



Epilog Fusion Pro 36 Complete Walkthrough

Brief complete overview of how to use the Epilog in one complete guide.

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Introduction

This guide covers everything needed for basic use of the Epilog. For additional information on the more advanced ways to use this machine, please refer to the other guides on the [machine page](#).

Vector software options:

Adobe Illustrator is the easiest method of preparing files for the Epilog as it is free for all UMD-affiliated personal who have UMD logins. Other options include CorelDraw, Photoshop, AutoCAD, etc.. As long as the software has the ability to create vector graphics or a .dxf file, it will be able to properly be prepared in Illustrator to utilize the scaling features on the Epilog with ease. When used in conjunction with Adobe Illustrator, the Epilog Dashboard is a powerful tool to position your files and determine the settings for your material.

Additional notes:

Most of this guide is fairly similar to how the Epilog Fusion M2 in the AFL works, **HOWEVER**, there are some **major changes** that should be noted.

Step 1 — Epilog Power and Safety precautions



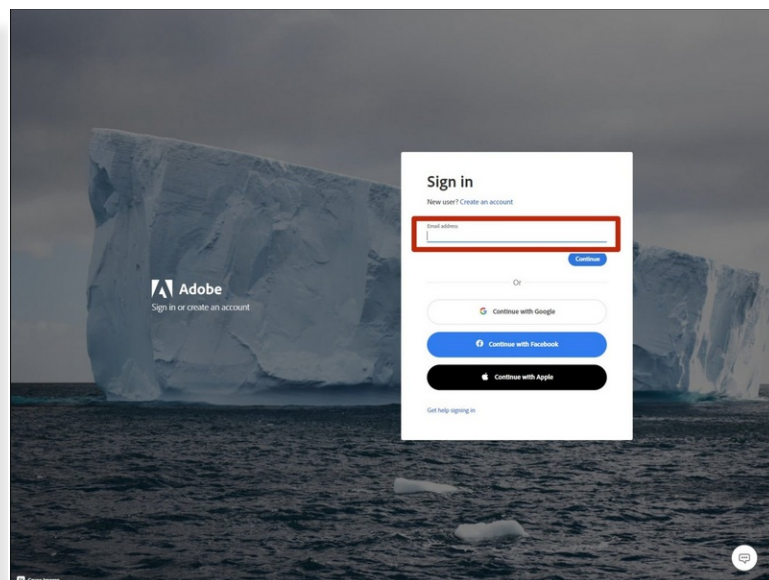
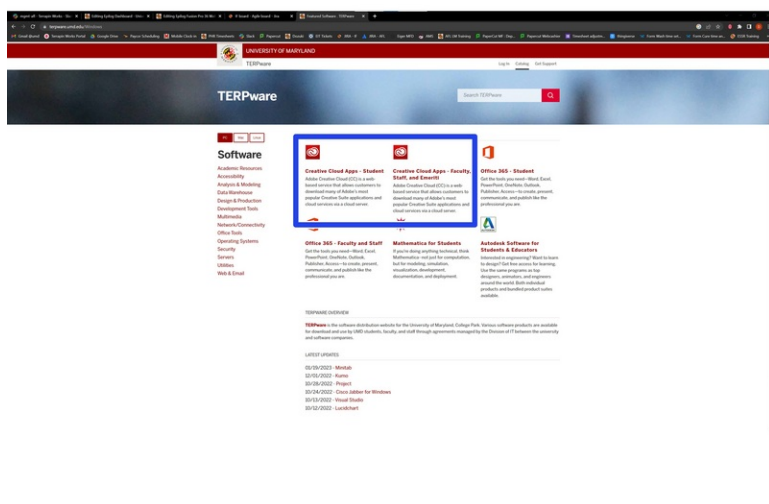
- There is a rocker switch located on the right hand side to turn on and off the Epilog.
- ⚠ There is NO emergency stop on this machine. To pause a job you either turn off the Epilog with the rocker switch or press the Start/Pause button next to the control panel.
- ⚠ There is a fire extinguisher located at [tbd]. *this fire extinguisher is made for electronic equipment* If you believe there is a need for a fire extinguisher, alert a staff member to your situation.
- ⓘ Burning and a slight flame underneath your material is normal during cutting, but an actual fire and heavy smoke is not. Use good judgement to determine if your material is burning or poses a significant fire risk based on what you see happening in the machine.
- ⚠ Keep the surrounding area of the Epilog clean and clear at all times. There should not be any clutter, combustible materials, explosives, or volatile solvents such as acetone, alcohol, or gasoline near the Epilog.
- ⚠ During usage of the machine, the cutting process poses a fire risk. **WHENEVER YOU ARE CUTTING, YOU ARE REQUIRED TO STAY WITH THE LASER.** Never operate the laser system while unattended.

Step 2 — Safety Features



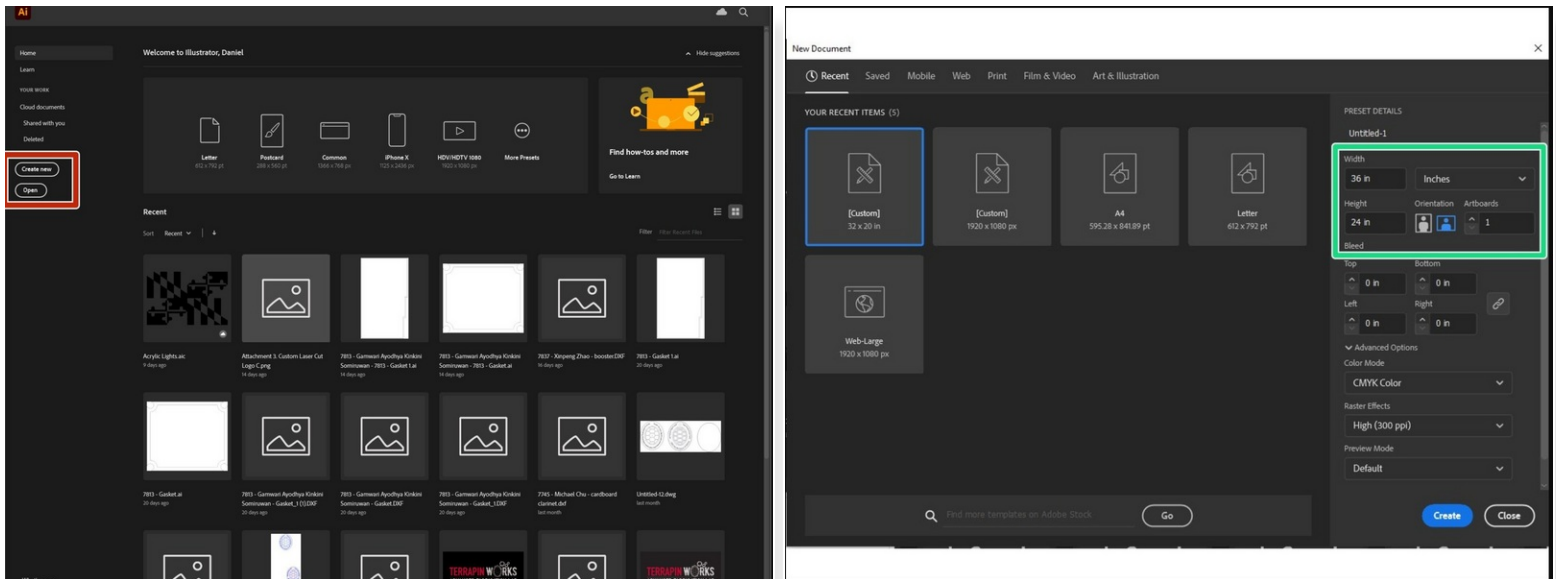
- The Epilog is a **Class 2 laser** when all the safety features are working. Everyday examples of these types of lasers include laser pointers and range finding equipment.
 - ① Class 2 means you should not stare at the beam spot of the laser for an extended period of time as it may cause damage to your eyes. If you do, you can utilize the "Blink Reflex" (look away from the laser) to save your eyesight from potential damage.
- The Epilog has safety interlocks on all its' doors. Due to this, the laser will **NEVER** fire if **ANY** of the available doors are open.
 - ① This also means if you open the door during cutting the laser **WILL** turn off.
- But, the movement of the gantry **WILL NOT STOP**. To stop the gantry press the Start/Pause button.

Step 3 — Getting the Design Software



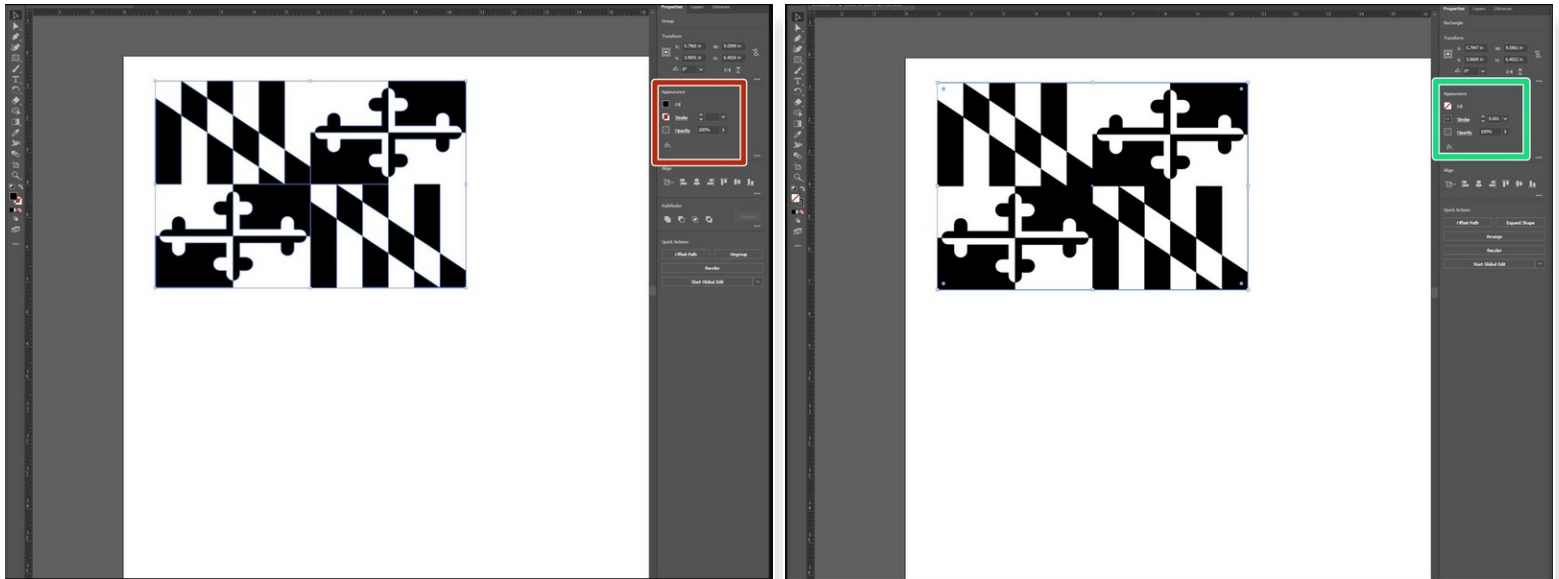
- As a UMD Affiliated personnel, you have access to a variety of different products and services all for free. Adobe Creative Cloud is a part of these products.
- To download the Creative Cloud, go to [Terpware](#).
- Log in using your directory email address, this will bring you to the CAS login.
- Download Illustrator from the **Available in your Subscription** section.
 - Then you can go ahead and open the Illustrator App either directly from Creative Cloud, or the shortcut that was downloaded to your computer.
- ❗ This step can be skipped if you are using one of the lab computers that already have Illustrator downloaded.
- ❗ If it is your first time using the lab computers, you may be prompted to login to Adobe. Just use your UMD CAS login and you'll be ready to go!

Step 4 — Entering Adobe Illustrator



- Once Adobe Illustrator is opened, it will take you to the Home page.
- From here, you can either create a new file from a template or open an existing file such as a *pdf*, *dwg*, *dxf*, *svg*, *jpeg*, *etc*.
- A good example of importing files is exporting a dxf directly from SOLIDWORKS as a dxf and then loading the design in Illustrator to be cut.
- I recommend you make the template with an artboard size of 36" x 24" as that is the bed size of the Epilog, and will allow you to see if your design will fit inside the machine.
- ❗ If your design is **outside** of the white page of Illustrator, then when you go to print it **WILL NOT** show up in the Epilog Dashboard.

Step 5 — File Prepping



- After you are done creating your design in Illustrator or have imported your design, the next step is to have the proper line width for your vector (cutting) lines.
- All lines in Illustrator that you want to be cut need a stroke size of **0.1pt** or less, any lines that are larger than this size will be engraved. In general, just use **0.001pt** for cutting lines and **1pt** for engraving lines.
 - Selected in this screenshot is the engraved portion of the Maryland flag with a **fill** of **black** and a **stroke** of **0**, for engraving lines please use **1pt**.
 - Selected next in this screenshot is the rectangle that will be cut out with a **stroke** of **0.001** and a **fill** of **[None]**.
- In general, shapes that will engraved should have a **fill** color of **black** and a **stroke** size of **0** to ensure they are only engraved, and line art should utilize a thicker than **0.1pt** stroke size or "vector engraving."
- Vector engraving is when the line thickness is $>0.1\text{pt}$, which makes it a cutting process, but the cutting settings reflect a faster speed and lower power to make sure the laser does not punch through the material.
- ❗ This is useful for line art as the regular engraving time for lines is much slower than the vector engraving.

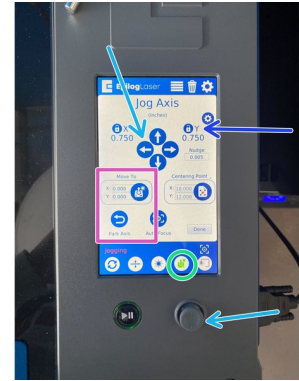
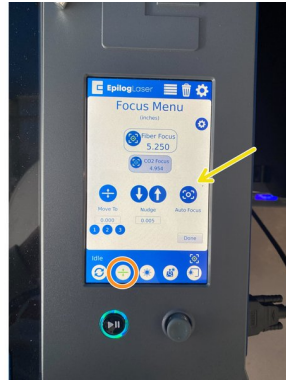
- i** If you are file prepping on your own machine, feel free to save the document at this point as a .ai file. Then you can transfer the file to one of the lab computers to finish printing your job.

Step 6 — Turning on the Epilog



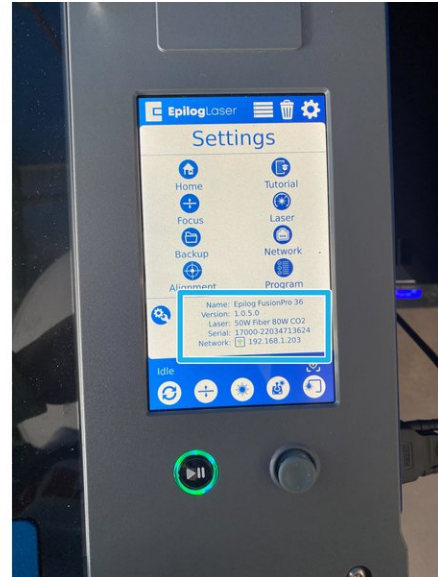
- There is a power switch located on the right hand side of the machine, in between the Epilog and the Air Filter.
- Once this switch is turned on, the Epilog will go through a homing and powering on sequence.
- Once that is complete, the touch screen control panel will now be useable.

Step 7 — Epilog Control Panel



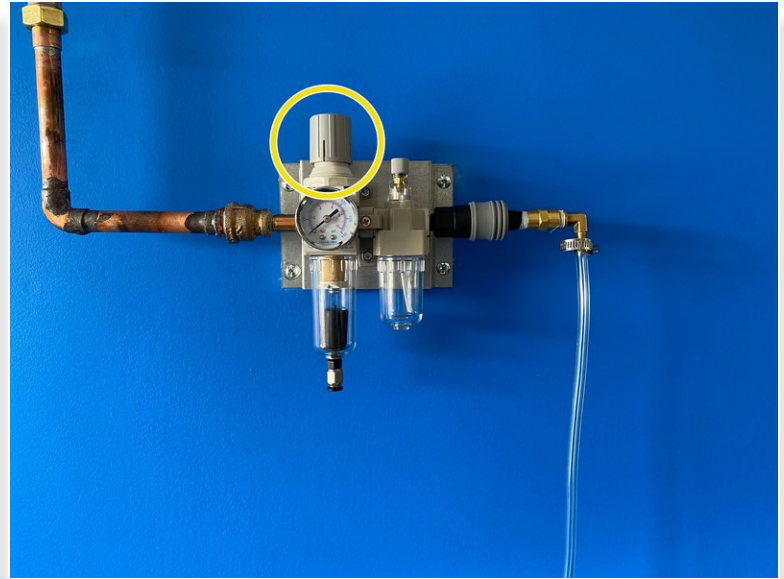
- When the Epilog is finished setting up and homing, it displays the job list on the control panel. This can be accessed at anytime from pressing the "hard-drive" symbol on the control panel.
- The **Focus** menu can be accessed from pressing the focus button. Use the joystick to manually move the bed up and down. The nudge button is useful for fine adjustments to the height. Once done with focusing, press the **Done** button.
- You can also press the auto focus button to use the plunger on the gantry to focus the lens.
- The **Jog** menu is useful for moving the gantry head to a different position. Access this menu by pressing the button that has a joystick and a laser light on it.
 - This menu allows you to either use the joystick to move the gantry or the touchscreen arrows to nudge the gantry in small increments to different positions in the Epilog.
 - You can also lock the x-axis or y-axis to only move the gantry in one axis at a time.
 - In addition, you can utilize a **Move To**, which would bring the gantry head to a specific place in the cutting bed, as well as the **Park Axis** which returns the gantry to the home position in the far left corner of the machine.

Step 8 — Epilog Control Panel



- Access the settings menu by pressing the gear in the top right corner of the control panel. Generally, none of these menus are needed for regular operation.
- This menu allows you to access a few different useful tools as well as some information about the laser:
 - **Focus** - allows for calibration of the different types of focus options.
 - **Tutorial** - A quick tutorial on how to use the machine. This is **NOT** necessary to use as it is just for first-time-setup of the machine.
 - **Laser** - advanced laser settings. Not necessary for average use.
 - **Backup** - to backup and restore system settings.
 - Listed here is the name of the laser, the laser types, the serial number, and the network IP
 - The rest are mainly for maintenance and are **NOT** needed for standard operation of the machine.

Step 9 — Air Cleaner and Air Assist Operation



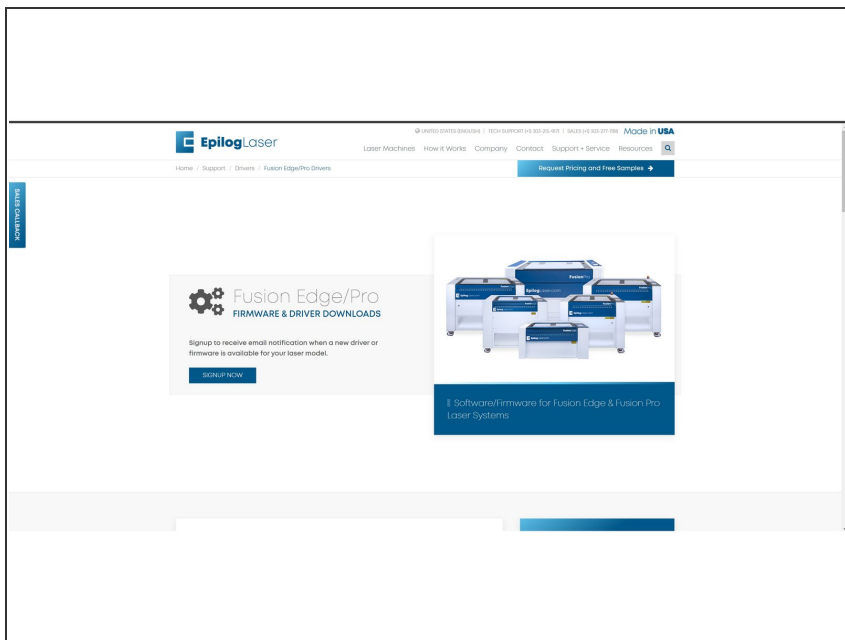
- The Air Cleaner and Air Assist is located directly behind the Epilog on the wall.
 - To use, simply turn the knob in the clockwise direction until the PSI reaches to at least 10 PSI. The maximum allowed amount is 30 PSI.
- The Air Assist is not connected to any other systems on the Epilog, so whenever it is on, the building air will continue to flow through until the user turns it off again.
 - To turn off the air assist, simply rotate the knob in the opposite direction until the gauge reads 0 PSI.
- ⓘ Air Assist is useful for engraving as it creates positive pressure and blows away any dust that is made on your material during engraving.
- ⓘ Air Assist also is useful for cutting, however, for a material that is very light or thin, the air assist can blow the cut pieces away and cause a missed cut. To avoid this, simply adjust the air assist to zero and this will keep lighter materials in place on the cutting bed.
- ⚠ Be careful when turning off the air assist with certain materials as it may cause excessive burning and large flames may appear.

Step 10 — Air Filter Operation



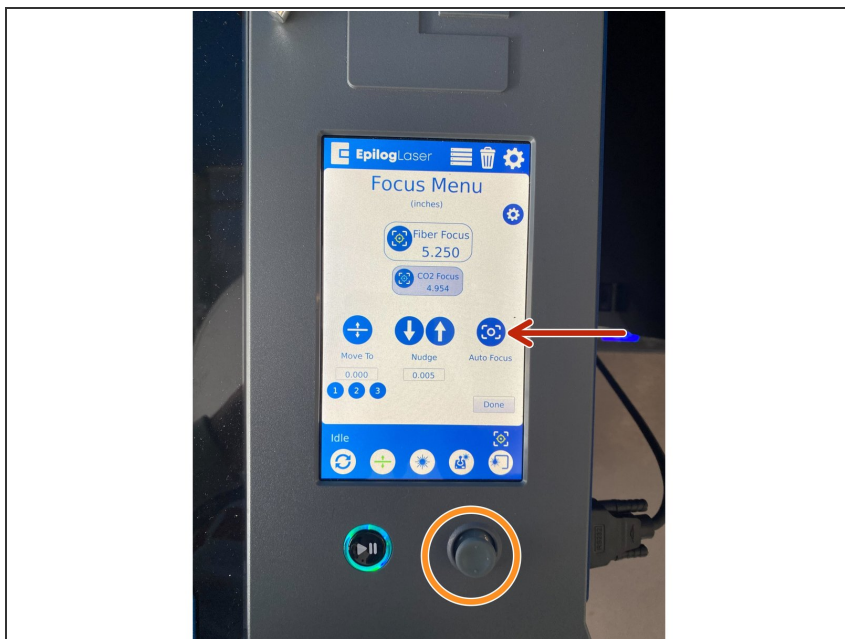
- The Air Filter sits next to the Epilog.
- There is a switch on the front. This only needs to be used for maintenance purposes and should remain on at all times.
- The flow rate of the Air Filter can be changed by using the up and down arrow keys on the front of the Air Filter.
- A speed of about 40% - 50% is more than enough for most common materials. Depending on how much smoke and fumes are made when cutting, this value may need to be adjusted.
- ⓘ The Air Filter automatically turns on whenever the Epilog is running a job. Due to the way it turns on and off, the air filter **will not** run for an extended period of time after a job. This means that leftover fumes from cutting or engraving will be left in the machine.

Step 11 — Software Installation and Setup



- All of the software required to run jobs for the Epilog is located at [this link](#).
 - Download and install the most recent version of the *Epilog Software Suite*.
 - A comprehensive guide of how to do this is located in the [Epilog Manual](#) on page 29 or through [this dozuki guide](#).
- i** This step can be skipped if you are using one of the lab computers.

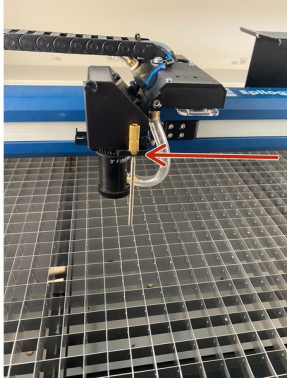
Step 12 — Manual vs. Auto Focusing of the Laser



- There are **three** options for focusing the laser in the Epilog Dashboard and on the control panel.
 - **Plunger:** When a job is set to the Plunger option, the plunger will measure the focus distance at the first place on the job that the laser will fire. The table will automatically move up or down so that the top of your material is the correct distance from the bottom of the focus lens.
- i** This option is best for consistently flat materials such as acrylic.

- **Thickness:** For the Thickness option, input the thickness of the material you are using to engrave or cut into the Thickness box under each individual process. The table will automatically move up or down so that the top of your material is the correct distance from the bottom of the focus lens, right before running the job.
 - ⓘ This option is best for consistently flat materials such as acrylic
- **Off:** This is the default option for Auto Focus. If “Off” is selected, the table will not move up or down when the job starts. When set to Off, you must use the focus menu on the Control Panel to move the bed up and down with the joystick and the focusing attachment.
 - ⓘ This option is best for rotary engraving as well as bumpy surfaces or oddly shaped workpieces.
- In general, **Off** (manual focusing) is much better for ensuring the material is properly focused if the surface is bumpy or the work piece is slightly warped.

Step 13 — Manually Focusing the Laser



- To manually focus the laser, use the focusing tool from the cabinet next to the Epilog and place it on the designated slot on the gantry head.
- Then, go to the jog menu on the control panel to move the gantry to be above the workpiece.
- Use the focus menu on the control panel to move the gantry head up or down until the focus tool just barely touches your workpiece.

Step 14 — Manually Focusing the Laser



- Once the focus tool is just barely touching the workpiece, press **Done** on the control panel.
- The focal height of the laser is now set! Any jobs that are set to **Off** in the Auto Focus Settings will now use this focal height in the selected job.

Step 15 — Image Dithering



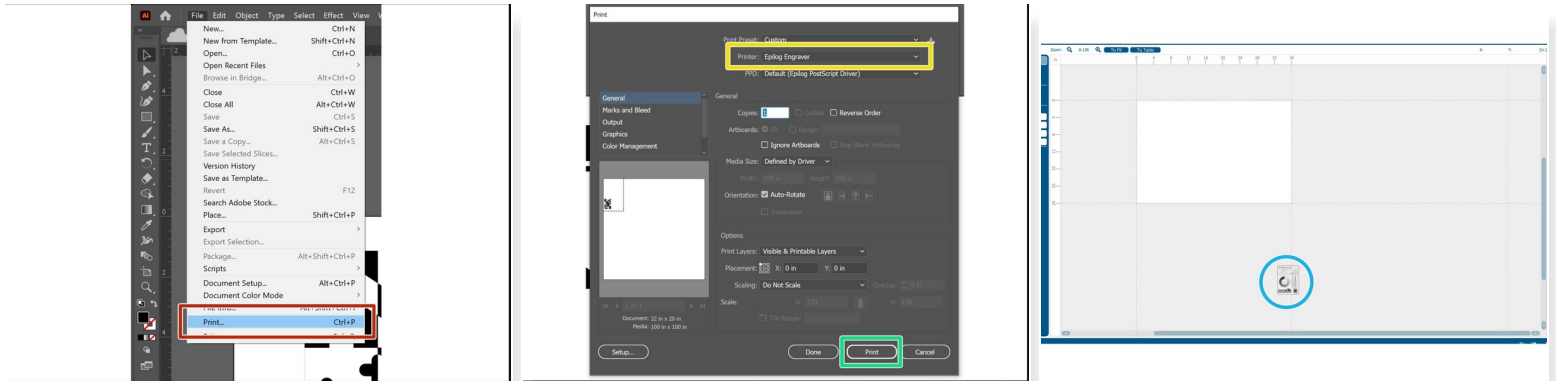
300 DPI Standard Mode



300 DPI Stucki Mode

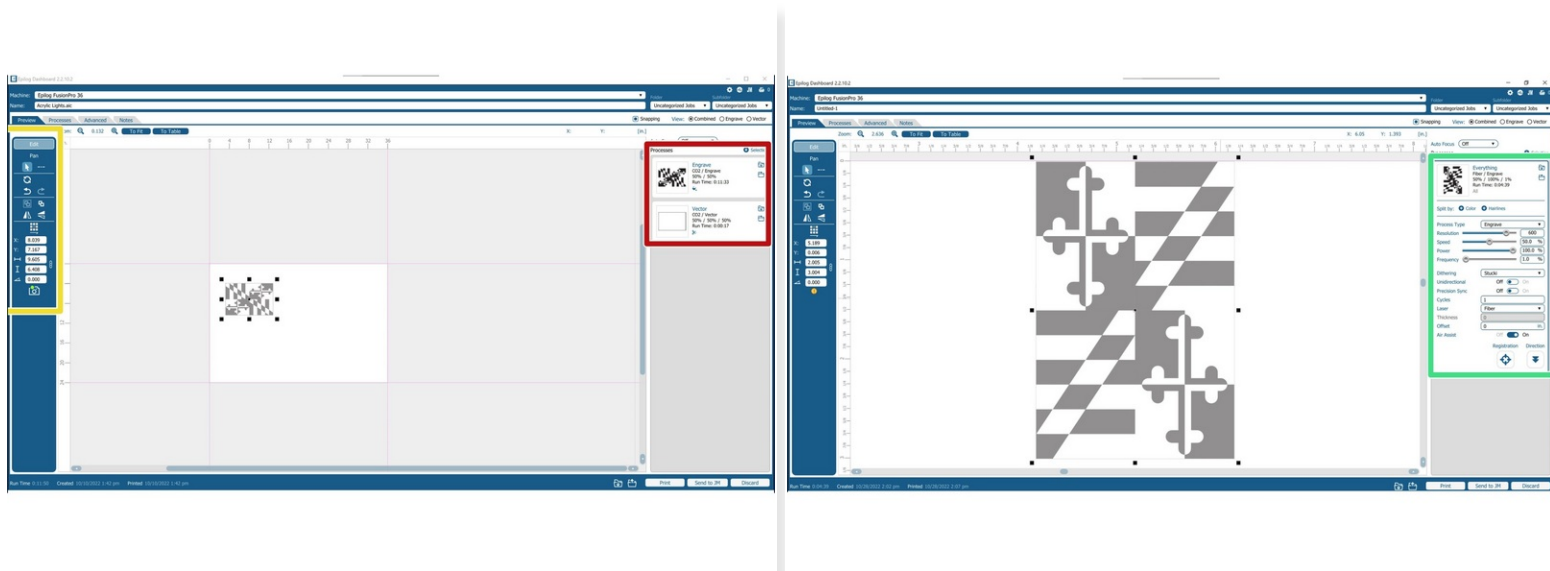
- Image Dithering is the placement of the dots during engraving.
- Using a different mode of dithering can create a more natural looking engraving.
- By playing around with the dithering, you can achieve amazing quality engravings at a much lower DPI than expected. In general though, using 600 DPI with Jarvis or Stucki mode will always look good.
- For certain materials such as glass, a lower DPI is needed to prevent the material from absorbing too much heat. Changing the image dithering allows for a high quality engraving regardless of the DPI requirements due to the material properties.

Step 16 — Sending a Job to the Epilog Dashboard



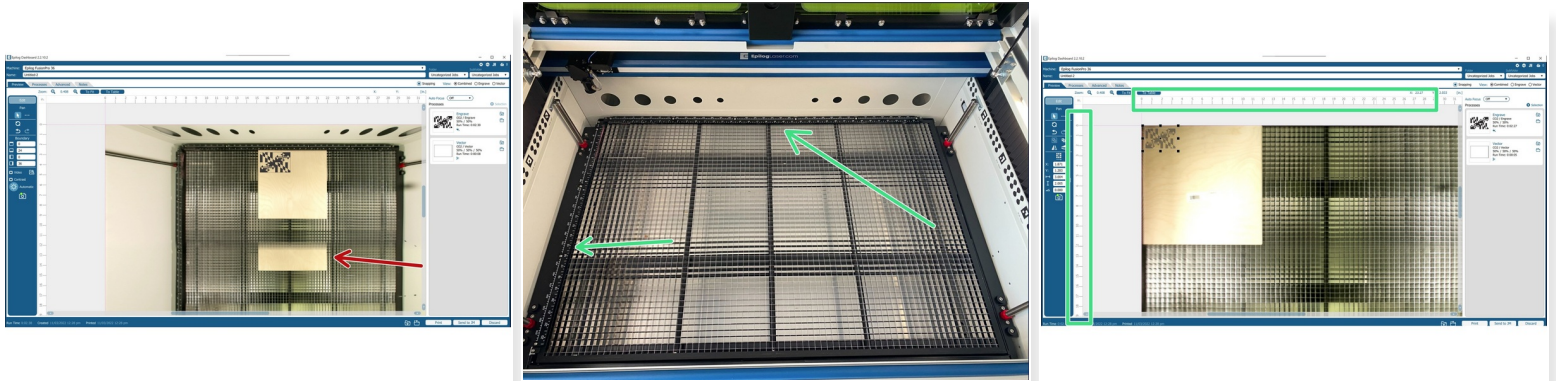
- To print from Adobe Illustrator to the Epilog, go to **File**, then click **Print**.
- ❗ Make sure you are connected to the IDEA Factory RP WiFi Network, ***otherwise this will not work!***
- The **Print** menu should appear. Make sure the printer selected is the "Epilog Engraver."
- Then click **Print** and the file should be forwarded to the Epilog Dashboard automatically.
- When you import into the Epilog Dashboard, the file may be placed somewhere off of the cutting bed. Simply zoom out with the scroll wheel and use the left mouse button to drag your design to the cutting bed.

Step 17 — Epilog Dashboard: Settings & File Positioning



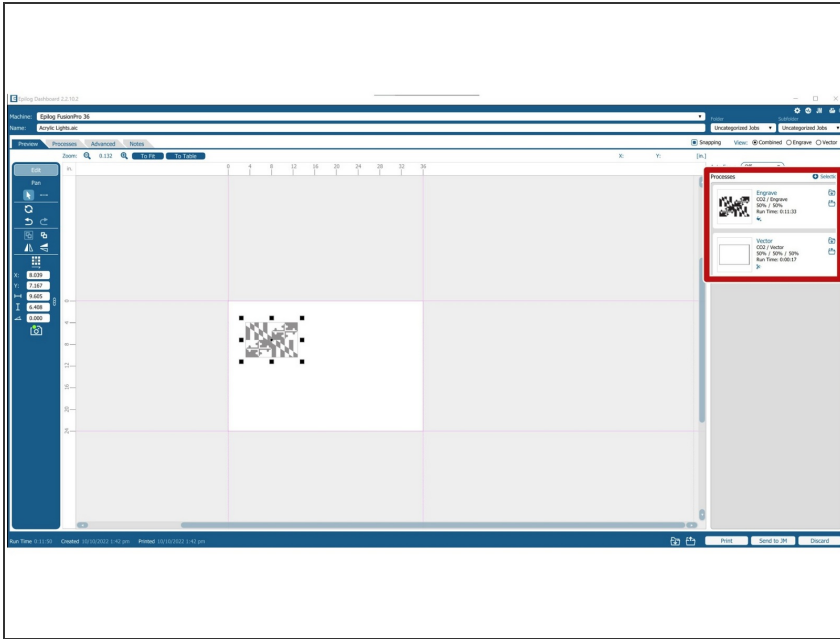
- When you print a job to the Epilog Dashboard, you will see all the processes for cutting and engraving on the righthand side.
 - The processes are listed in the order they will be completed. Engraving processes are automatically ***always*** cut first.
 - To make changes to the settings, click on the different processes and change the values based on the recommended settings in [this spreadsheet](#).
- ☛ Be sure to double check all the settings are correct before clicking **Print!**
- On the left-hand side is several tools to set the position, scaling, and angle of your design. It can also flip horizontally, vertically, and group and ungroup items.

Step 18 — Epilog Dashboard: Settings & File Positioning Continued



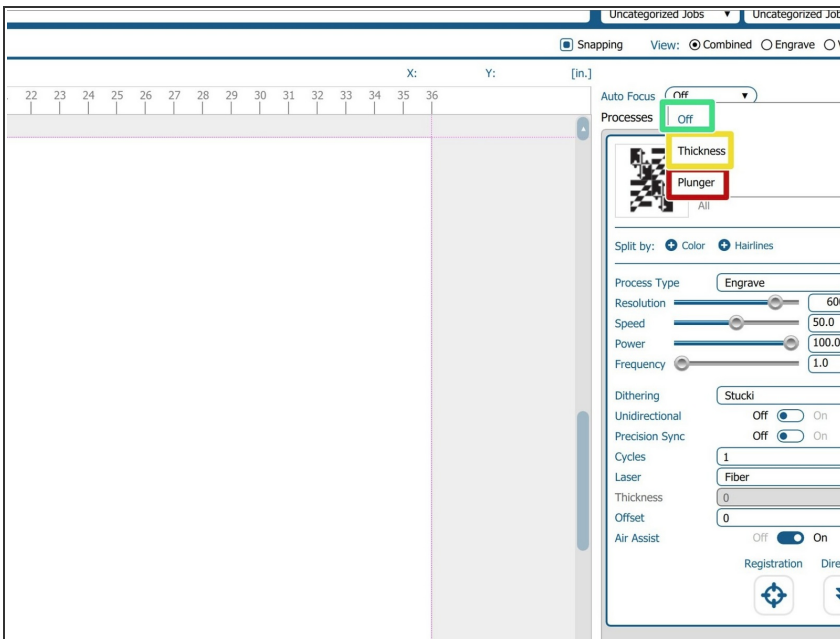
- If you are connected the IDEA Factory RP WiFi Network, then the IRIS camera system should be displaying a live feed of the cutting bed to the Epilog Dashboard.
- This allows you to see a preview of your design on your material.
 - If you are trying to get a more accurate preview, place your stock material directly underneath the cameras, either on the top half or bottom half of the cutting bed as they do not scale the images properly on the edges.
 - There is also the possibility of a weird duplication effect of the material depending on the height of the bed due to the positioning of the two cameras.
- To align your design, you can utilize both the camera system and the rulers that are on both the inside of the Epilog and in the Epilog Dashboard.

Step 19 — Epilog Dashboard: Settings & File Positioning Additional Information



- For more information on the proper settings to use, and what to change if the result is not as desired, visit the [Epilog Dashboard guide](#).
- Definitions for all of the settings in the Epilog Dashboard is available on the [machine page](#).
- A comprehensive live document of the settings is located in [this spreadsheet](#).

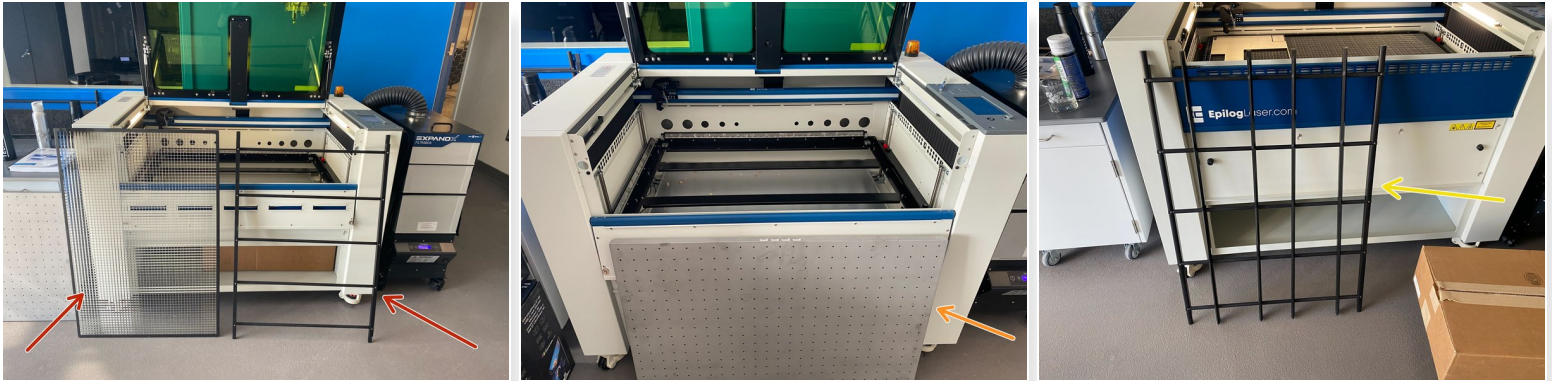
Step 20 — Epilog Dashboard: Settings the Focus



- There are three options for setting the focus.
- **Plunger** - This feature should **only** be used for flat materials that have NO warping. Examples include acrylic or plywood that is **NOT** warped.
- **i** By using this feature in the Epilog Dashboard, the job will auto focus by plunging the gantry head into your material every time you start the job.

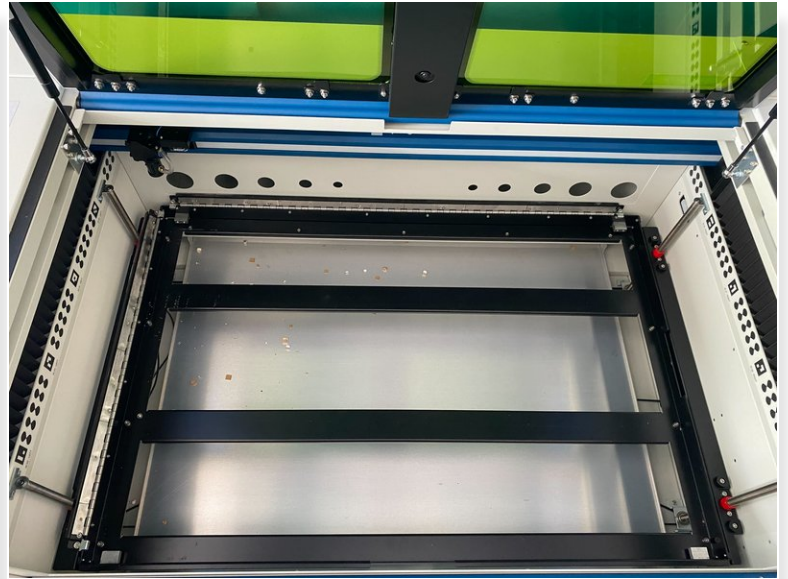
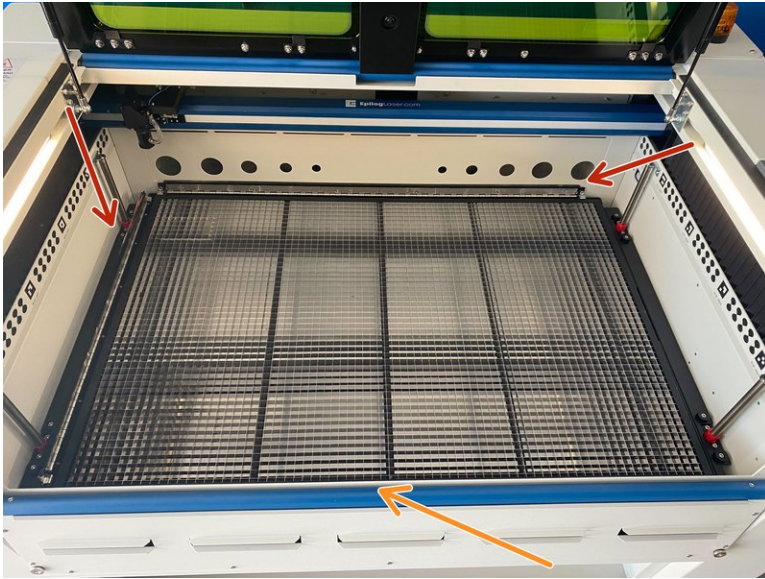
- **Manual Focus** - This utilizes the manual focus tool and the focus menu on the touch screen control panel. Simply slot the focus tool into one of the slots on the gantry head and use the joystick to move the bed up or down so that the tip of the focus tool barely touches the surface of your material.
 - Once the manual focus is done, return the focus tool to the drawer next to the Epilog, and press **Done** on the control panel.
- **Thickness** - Through measuring the thickness of your material, you can use the Epilog Dashboard to set the focal height based on this thickness value.
 - ⓘ This is a quick way to auto set the focus, but is not as accurate depending on your measurements.
- Once the Epilog has been focused (or is set to be automatically focused), continue to the next step. For more in-depth information on manually setting the focus, visit this [guide](#).

Step 21 — Laser Bed Options



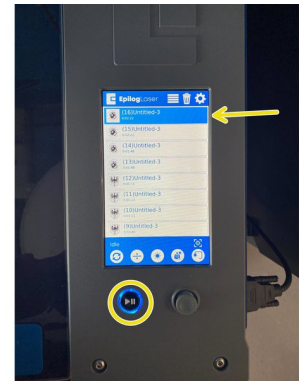
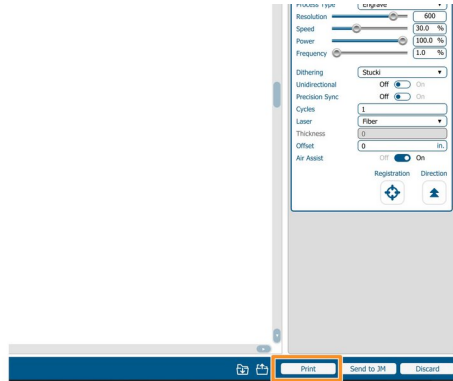
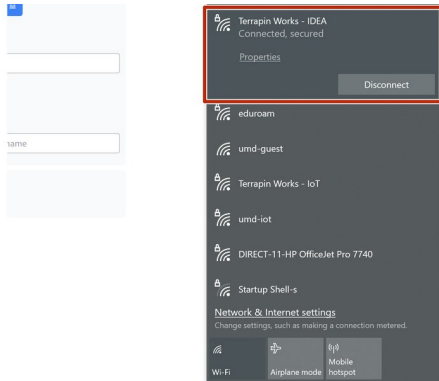
- There are a few different options for what to lay your material on top of.
- For **ALL** vector **cutting** it is **mandatory** to use the grid bed. The rail supports are also necessary when using this bed.
- For any engraving or heavy materials, the more reinforced plated bed can be used to provide a flatter/more even surface.
- ① Common engraving jobs should just use the grid bed as it is more than capable and faster, but better results can be achieved with the reinforced plated bed.
- The rail style beds can be used for propping up heavy materials or cutting jobs where a minimal number of marks on the back of the material is desired. These beds are generally not required except under special circumstances.

Step 22 — Installing/Removing the Laser Bed



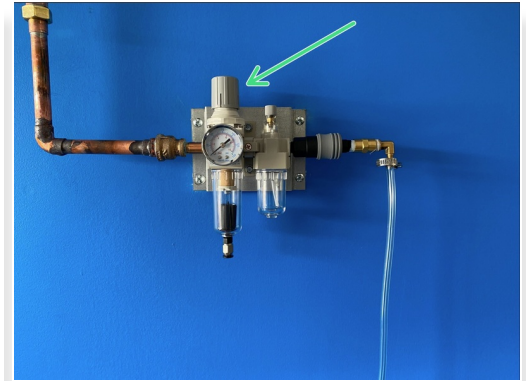
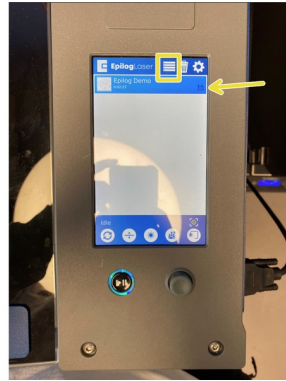
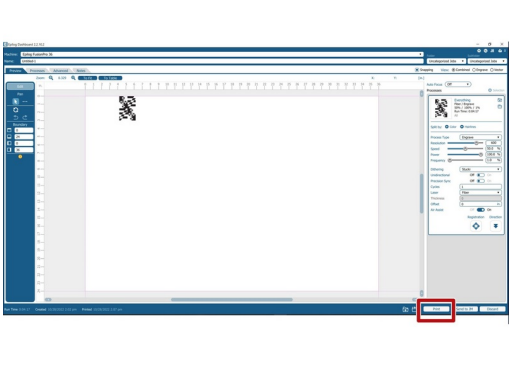
- Flip up the two rulers inside the Epilog.
- Grab the edge of the cutting bed from the front side lip and place the cutting bed in a safe location near the Epilog.
- If using the more reinforced engraving bed, make sure to remove the rail style supports as well.
- Then just place whatever bed you need into the machine and flip the two rulers back to their down position.

Step 23 — Loading a file and engraving or cutting



- Make sure you are connected to the **Terrapin Works - IDEA** WiFi network.
- On the Epilog Dashboard, press **Print** to send your positioned file to the Epilog
 - For more comprehensive information on using the Epilog Dashboard, visit [the Epilog Dashboard Guide](#).
- Use the control panel on the Epilog to select your job, and then press the Start/Pause button. The Epilog will do the rest of the work for you.
- Once your part is done, open the machine and collect your part.

Step 24 — Printing your job



- Once everything in the Epilog Dashboard is set correctly, make sure to double check the positioning of your part as well as settings are correct.
 - Once complete, press the **Print** button to send the job to the Epilog.
 - ***i** If you would like to locally save this job for the future, press the **Print to JM** button. This will save everything about the print file you just created in the Dashboard. To learn more about this, visit the [Epilog Job Manager Guide](#).*
 - Your job will now show up on the touch screen control panel under the **Job Menu** screen.
 - Make sure to turn on the CA located on the wall behind the Epilog to 15-20 PSI by rotating the knob clockwise before starting your job.
- ⚠ The maximum PSI that should be used is 30 PSI. Higher PSI will cause the air tube to pop off of the back of the machine.**

Step 25 — Printing your job

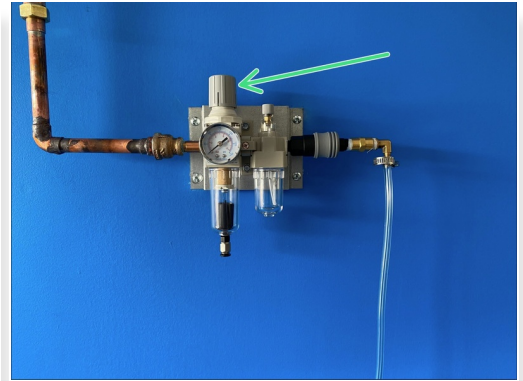


- If everything is setup properly and all the previous steps have been followed, make sure your job is selected in blue on the control panel. If it is not, just select it with your finger. Then you can now go ahead and press the Start/Pause button to run your job.

⚠ DO NOT leave the Epilog unattended. Especially when cutting. This is a fire risk.

- ⓘ It is also recommended, however not required, to not directly stare at the beam spot when the material is being cut. You may see spots/an afterimage for a minute, similar to staring at a flashlight, but your vision is NOT harmed by doing so.

Step 26 — Finishing Up



- The filter box automatically turns on and off when the Epilog runs a job. As a result, sometimes it does not stay on long enough to remove fumes from the Epilog.
 - If you need to change the speed of the filterbox, simply use the up and down arrows to change the % flow rate.
- ❗ If you are cutting something that smells when burned, such as acrylic, if you immediately open up the Epilog, the lab will smell like burnt acrylic.
- Once you are done with your job, make sure to turn off the CA located on the wall behind the Epilog. Do this by turning the knob counterclockwise.
- Make sure to remove any excess stock material if you were cutting a job, and throw away any scrap material that is not useable.

This concludes the complete in-depth usage of the Epilog Fusion Pro 36. For additional information on how to use the Epilog Fusion Pro 36 and its features, please consult the [user manual](#).