![FabLab Tampere logo]

Trotec laser cutter

FabLab Tampere Trotec laser cutter quick guide

## Suitable materials for laser cutting

- Wood: solid wood, plywood, medium-density fibreboard (MDF), high-density fibreboard (HDF),…

- Acryl

- Card board, paper

- Textile, leather…

Prerequisites for using the laser cutter

- Suitable material to cut or engrave chosen form the stock.

Preparing the file

- For the cutting you need vector file in a format that can be opened with Adobe Illustrator (dxf, dwg, svg, pdf, eps, ai etc.). For engraving grayscale images are preferred. Lines what you want to cut must be 0.001 mm thick. Other lines and areas are understood as areas to be engraved. Line weight is adjusted in Adobe Illustrator.

MAIN POWER SWITCH

KEYPAD

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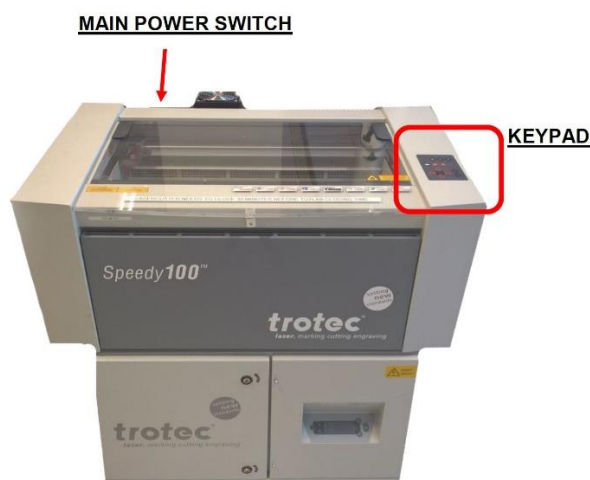
Step-by-step instructions

1. **Switch on the laser cutter and the computer.**

2. **Focusing the laser.**

3. **Before cutting the laser must be focused.** Place the material you are using on laser's work surface. You can find tape, weights etc. from the metal cabinet next to the laser happens using the cutter's keypad. (Fig. 1).
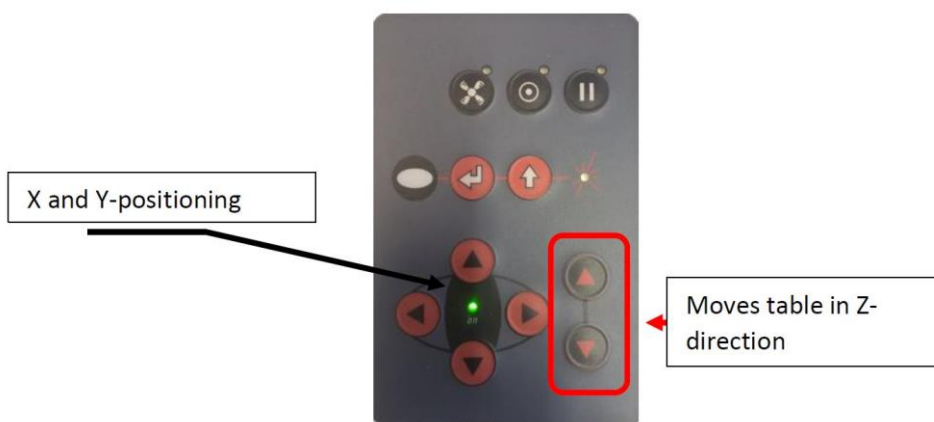

Fig 1: Keypad, buttons for adjusting table height marked in the picture with red.

After that place the focusing tool (found from inside the cutter) to its place according Fig. 2 and adjust the height of the platform so that that the focus is right using the keypad.

Focus point of the laser is in the bottom of the tringle. Focus is adjusted right when the focus point is in the middle of the material.

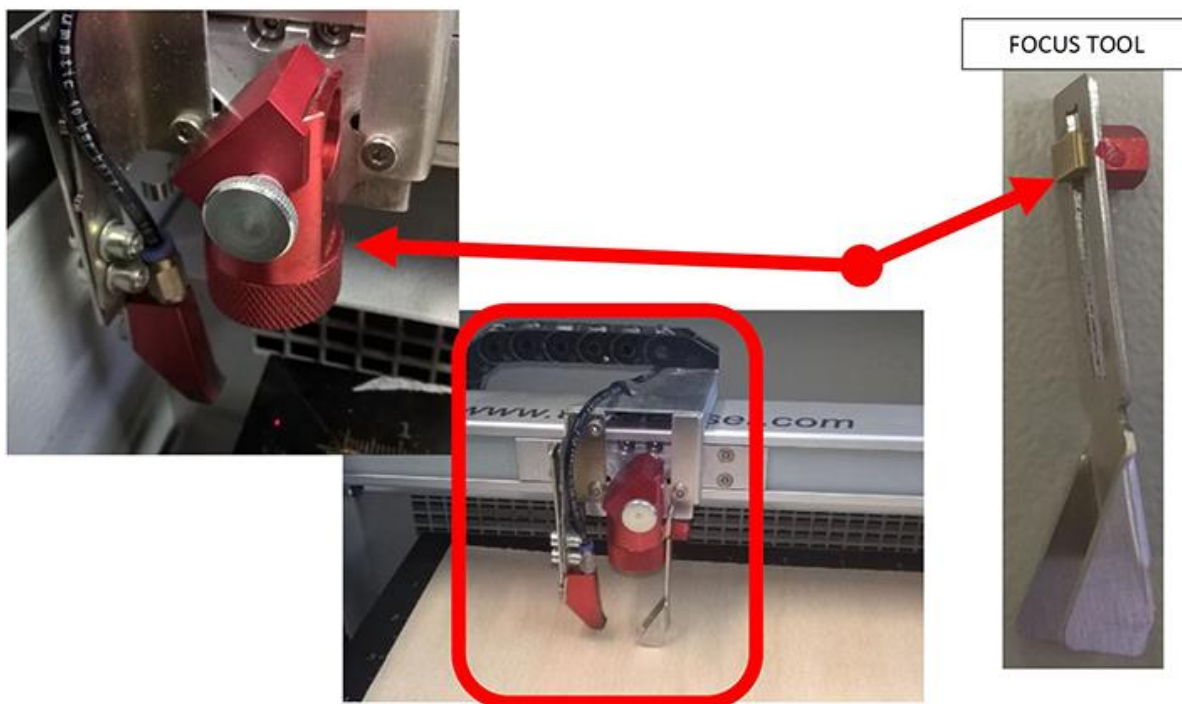After focusing take the tool away and put it back to its place.

FOCUS TOOL

Fig 2: Focusing laser.

Editing the art board

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. 3.

Fig 3: Top panel when program is started.

Then select "edit artboards" from the window presented in Fig. 4.
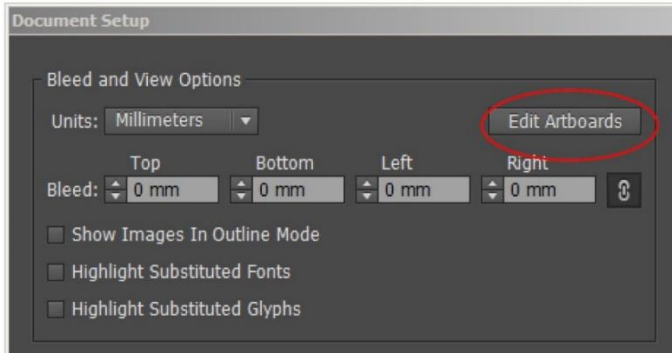

Fig 4: Document setup.

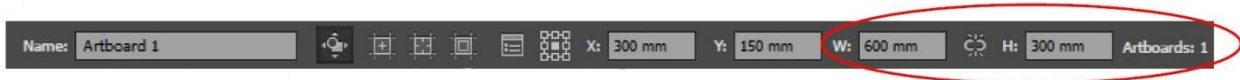Edit artboard's size by adjusting W and H values presented in Fig. 5.

Fig 5: Artboard setup (max work piece size 600x300).

Adjust lines that you want to cut to 0,001 mm thick (line colour does matter, e.g. RGB value r=255, g=0, b=0 for cutting) (Fig. 6.)

Fig 6: Adjusting the line thickness.

4. Preparing printing

Select print. You should see window presented in Fig. 7. For the printer select "Trotec Engraver". After that select "Setup…" and then "Continue".
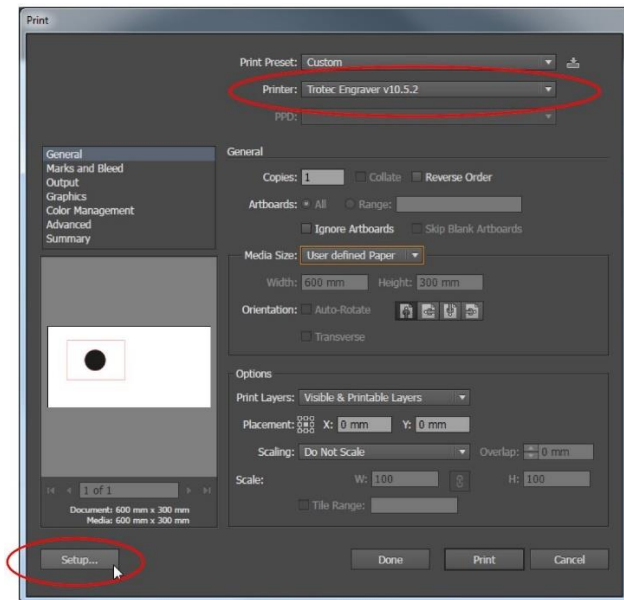

Fig 7: Illustrators print window.

You should see window presented in Fig. 8. Select "Trotec Engraver v10.5.2" and then "Preferences".
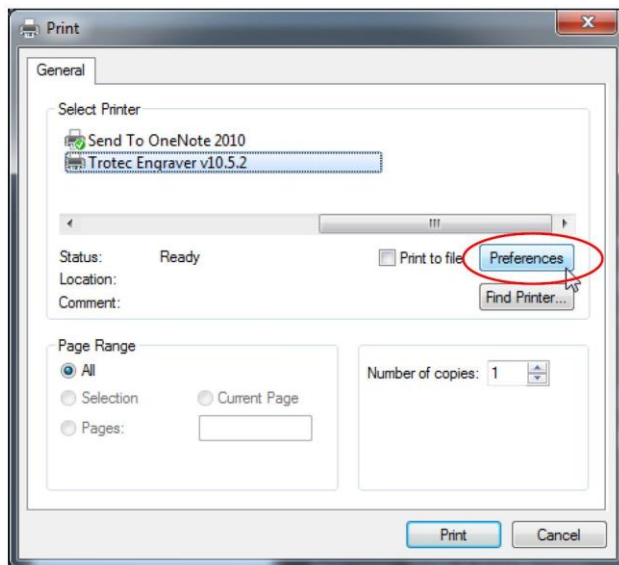

Fig 8: Print setup

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Printing preferences window opens up (Fig 9). All the cutting and rasterizing settings are set in this window. Preferences that must be adjusted are the following:

- Size settings

    - Size of your art board in Adobe Illustrator.

- Material settings

    - Select correct material.

        o Black = Engraving parameters

        o Red = Cutting parameters

    Settings can be adjusted from **material database**

- Process Options

    - Various options for engraving images.

    - Use default settings or feel free to try different settings.

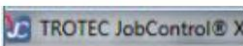Accept settings and continue by clicking Job Control icon.
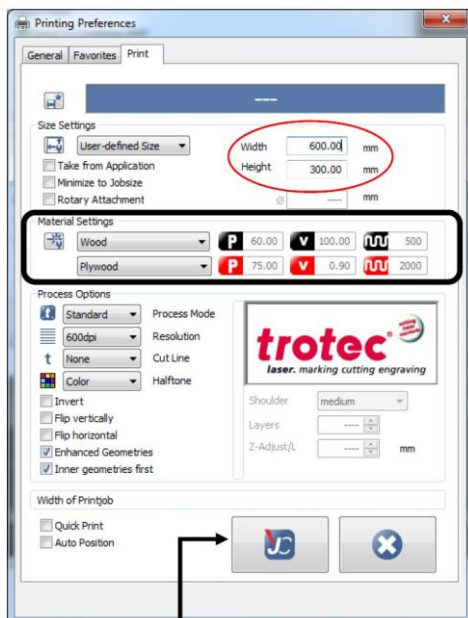
Accept settings and continue by clicking Job Control icon.

Fig 9: Printing preferences window

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5. Printing

After this you should be back at the window in the Fig. 7.

Check that the preview image looks right. If not, try to press, "Done" and then choose again "Print" from the "File"- menu.

When everything is ready press "Print". File is now sent to the [TROTEC JobControl® X] program. (Fig. 10).
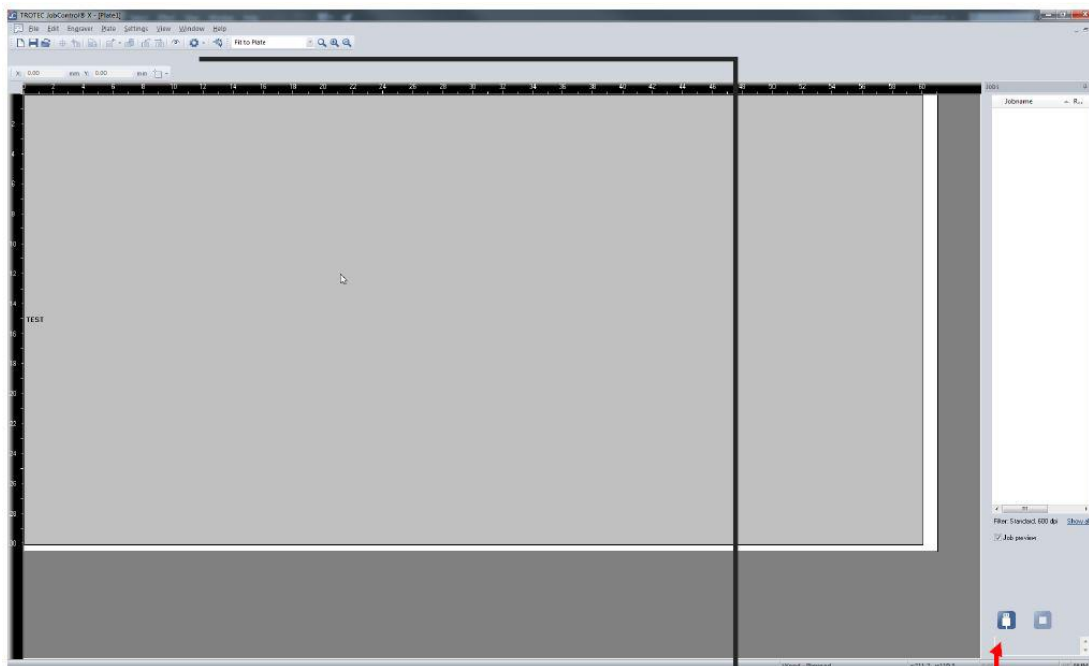
WYSIWYG

Material settings   (Allows you to modify cutting & engraving settings of current work)

Useful shortcuts

- Ctrl+I = WYSIWYG view
- Crtl+M = Material settings

[icon] =Connect to the printer (1st time only, after connection is established cutter is ready)

[icon] =Start work cycle

Fig 10: Trotec Job Control

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, makes 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.

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

If something goes wrong, the laser can be stopped by opening the lid.

6. 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 laser

- In the evening if you are the last user of the day, allow ample time for the laser to cool down after working, before turning it off

  - 15 minutes for short, under 30 min jobs

  - 45 minutes when the laser has been on all day