will produce smoke as it is burning into the object.
- One it is done, the interface will return the X and Y to where you left them last.

Step 11 — Thank you Walter!



- Now MAC users can use the laser etcher without waiting for the BoXZY interface software.

Step 12 — Cutting 1/16" Basswood



- The latest updates to this Inkscape extension allow easy cutting as well as etching, by providing easy multi-pass mode setup and proper scaling and alignment.
- These pictures are made of this extension doing both etching and complete cuts through 1/16" basswood.
- The etching in the duck was done with a single pass at 60mm/min feedrate at 70% laser power. And its oval cutout was done at 60mm/min feedrate with 8 passes at 85% laser power.
- The "logo" was done with cutting only (so that it cleanly separates into two pieces). It was also done with 8 passes at a 60mm/min feedrate, but at 90% laser power to make sure the fine detail completely cut through and separated.
- Experimentation is always needed to find the most optimal cut-rate, number of passes, and power levels for the given material. But the BoXZY's laser is very predictable and consistent and somewhat flexible in the value choices.

Read the BoXZY guid to see how to set the focus please.

Most of all, of course, thank you to all the people who made this happen. Team BoXZY, the folks who made Pronterface and Inkscape, and Walter who if he had not done the hard work, this would not have happened.