

Introduction to Laser Engraving

PART A – Design & Upload Your Project

On your Mac, your iPad, or a Maker Space computer...

1. Open Word, Powerpoint or any software in which you can quickly enter text and an image and that has rulers along the top and sides. (The best software for advanced design is Corel Draw or Adobe Illustrator.) For iPads, Notability can work, and Canva has business card templates, but they do not have rulers along the side. (We have not found good laser design software for iPads. If you find something, let us know!)
2. Create the text & image for your project:
 - a. Check the dimensions of your material. Keep your design with
 - b. Type in the information you want on your business card: name, title, email, etc.
 - c. Online, find a clipart or symbol that represents you or your job.
 - d. Insert the image next to your name.
3. Save or export your completed design as a PDF. Include your name in the name of the file. (Ex: JThompsonBizCard.pdf)
4. Save your PDF to a flash drive or upload it to the shared Google folder called “Harding Laser Files.” You can find it here --> <https://goo.gl/89gjyY>. (Uploading to shared Google folders can be buggy on iPads. If it doesn't work right away, email your design to jamie.thompson@spps.org. In the future, you can simply save your file to your Google drive, then log in with your account on the laser computer.)

PART B – Using the Laser Engraver

Go to the laser computer:

Importing your file to Corel...

1. Download your file to the laser computer from your flash drive, Google drive, or email.
2. Open Corel Draw
3. Select File - New
4. Select File - Import to import your drawing into Corel
5. Choose Import as Curves.
6. Click in the upper left hand corner to place your file.
7. Do any final re-sizing in Corel to match your piece of wood: 3.5” x 2.25” (You can adjust the position, but not the size, in the next step.)
8. Select File-Print “VLS 6.60”. (This does not start the engraving. It simply sends your file to the laser control panel.)

Using the laser control panel...

1. Click on the small red square in the lower task bar to open “UCP”, the laser control panel.
2. Your design should appear in the window. (Anything you are engraving should be in black. Anything you are cutting should be in red.)

3. If the laser cutter is not on, turn the laser cutter on by clicking the small, red power button in the upper right hand corner of the screen.
 4. Click Settings in the lower right.
 - a. Select your material: Natural – Wood - Medium Wood – Birch.
 - b. Measure the thickness of your material using the digital caliper.
 - c. Enter the thickness of your material.
(If you are ONLY engraving, it is not critical that the material thickness is exact. It is critical if you are cutting.)
 - d. Click Apply and OK.
 5. Open the cover of the laser cutter.
 6. Place your material on the bed, but leave the cover open. (For engraving, you can place your material in the upper left corner. For cutting, avoid the upper left corner.)
 7. Use the Focus tool to be sure that your material is in the correct position. Click the corners of your design to check that it will fit on your material. Move your design around on the screen until the design is centered on your material.
 8. Use the bevel (stored to the left of the laser bed) to check the height of the laser bed. Adjust the height (z-axis) of the laser bed by pressing the up or down arrows on the front panel of the laser cutter. Adjust the height until the bevel meets the front edge of the square black lens box. Return the bevel tool to its holder to the left of the bed.
 9. Close the laser lid.
 10. Turn on the air filtration system.
 11. Final check:
 - a. Did you select your material & thickness?
 - b. Are your materials & design in the right position?
 - c. Is the laser bed the correct height?
 - d. Is the filtration system on?
 12. Click the green play button to engrave. (The play button will turn gray while in operation.)
- **NEVER LEAVE THE LASER UNATTENDED WHEN IN OPERATION****
13. When the play button turns green again, the engraving is complete.
 14. Check that it engraved deeply enough before moving your material. You can simply click “Play” again to re-engrave to make it deeper or darker. Remove your material when done.
 15. Continue to run the air filter system for a few minutes to clear out any smells.

PART C - Finishing Your Project

1. If there are too many scorch marks from the smoke on the un-engraved parts of the wood, use sand paper to remove the marks. You can also cover your project with masking tape *prior* to engraving to prevent scorch marks.
2. Use the drill or drill press to drill a hole for a key chain or tag.
3. Add your key chain or tag.

Now that I've attended this introduction to laser cutting, can I use the laser engraver whenever I want?

This training was a basic introduction. We'd like you to complete a few projects with a Maker Space Coordinator in attendance before you use it on your own. Jamie, Richard, and Dan are happy to help during preps or after school. There are a few more things to know (such as when to clean the lens, what to do if there is a fire, what materials are allowed) before using it on your own. Be creative! Be safe!

MORE OPTIONS - High Quality Photo Engraving

1. From the desktop, open ULS 1-Touch Laser Photo
2. Select File – Open to import your photo.
3. Crop or re-size your photo to fit your material. (Do not re-size photos in Corel.)
4. Under Filter, select the type of material.
5. Optional: click “Simulate Result” to see what your photo will look like on your chosen material. Then click “Exit Simulation.”
6. Click Apply.
7. Click Save.
8. Click Close.
9. Open Corel.
10. Select File – Import to import your photo.
11. Do not re-size high quality photos in Corel!
12. Continue the process as you did above.