| | **Fab Lab Essentials** | |
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| APPLE VALLEY STEM HIGH SCHOOL · academics · arts · athletics | **Universal VLS6.60 Laser Engraving** | FAB LAB Apple Valley |

**Intro**

The laser engraver can be used in order to raster (engraving) or vector (cutting through) numerous materials such as wood, cardboard, acrylic, leather, glass, tile, stone, plastic and cork.

**Safety Requirements**

The laser uses a high powered laser in order to cut. There are many safety procedures in place to keep user safe from the laser. Improper use could cause an accident. Please be aware of the following:

1. Exposure to the laser beam may cause physical burns and can cause severe eye damage.
2. Never operate the laser system without constant supervision of the cutting and engraving process. The most common danger that occurs for the laser engraver is an item catching on fire. Stay with the machine for the duration of your task.
3. Never leave materials in the laser system after laser processing has finished. Clean up after yourself in order to diminish accidents. Always remove all material including scrap material from the machine after use. It is also recommended you allow scrap materials to cool prior to leaving the work area.
4. A fume exhaust system must be used when operating the laser system.
5. Some materials when engraved or cut can produce toxic and corrosive fumes. Check with a FabLab staff member before using materials other than wood, cardboard, acrylic, leather, glass, tile, stone, plastic and cork. Plastics should be checked every time.
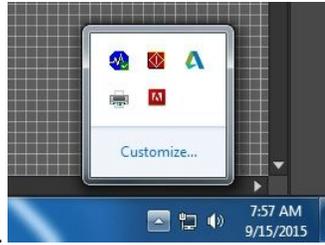
**Software needed**

The two most widely used programs to use when preparing images are CorelDraw and Adobe Illustrator. Both programs will be able to print images to the laser. A PDF image can also be printed.
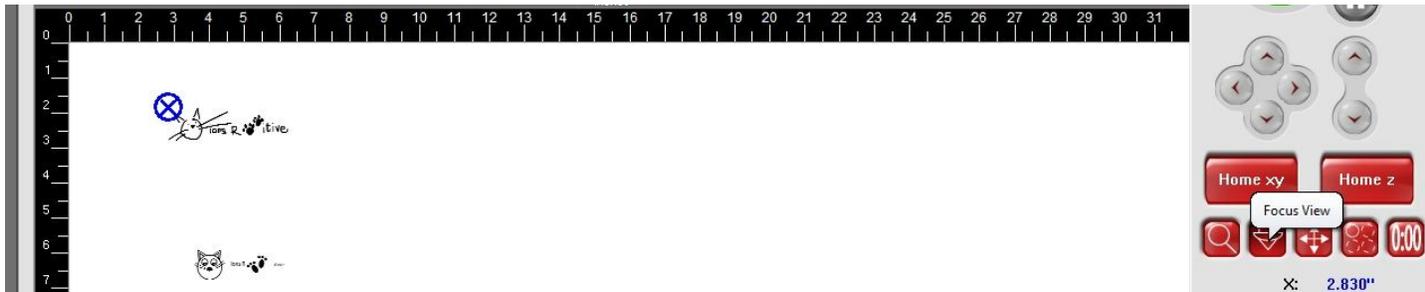
**Step by Step Procedure**

1. Prepare the image for engraving. This laser uses color in order to determine what settings will be used to raster and vector. The color mode must be set on RGB. A vector line must be true red (ff0000) and 0.001 inches.
2. Make sure the image is on a flash drive or google drive.
3. Log into the correct laptop next to the laser you will be using.
4. Turn on the ventilation system and the laser engraver
5. If using the rotary, load the rotary into the machine.
6. Place object to be cut inside the laser engraver.
7. **Open** your image document.
8. Go **File → Print**. Select the VLS6.60 printer.
9. Click on **Set-up → preferences** in order to choose the correct settings for your cutting task.
10. Choose the material you are printing on. Enter in the material thickness. Adjust the fixture type to rotary or none depending on the print material.

11. Click **Apply** and then **Ok**. Click **Print**, and **Print** again to send the object to the printer.

12. On the bottom of the screen click on the white arrow and then on the red diamond with exclamation
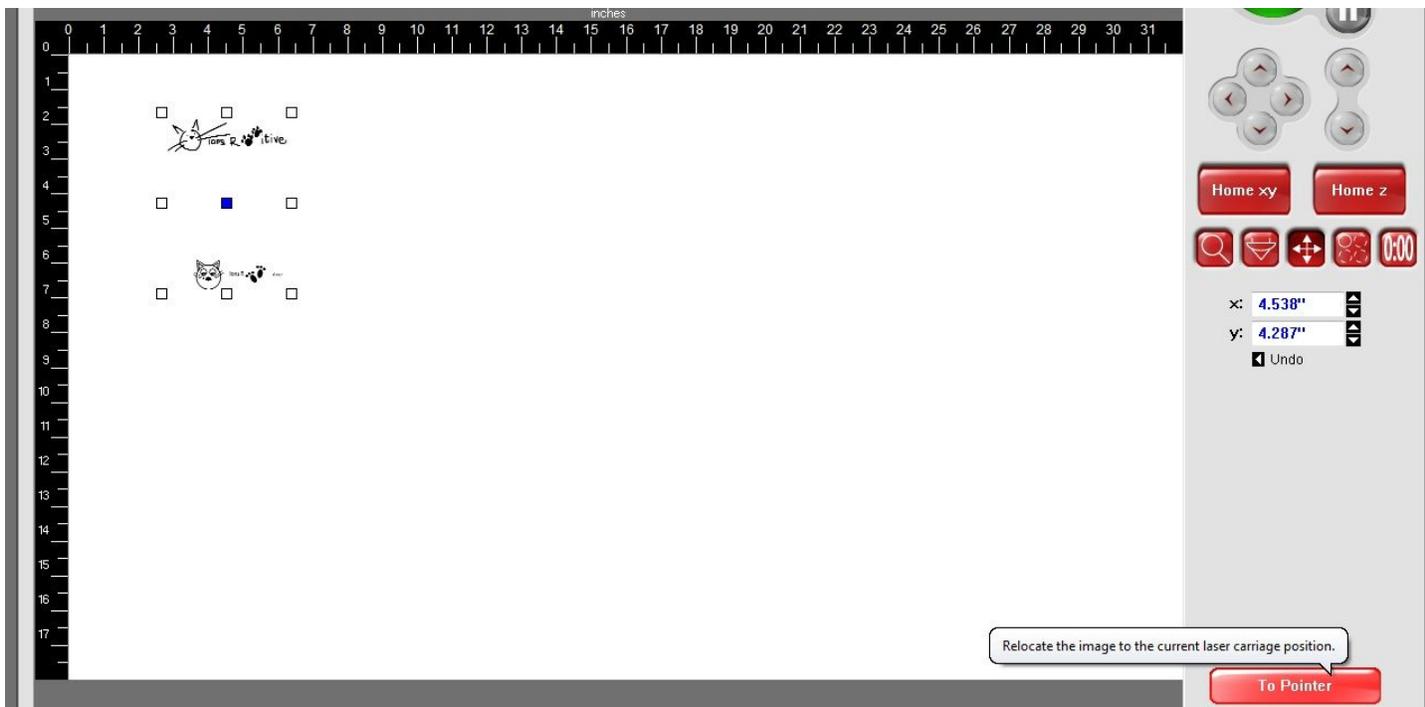


point. This opens the lasering program.

13. Change the height of the table to focus the laser on your object. Use the arrows on the machine and the plastic piece provided at the machine in order to raise or lower the table. Use the buttons in the computer program in order to send your laser to your material.



14. Position your image onto your object. Using the focus view move the laser to the center of where you want to cut your object. Then switch to the move view. Click on the center box of your image and click the red to pointer button. That will center your object on your cutting surface.



15. Make sure the laser door is closed. Click on the green play button in order to cut the material. Do not leave the machine until your cutting job has been completed.

**Links to user manuals or other important information**

[User manual](#)


**User Certification Link**