

4 Plotting: Axidraw Edition

In this assignment, you will be introduced to the mechanics of CNC Plotting. Up until now, you have completed all the necessary digital steps required to plot your line work. Now we will apply that work to setting up and operating an Axidraw, “a simple, modern, precise, and versatile pen plotter, capable of writing or drawing on almost any flat surface.”

What to bring with you

- Flash drive containing your .SVG from M1A3
- Pen(s), markers & paper (printer, watercolor, etc.)

Final Deliverable:

One .JPG or .PNG of finished plotted drawing

Instructions

1. Sign up

To complete this module you must sign up for a time to operate Axidraw. Waiting time may vary depending on Fab Lab loads. Sign up on our website under the Consultation tab. Look for M1: Pen Plotter in the drop down menu. One of our staff will get back to you after sign up to schedule a time.

2. Plotting

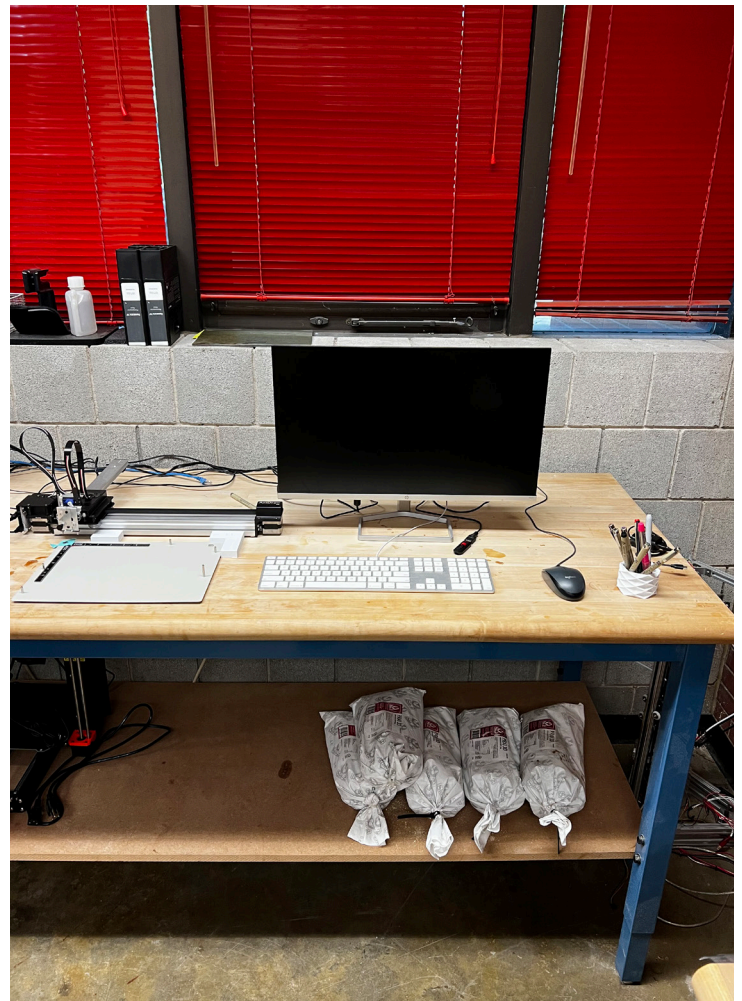
During your assigned time, you will follow the step-by-step instructions required to run the Axidraw. See Attachments on our website: Pen Plotter > A4 attachments. A team member will walk you through how to load pens. After that we will use your .SVG to upload and begin plotting your drawing. If we find errors in your .SVG we will determine the severity of the error and either recommend you resolve these errors and sign up for another time slot or resolve the error within the .SVG (this will be left up to the makercorps team member).

3. Observations

After the plot has started, please remain with the machine until the plot has completed. makercorps team members are not responsible for failed or unattended drawings being discarded.

4. After the plot is complete you may retrieve your drawing.

5. As a final step, scan/capture an image of it, then upload to finish Module 1.



4 Plotting: AxiDraw Station

Username: fablab

Password: axidraw

If importing your linework

Plug in USB Flash Drive

Find .SVG File (in File Explorer) → Right Click → Open With → Inkscape

Adjust File Setup

File → Document Properties

○ Orientation → Landscape

○ Paper Size → 8.5" x 11"

○ Units → Inches

* Ensure your linework is on the right scale before proceeding.

Before Plotting

Extensions → AxiDraw Control... → Setup

○ Toggle Pen between UP, DOWN

- Press Apply, ensure the holder is in the DOWN position before loading a pen

- Load the pen so that the tip is resting on the metal plate (on a scrap piece of paper), then tighten the screw.

- Pen height: Down; (%) Subtract 4 from whatever number is in this bar. (Determines pen pressure on paper)

- Press apply to raise the pen back into the UP position

* Ignore any error menus that may pop up. Your plot will not be affected.

Load Material

Place your material onto the metal bed, and ensure it is aligned in the top left corner. Place magnets or tape around the exterior boundary of the material if it is thin enough to hold it to the bed.

Begin Plotting

Extensions → Axidraw Control... → Plot → Apply

Multi-tool Plotting

The program will plot any object (lines/curve) that is unhidden when you follow the Begin Plotting step above. If you are exporting an SVG from Illustrator, each layer you have will become one "object" in Inkscape. So to save time, you may want to separate all of the lines/curves you wish to be a different color/thickness into different layers before you export from Illustrator.

To open the Layer/ Object Panel

Object → Layers and Objects

1. Determine which line/curves you wish to be plotted with a different pen

→ use the Eyeball button to hide these line/curves for the time being

2. Proceed to plot the line/curves you left unhidden

Repeat these two steps for all of the different tools you are using. Keep in mind that you will have to follow the Before Plotting step each time you change the pen/marker you are using.

- Be sure you are using the same type of pen/marker or else you will have offset issues due to the thickness of the pen casing as you switch between tools.