

Epilog laser cutter 75 W /120 Watt

Suitable materials for laser cutting:

- Wood: solid wood, plywood, medium-density fibreboard (MDF), high-density fibreboard (HDF), ...
- Acryl
- Card board, paper
- Textile, leather...

Preparing the file:

- For the cutting, you need a vector file in a format that can be opened with Adobe Illustrator (dxf, dwg, pdf, eps, ai etc.). .DXF is preferred.
- For engraving, grayscale images are preferred.
- Lines what you want to cut must be 0.01 mm thick. Other lines and areas are understood as areas to be engraved. Line weight can be adjusted in Adobe Illustrator.

Operating the machine:

- Close the LID before operating machine all the time!
- DO not open LID when machine is operating!
- DO not leave laser cutting without supervision!
- Report strange and unusual behavior to the staff members!

Step-by-step instructions:

1. Focusing the laser	2
2. Set the origin	3
3. How to open file.....	5
4. Editing artboard.....	6
5. Preparing printing	7
6. Printing.....	9
7. Finishing and cleaning up.....	10
8. Never cut these materials:.....	11

1. Focusing the laser

Before cutting, the laser must be focused.

Focusing happens using the cutter's control panel (Fig. 1). Use the up and down arrows to select focus from the list.



Fig 1: Control panel in focus mode

After that, place the focusing tool (metallic triangle found from the cup at the left corner of the cutter) to its place according Fig. 2 and adjust the height of the platform so that the focus is right using the joystick. Focus point of the laser is in the tip of the triangle. Focus is adjusted right when the focus point is in level with the surface of the material.



Fig 2: Focusing triangle at right height for 4 mm plywood

After focusing, take the tringle away and put it back to its place.

2. Set the origin

Set the origin or the reference point.

This is the point on the material that corresponds to the upper left corner of the document containing the artwork to be cut or engraved. Procedure for setting the origin:

Place the material in the upper left corner of the table.

Select JOG on the laser machine's control panel using the **arrow keys**.



Fig 3: Control panel in JOG mode.

Use the joystick to move the lens carriage's red dot to the desired position.

When the origin is chosen, push the joystick down to **set the origin (it will show on the control panel's screen +0.02 +0.02)**.

3. How to open file

Go to File → Open to select your file presented in Fig 4.

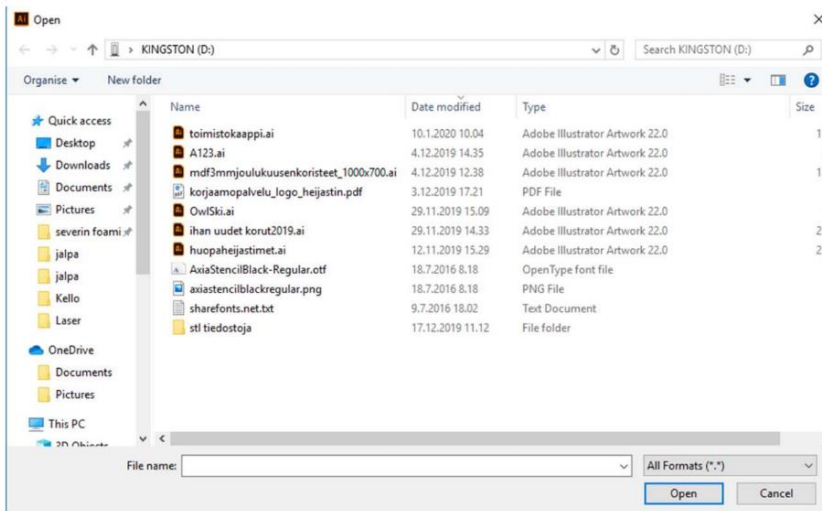


Fig 4: Open file.

File is opened in the main view of the Adobe Illustrator presented in Fig 5. You can adjust line thickness and do nesting for your objects before printing in this view.

Artboard represent the material of your choice. Adjust it to correct size.

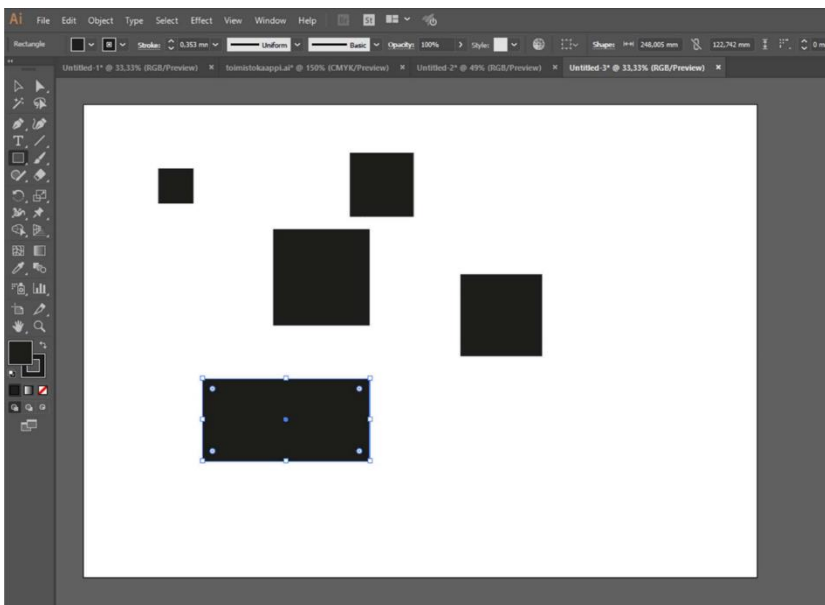


Fig 5: Main view of the Adobe Illustrator.

4. Editing artboard

Measure the size of your material if not known beforehand (you can find measuring tape from the metal cabinet next to the laser cutters). Open your file in Adobe Illustrator using File → Place. This maintains your document settings and panels (if you have a non-illustrator file and you open it from File → Open, it removes your document settings). Adjust your artboards size to match your material size. To do this select “document setup” from the upper panel shown in Fig 6.



Fig 6: Top panel when program is started.

Then select “edit artboards” from the window presented in Fig 7.

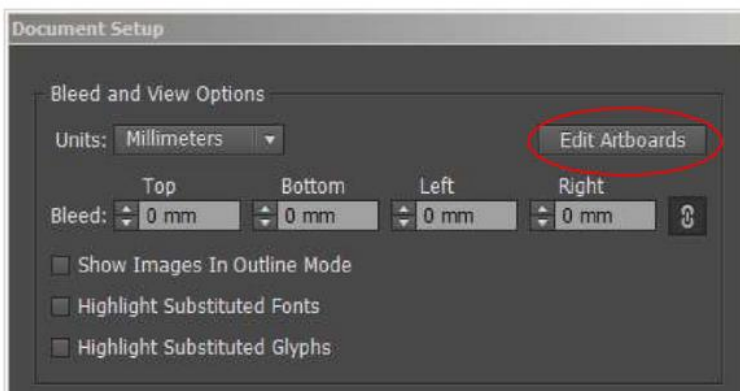


Fig 7: Document setup.

Edit artboard's size by adjusting W and H values presented in Fig 8.



Fig 8: Artboard setup.

Adjust lines that you want to cut to 0,01 mm thick and use black for line color (Fig 9.).



Fig 9: Adjusting the line thickness.

5. Preparing printing

Go to File → Print. (Ctrl+P) You should see window presented in Fig 10.

For the print preset “DEFAULT”

For the printer select “Epilog Engraver WinX64 Fusion” The print preview is WYSIWIG (What You See Is What You Get)

After that, select “Setup...” and then “Continue”.

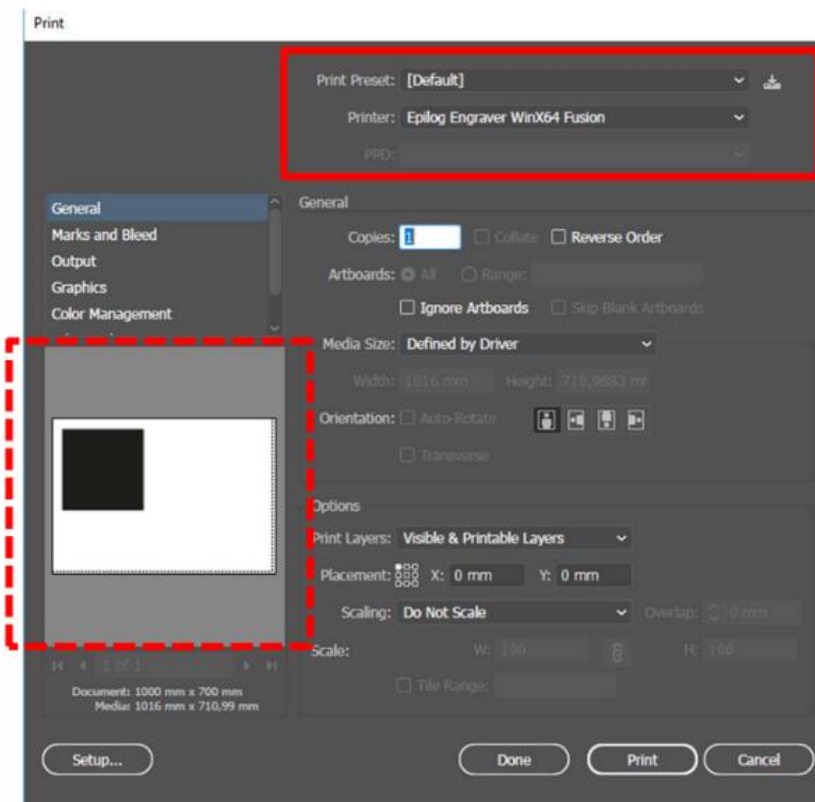


Fig 10: Illustrators print window.

You should see window presented in Fig 11. Select “Epilog Engraver WinX64 Fusion” and then “Preferences

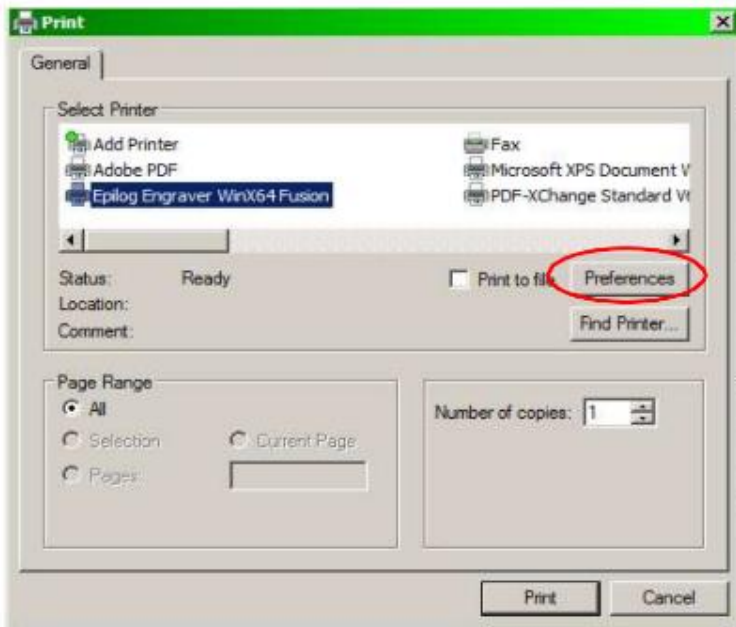


Fig 11: Print setup

Printing preferences window opens up (Fig 12). All the cutting and rasterizing settings are set in this window. Preferences that must be adjusted are the following:

- Job type
 - Raster
 - engraving pictures (line weight anything but 0.01)
 - Vector
 - cutting or drawing (line weight of 0.01)
 - Combined
 - Lasers first the rasterized areas, then vector areas
- Piece size
 - Size of the machine bed 1016x711mm (**DO NOT EDIT**)
- Raster Settings

- speed, power, frequency and image dithering can be looked from examples
- Vector Settings
 - speed, power and frequency can be looked from example materials
- Engrave direction
 - When rasterizing, choose bottom-up

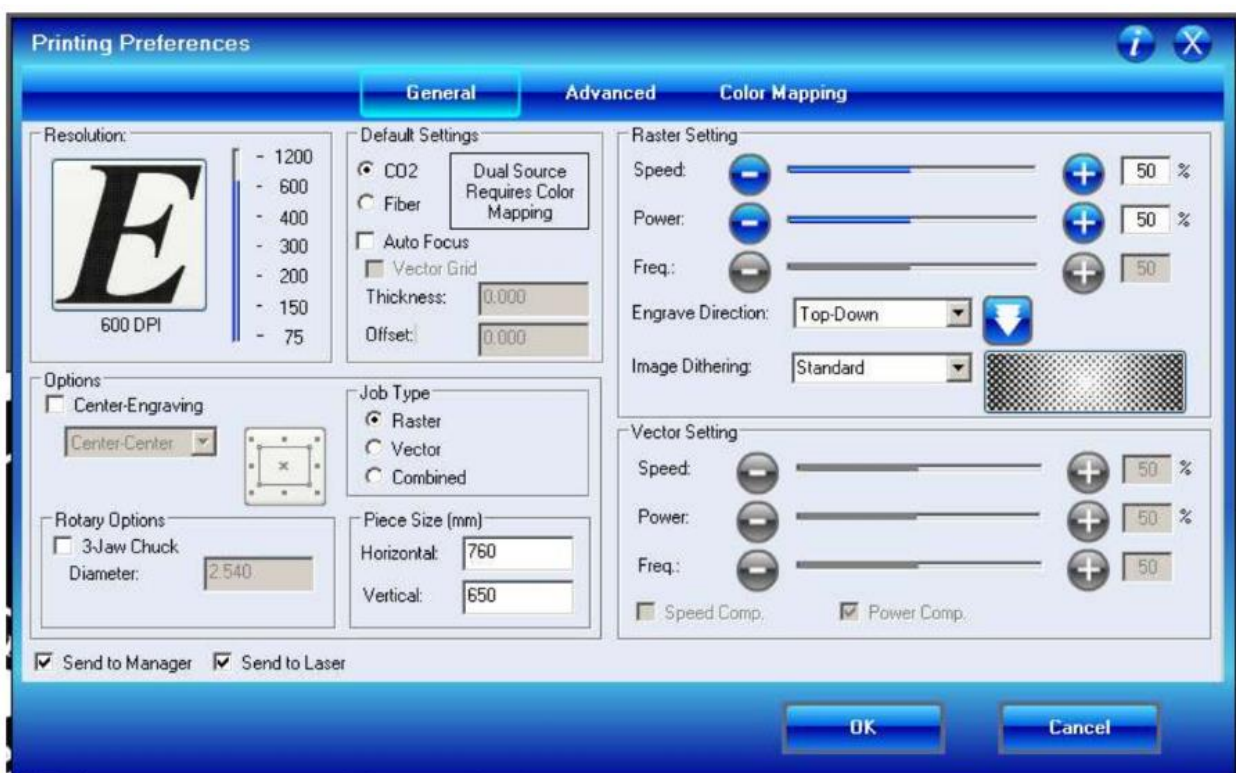


Fig 12: Printing preferences window.

6. Printing

When settings are correct press “OK” and then “Print”. After this, you should be back at the window in the Fig 6. Check that the Print Preview looks right. When everything is ready press “Print”.

File is now being sent to the cutter.

Check that your material is in the left-top corner of the printer. If the material is bent, it is possible to use weights. If using weights, make sure that the weights are outside the printing

area and the laser will not hit the weights at any point of the cutting. This is also the last chance to focus the cutter.

When everything is ready, select Job from the control panel (Fig 13) with arrows. Make sure that your file has completely transferred (the data light stops flashing). You can choose files from the list using the joystick; the latest file has the largest number. When you have the correct file in the screen press the green “GO” - button. Cutting will start.

Remember to stay near the cutter at all times so if something goes wrong you can stop cutting.



Fig 13: Choose Job from control panel and make sure that the Data light has stopped flashing.

If something goes wrong, the laser can be stopped by pressing the “Stop”-button. Printing can be continued by pressing the “GO”- button again.

7. Finishing and cleaning up

- Remove any remaining stock material from laser’s working surface
- Take all the materials you have used back to the metal cabinet
- Do not turn off the power from the lase

8. Never cut these materials:

Not allowed material	DANGER!	Cause/Consequence
PVC (Poly Vinyl Chloride)/vinyl/pleather/artificial leather	Emits chlorine gas when cut!	Do not ever cut this material, as it will ruin the optics, cause the metal of the machine to corrode, and ruin the motion control system.
Thick (>1mm) Polycarbonate/Lexan	Cuts very poorly, discolors, catches fire	Polycarbonate is often found as flat, sheet material. The window of the laser cutter is made of Polycarbonate because polycarbonate strongly absorbs infrared radiation! This is the frequency of light the laser cutter uses to cut materials, so it is very ineffective at cutting polycarbonate. Polycarbonate is a poor choice for laser cutting.
ABS	Melts	ABS does not cut well in a laser cutter. It tends to melt rather than vaporize and has a higher chance of catching on fire and leaving behind melted gooey deposits on the vector cutting grid. It also does not engrave well (again, tends to melt).
HDPE/milk bottle plastic	Catches fire and melts	It melts. It gets gooey. Don't use it.
PolyStyrene Foam	Catches fire	It catches fire, it melts, and only thin pieces cut. This is the #1 material that causes laser fires!!!
PolyPropylene Foam	Catches fire	Like PolyStyrene, it melts, catches fire, and the melted drops continue to burn and turn into rock-hard drips and pebbles.
Fiberglass	Emits fumes	It's a mix of two materials that cant' be cut. Glass (etch, no cut) and epoxy resin (fumes)
Coated Carbon Fiber	Emits noxious fumes	A mix of two materials. Thin carbon fiber mat can be cut, with some fraying - but not when coated.