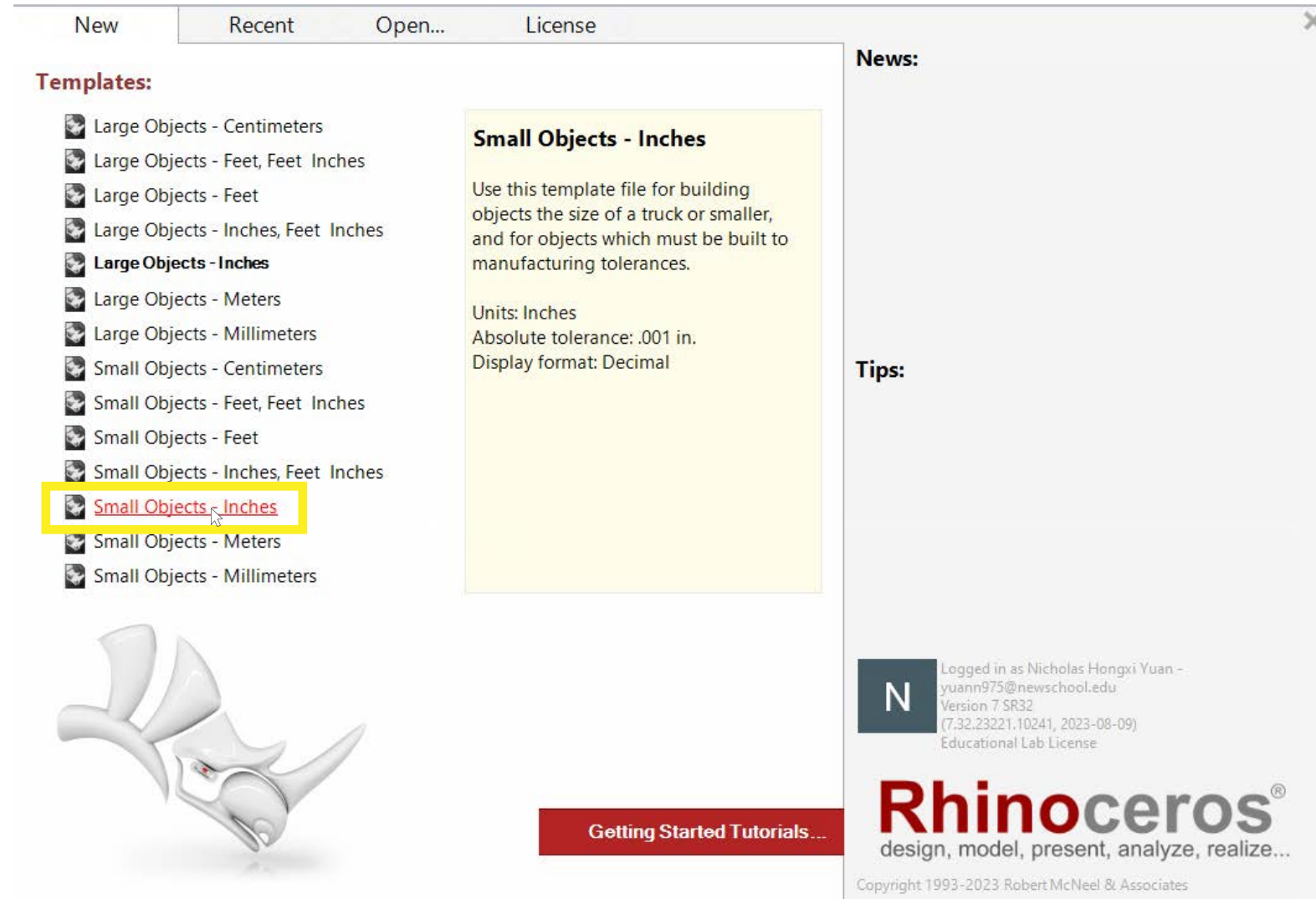


LASER CUTTING GUIDE UNIVERSAL LASER (RHINO)



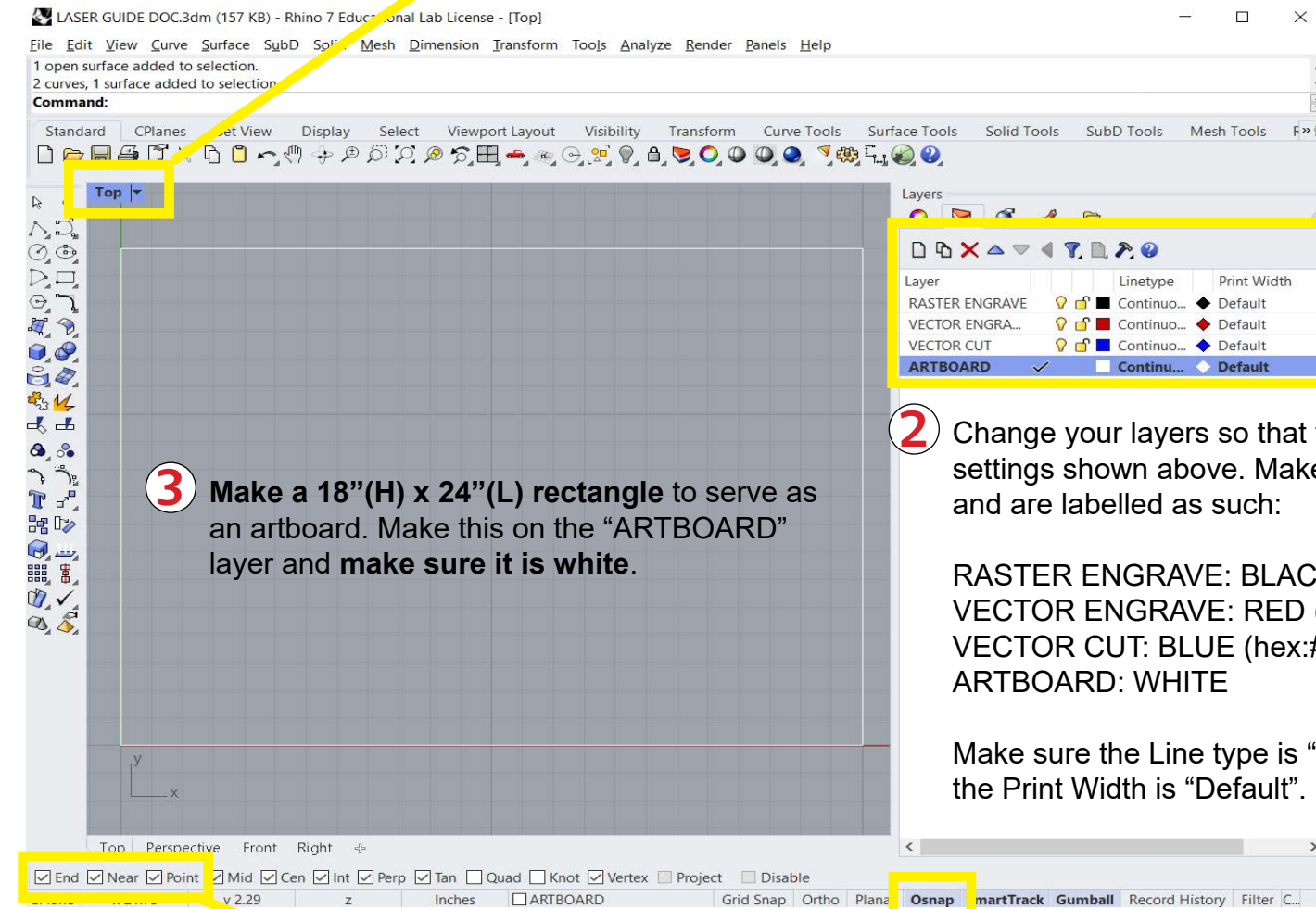
Opening Rhino

After opening Rhino, it will prompt you to use a template. Make sure you select “**Small Objects - Inches**”



Stroke Settings

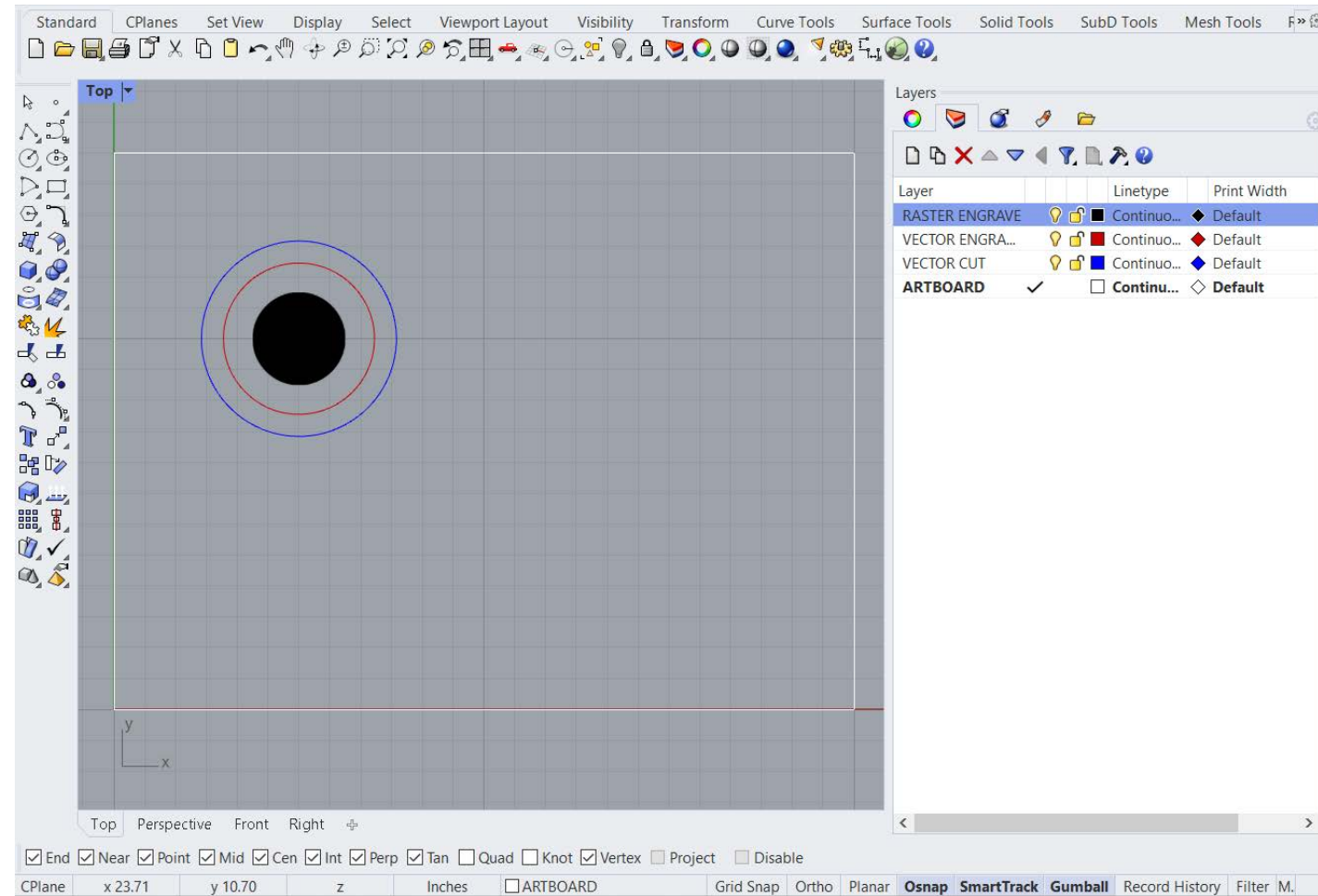
1 Make sure you're in the “**Top**” viewport



4 Turn on Osnap. Change your Osnap settings so that at least “**End**”, “**Near**”, and “**Point**” are enabled. This is important for setting up the print settings later on.

Drawing Your Designs

Rhino cannot print both raster and vector at the same time, so keep that in mind while drawing your file. When drawing your file, use the white artboard as a guideline as the size of the laser bed. If you know the dimensions of your material, draw a shape that represents those dimensions on the “ARTBOARD” layer as a guide to ensure your design will fit on the material when printed. **Remember to have the vector cut, vector engrave, and raster engrave elements on the separate layers** you’ve created for yourself.

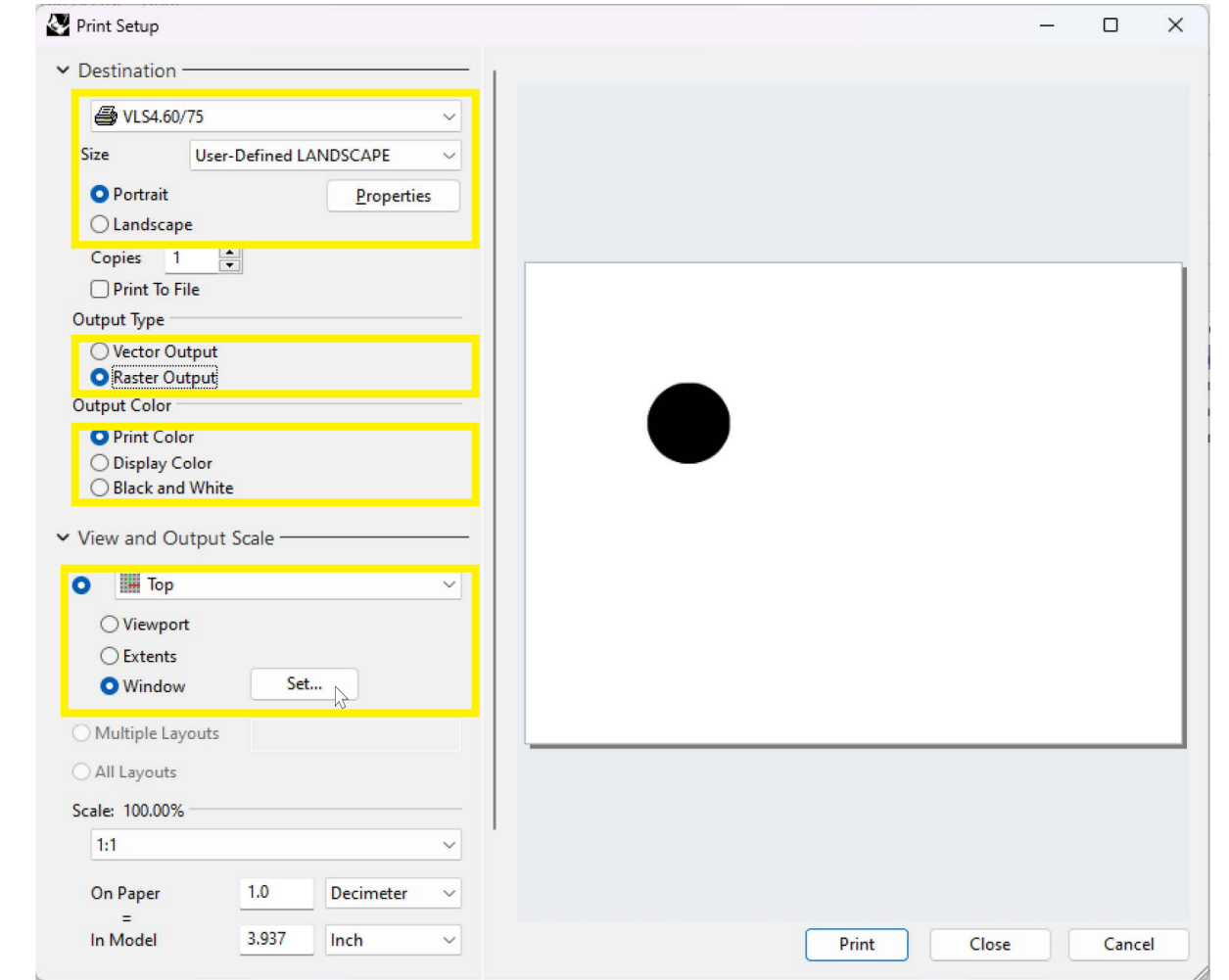


Send to Print (RASTER)

If your design has no raster engraving, skip to the vector operations on the next page.

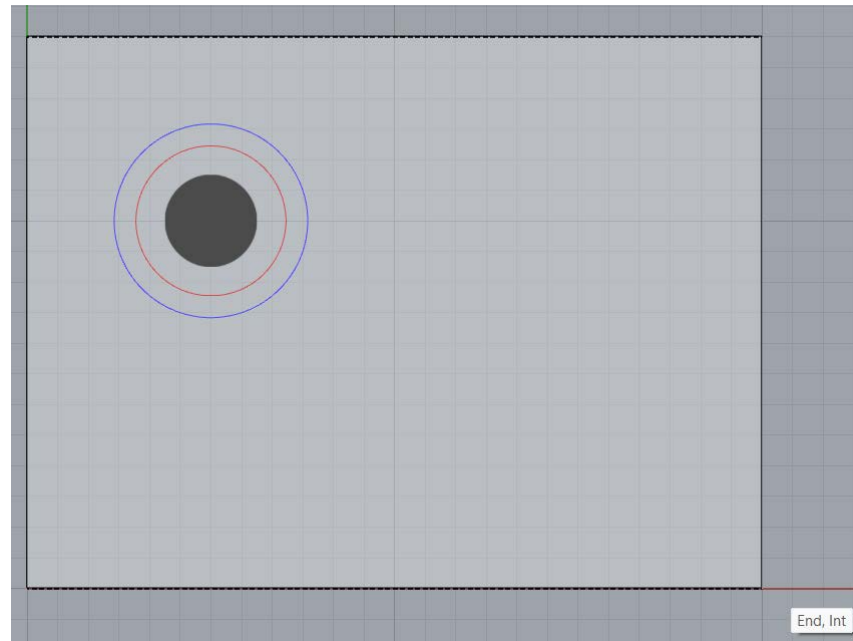
When cutting a file with raster and vector operations, do the raster engrave first. When printing your raster, make sure that the vector layers are off before printing. After selecting File > Print, follow the below instructions to ensure you have the correct print settings.

- 1 Select “VLS4.60” and “User-Defined LANDSCAPE”. Make sure “Portrait” is selected.
- 2 Select “Raster Output”
- 3 Select “Print Color”
- 4 Select “Top” and make sure “Window” is selected.
- 5 Click “Set” after “Window” is selected. This will prompt a selection window. See the page 6 for instructions.

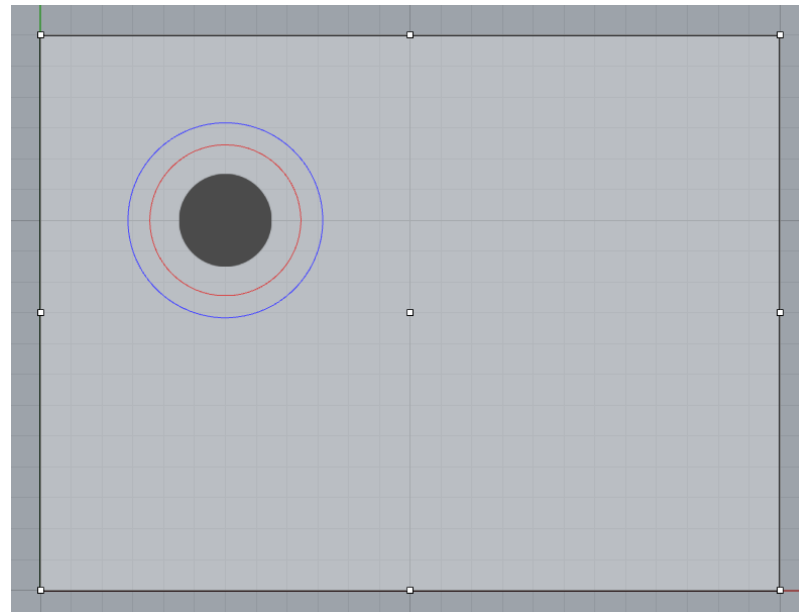


Setting the Window

Drag the window selector from one corner to the opposite corner of your “ARTBOARD”. If your document is set up properly, it should snap automatically to the artboard rectangle. It should say “End, Int” if properly aligned.



Once confirmed, the window rectangle should look like this. Press enter or spacebar to return to the print menu.

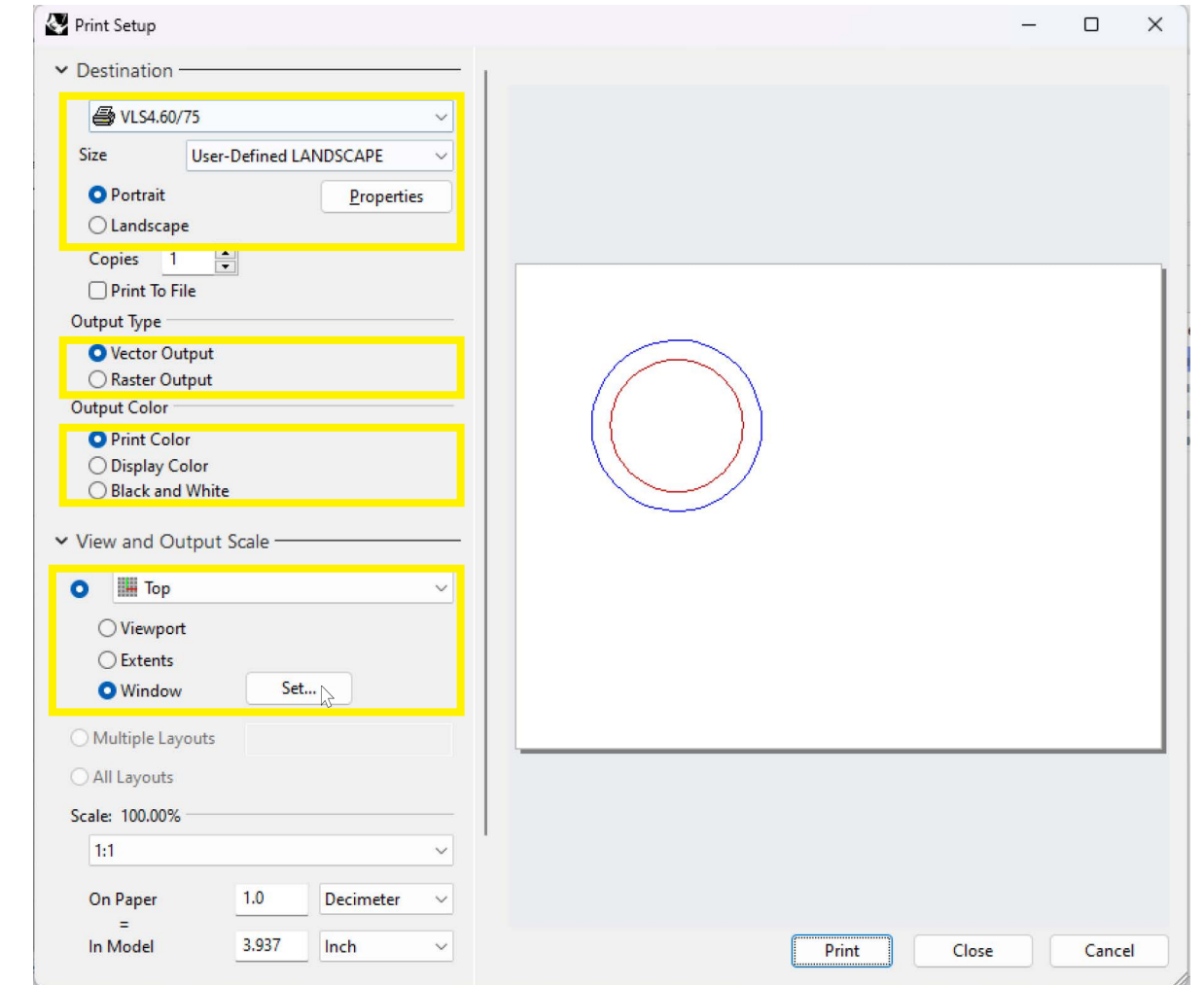


Send to Print (VECTOR)

If your design has raster engraving, please refer to the raster engraving page first.

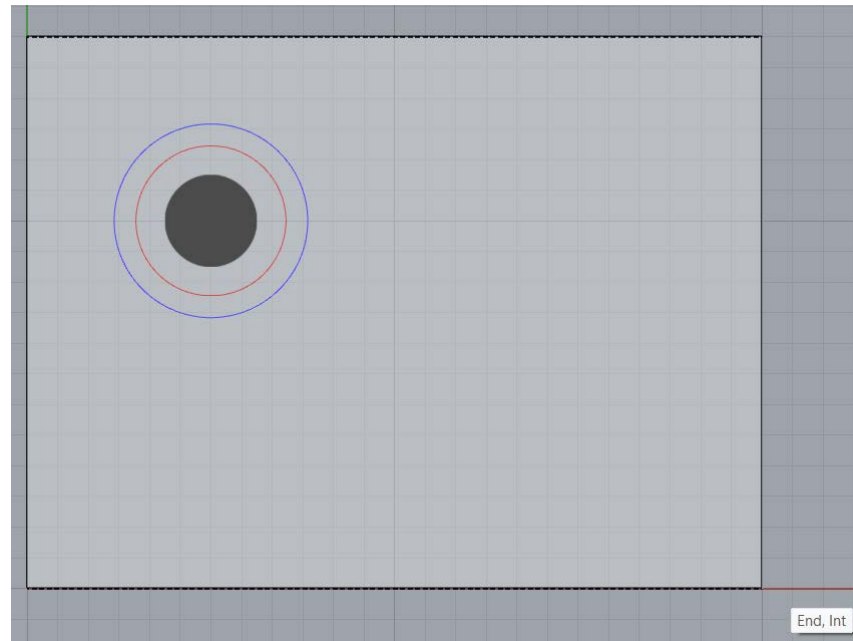
When printing your vectors, make sure that the raster layers are off before printing. After selecting File > Print, follow the below instructions to ensure you have the correct print settings.

- 1 Select “VLS4.60” and “User-Defined LANDSCAPE”. Make sure “Portrait” is selected.
- 2 Select “Vector Output”
- 3 Select “Print Color”
- 4 Select “Top” and make sure “Window” is selected.
- 5 Click “Set” after “Window” is selected. This will prompt a selection window. See the page 6 for instructions.

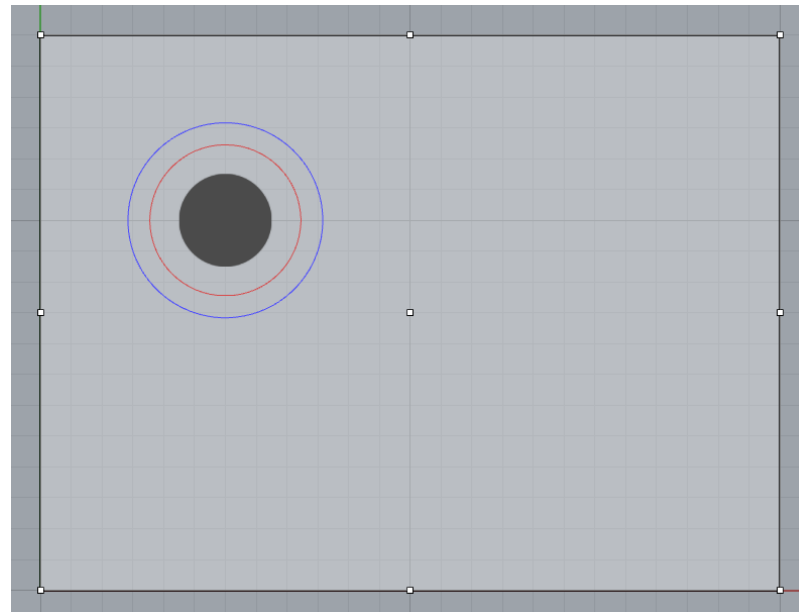


Setting the Window

Drag the window selector from one corner to the opposite corner of your "ARTBOARD". If your document is set up properly, it should snap automatically to the artboard rectangle. It should say "End Int" if properly aligned.



Once confirmed, the window rectangle should look like this. Press enter or spacebar to return to the print menu.

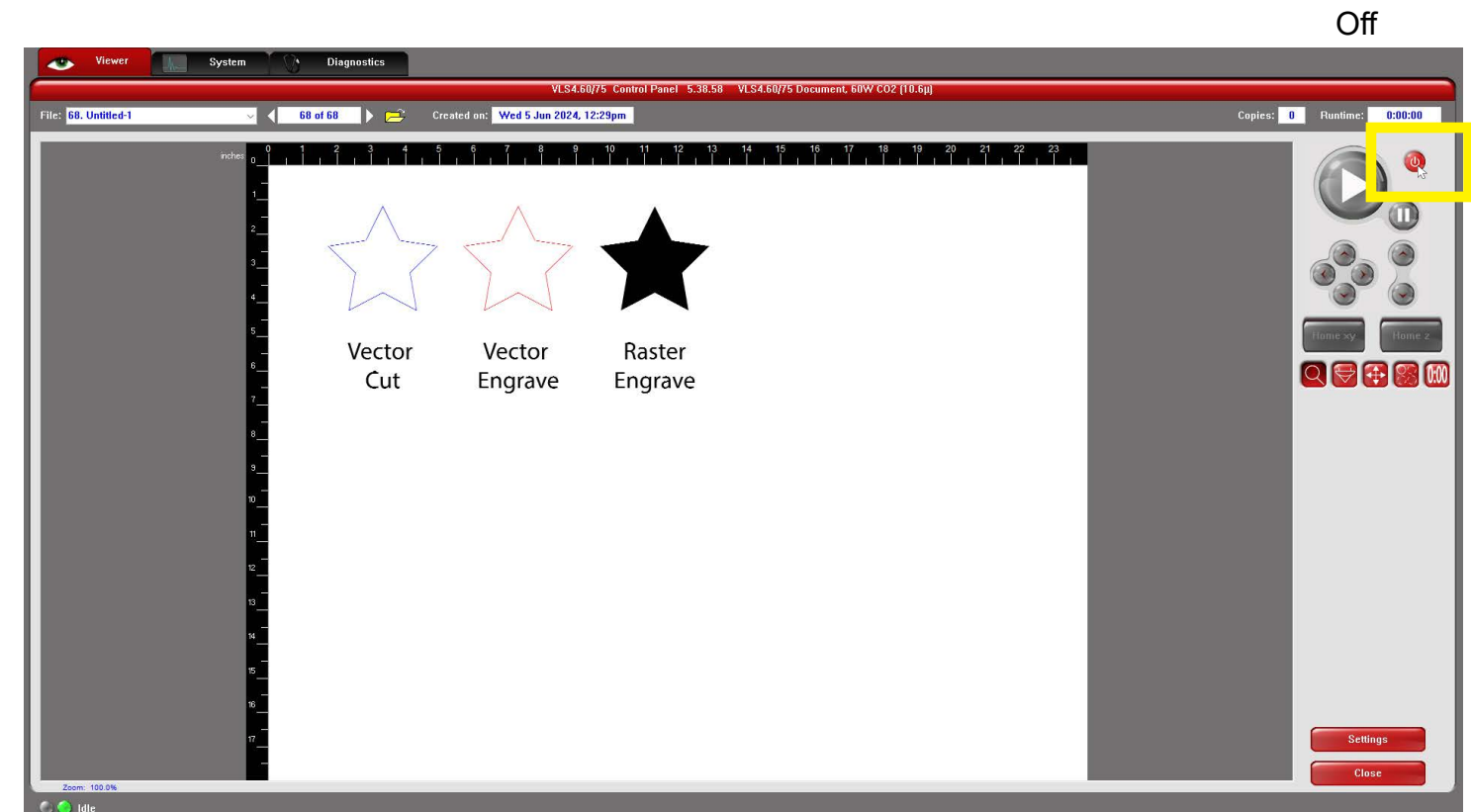


Laser Cutting Software

After you have printed or exported your design from your program of choice, open the laser cutting software by clicking the small red icon on the bottom right corner of the taskbar. It should come up in fullscreen mode.



To turn the laser cutter on, click the red power button on the screen and wait a few seconds. If you see the rest of the buttons greyed out, it means it is off. After clicking the red power button, the greyed out buttons should turn to color, meaning the laser cutter is ready to use and the software is connected to the machine.

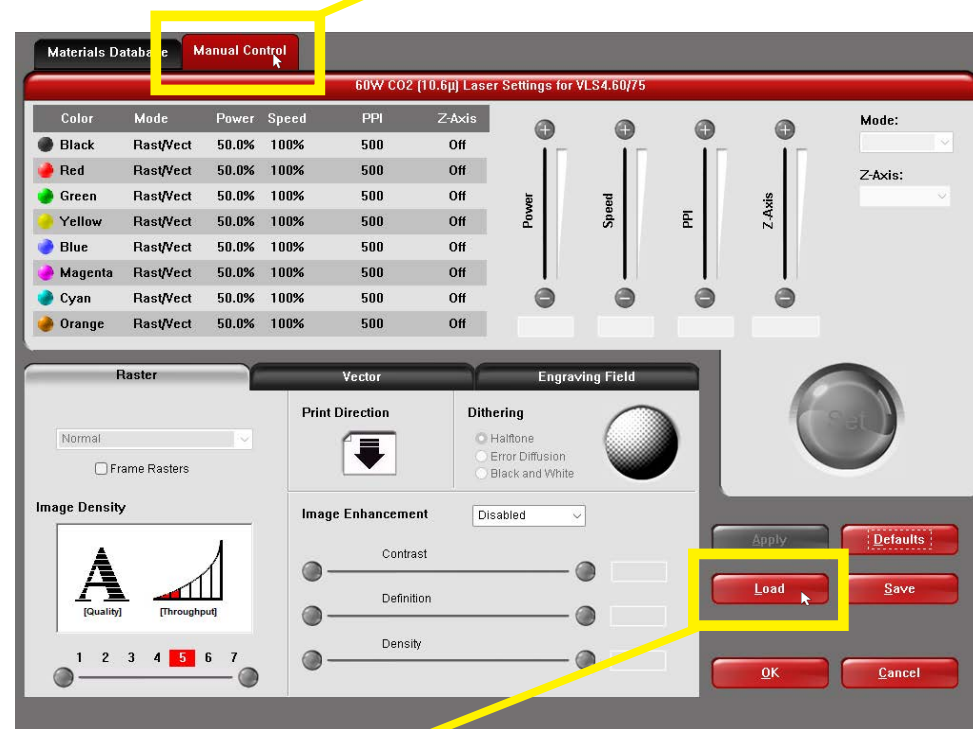


Loading Material Settings

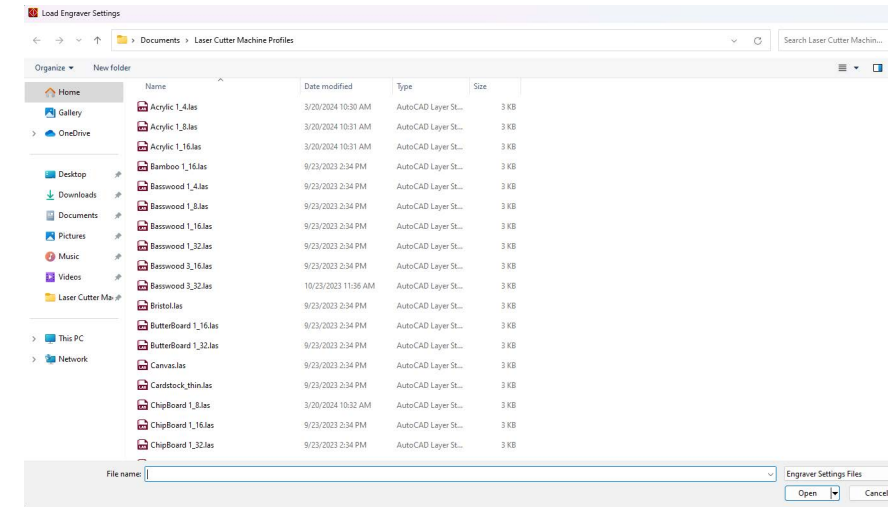
1 To load the settings for your material, start by clicking “Settings”.



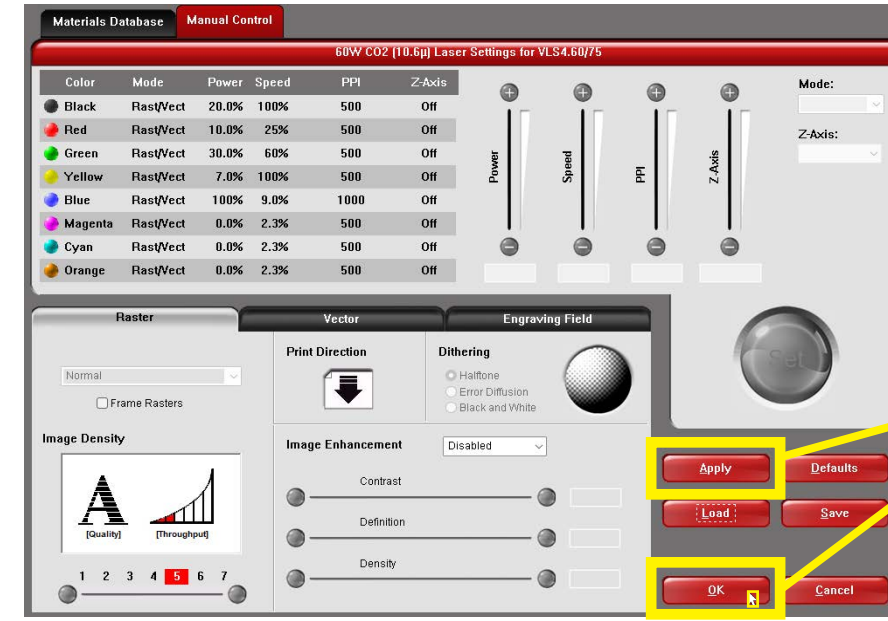
2 Make sure “Manual Control” is selected.



3 Click “Load” to open the laser presets.



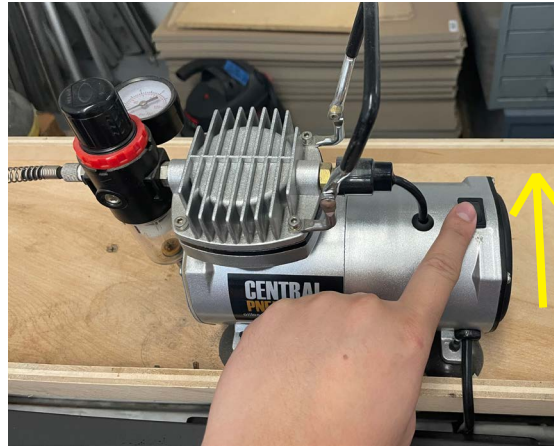
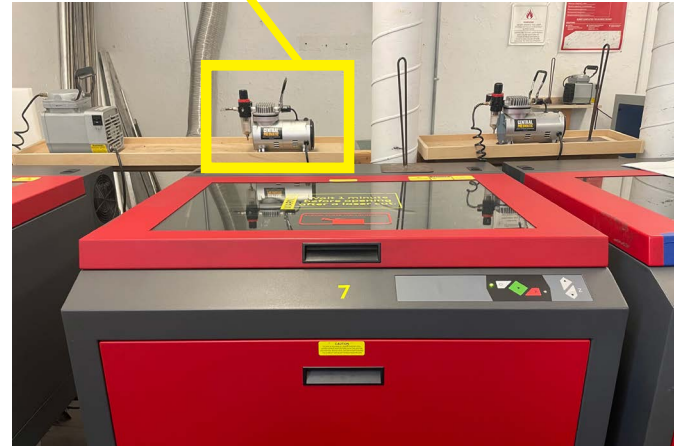
4 Select the preset that matches the material you are cutting. Click open to confirm. If the material you are using is not listed, please consult a technician.



5 Once your material setting is confirmed, click “Apply”, and then “OK”.

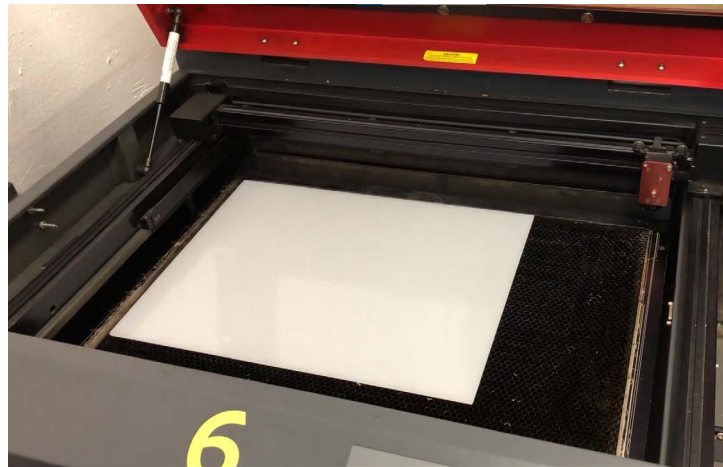
Machine and Material Set Up


1 Turn on the **compressor**.

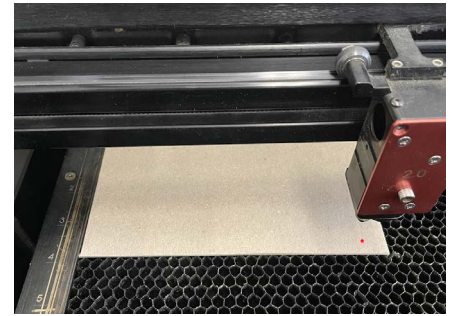
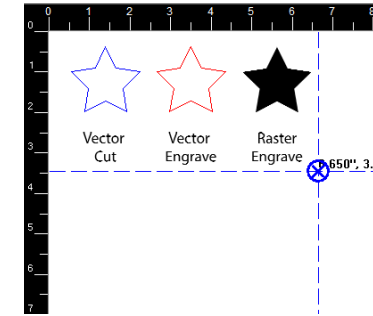
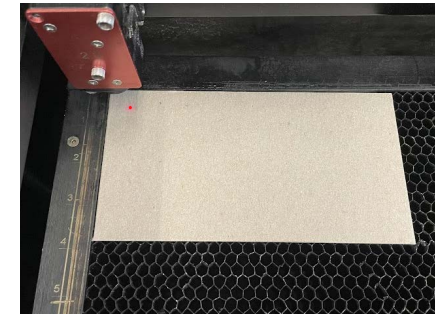
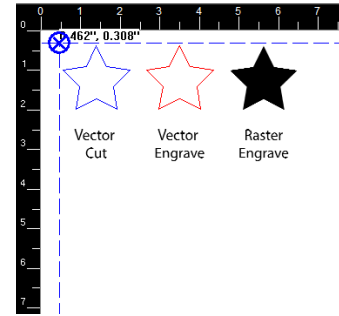


Push button this way to turn on

2 Peel off **any paper or coating** you have on your material and place it in the **top left corner**.



3 Use the **“Focus View”** button  on the control panel to double check that your design fits on your material. Click on the place you want the laser to go. While the lid is open, there will be a red laser pointer indicating where you have clicked on the file in the laser cutter software. Speak to a technician for help if the bed is misaligned.

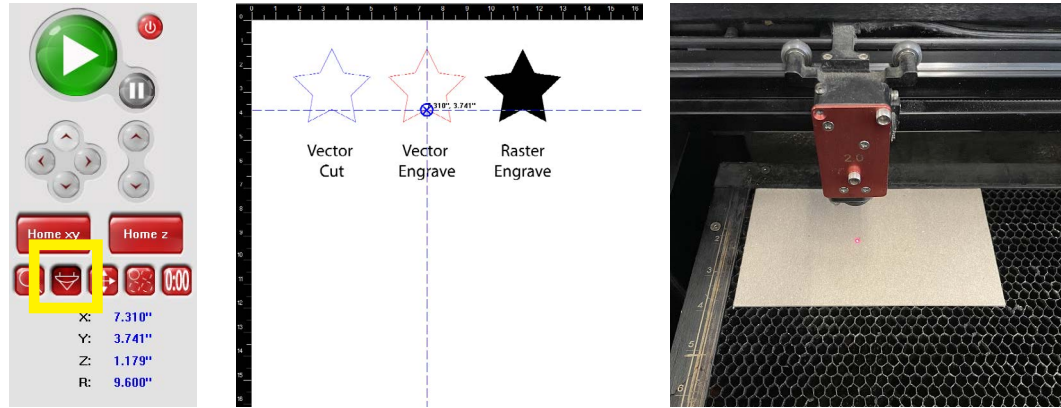


4 Make sure your **material is as flat as possible** to achieve best cutting results. You may use weights, clips or tape to flatten your material but make sure they are not in the path of the laser cutter.



Machine and Material Set Up

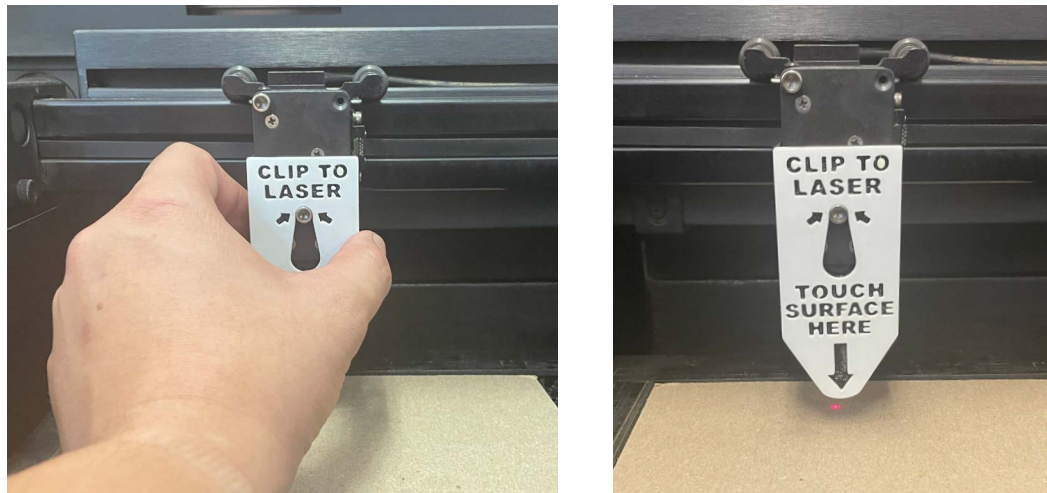
- 1 Use the “Focus” function on the control panel to move the laser head to a space on your material. Click on the place you want the laser to go.



- 2 Use the Z arrow keys to move the bed down.



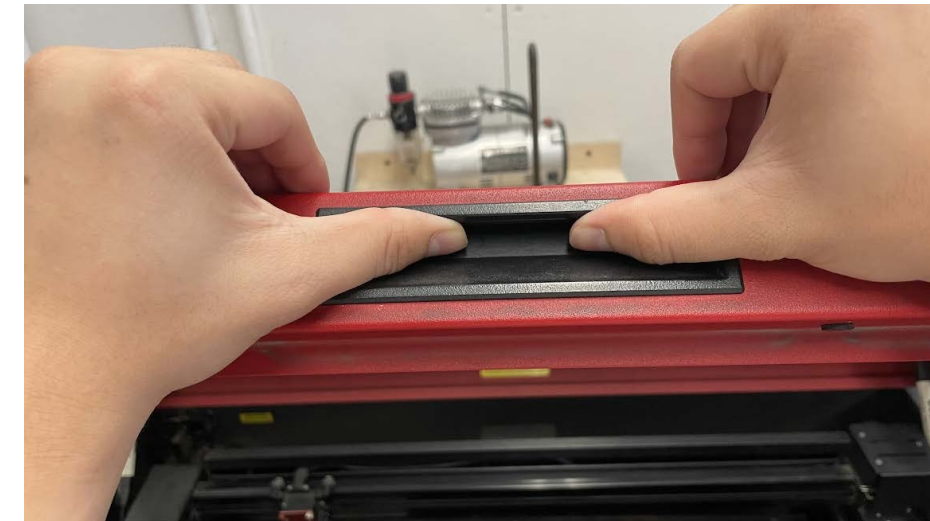
- 3 Clip the focus tool onto the middle screw of the laser head.



- 4 Use the Z arrow keys to move the bed up until the tip of the tool just hits the surface. If the screw starts moving down the gap, it means you are too close and need to move the bed back down.



- 5 Take the tool off the laser head and close the lid slowly and carefully. Your file is ready to cut!



How to Play/Pause

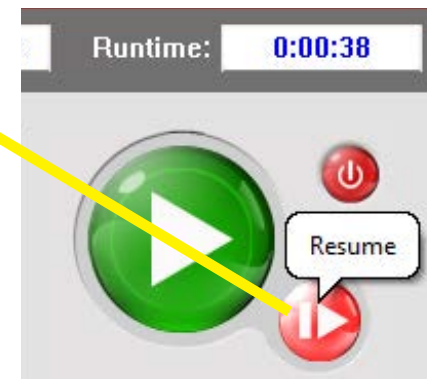
The **play button** will always start any file **from the beginning**. Click it when you're ready to start cutting your file.



The **red pause button** will **pause/stop** the file if it is currently cutting.



Once it is paused you can **resume** by pressing the **red button** again.



Frequently Asked Questions (FAQ)

Q: How do I know if the laser has cut through my material?

A: Hold down your main material and try to lift the cut out parts with some tape or a knife. If it does not move, DO NOT move the material and press play again. Consider deleting the parts of your design that have already been cut to save time on your second cut.

Q: My lines in Illustrator won't stay 0,0,255 Blue (they stay a different kind of blue, or stay black)?

A: Make sure your Document Color Mode (File > Document Color Mode) is 'RGB Color'. If it is and it's still not working, have your lines selected, go to Window > Color, select the drop-down menu icon on the Color Panel, select 'RGB'.

Q: Some of my lines aren't appearing on the Laser Control software.

A: Speak to a tech. Filters, Clipping Masks, Opacity settings and other file adjustments can cause artwork to disappear on the laser control software. Otherwise, someone might have just 'Skipped' that line color while previously using that computer.

Q: How do I manually change speed and power settings, or skip a color?

A: Speak to a tech if you have never manually changed the speed or power settings on the laser cutting software before. While choosing your material settings, after you have chosen a material preset but before you have pressed 'Apply' and 'OK', select the color you want to change or skip, change power/speed settings or select 'Skip' from the 'Mode:' drop-down menu, select 'Set', select 'Apply', select 'OK'.

Q: Can I raster engrave in grayscale (black & white)?

A: Yes. The black (0,0,0) parts of your grayscale image will raster at full power, anything in the grayscale will raster with power according to how close to black it is. Consider the color of your material, if it is light colored, then you may need to invert the colors on your file so that you achieve your desired effect.

