

Handy guide – MAKERS LAB @ MAKERS VILLAGE: IRENE SOUTH AFRICA

Welcome to Makers Lab make your time more efficient in the Makers Lab , we created this Handy guide, which will help you with every job you plan to do on the machines.

For more specific questions, please visit us first on an open day and show us your plans.
Documentation / knowledge sharing: The Makers Lab model is based on international knowledge sharing, therefore you need to document your work and create a project and so called 'Makers Moments' on our website.

Please register, create a profile and login to add your work.

Software:

You can make 2D vector drawings in Adobe Illustrator, Inkscape and many other (vector drawing) applications. We currently use Illustrator CS5 and Inkscape. In the 3D domain, any 3D modeling program that can output a STL file is fine. In the Lab we use Rhino 3D.

Overall the .dxf & .stl file format seem to be the most compatible with our equipment, but we can help you out with any file conversion if needed.

Technical requirements:

Technical requirements for all vector drawings Make sure you have closed paths, and no double lines. Note: double lines = double machine time! Units: Machines are standard set to metric (mm), but can be used in inch mode as well.

LASER CUTTING

Prepare for laser cutting Have your cleaned vector drawing ready in the correct size as Illustrator file, .svg or .dxf. Make your 'cutting' lines 100% rgb red and the stroke 0.003 pt.

Engraving is based on the black & white spectrum. Typically you can engrave .jpg images and .bmp. Both color or b/w images work.

Mail your file to yourself, grab it from your webmail and download it directly on our laser computer in the lab. Otherwise, you can bring your file on a USB storage device.

2D MILLING

Prepare for 2D milling on the Shopbot Have your cleaned vector drawing ready in the correct size, export it as .dxf file, with the 'AutoCAD version' set to 'R13 | LT95'. Bring your file on a USB storage device!

3D MILLING

Prepare for 3D milling on the Shopbot Have your cleaned 3D model ready in the correct size, export as .stl file, with option 'binary'. Bring your file on a USB storage device! As 3D milling is a bit more complex and there are a number of ways how you can mill something, you can always contact us and ask for milling strategy advice.

MILLING

Prepare for circuit board milling You need a .bmp file with 500dpi resolution in the correct size (1:1). Lines should be white, the board black. Mail your file to yourself, and download it directly on our Modela computer in the lab. Otherwise, you can bring your file on a USB storage device.

PRESISSION MILLING

Prepare for precision 3D milling Have your cleaned 3D model ready in the correct size, export as .stl file, with option 'binary'. Mail your file to yourself, grab it from your webmail and download it directly on our Modela computer in the lab. Otherwise, you can bring your file on a USB storage device. 3D milling on this machine can take a long time! Keep in mind that for a precision job like a mold of 100 mm x 50 mm x 30 mm size, it can take up to 12 hours, but we can leave this machine on overnight.

3D SCANNING

Prepare for 3D scanning Note: currently maximum size is 210 x 160 x 40 mm. Bring a USB storage device with you to save the file. It can be as large as 200 MB!

VINYL CUTTER

Prepare for vinyl cutter Have your cleaned vector drawing ready in the correct size. Always convert text to outlines! Make strokes white, and fills black, otherwise the machine cuts twice. Save your file as Illustrator file, .svg or .dxf. Mail your file to yourself, grab it from your webmail and download it directly on our vinyl computer in the lab. Otherwise, you can bring your file on a USB storage device.

EMBROIDERY MACHINE

Prepare for embroidery machine Our embroidery machine is an exception in the way that you cannot prepare a file entirely beforehand. You'll have to use our embroidery program in order to program the machine. The program accepts .jpg and .bmp files, currently we cannot import vector drawings. Mail your file to yourself, grab it from your webmail and download it directly on our vinyl computer in the lab. Otherwise, you can bring your file on a USB storage device.

3D PRINTING

The Ultimaker is a low cost DIY 3D printer using FFF technology (Fused Filament Fabrication) with thermoplastic extrusion. It's a great tool to make fast 3D prototypes in various colors. For this machine you need to prepare .stl files, that you can create with the application ReplicatorG (available for multiple platforms). The maximum part size is 210 x 210 x 220mm.