

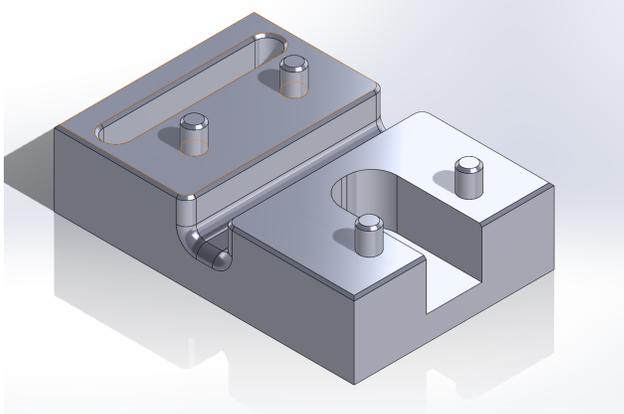
Device Holder

Learn how to use the CNC machine and 3D printers by making a lightweight device holder that can easily hold your phone upright or sideways.

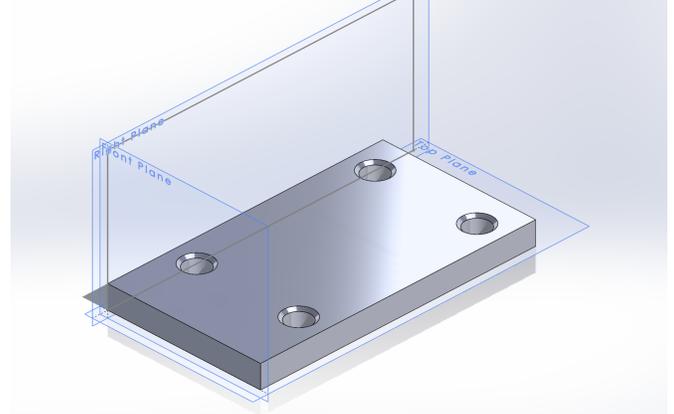
1. Create Your Cad File

Option 1:

You can use the existing file.



Base



Lid

Option 2:

Get some inspiration from the existing file and design your own CAD Model.

2. CNC Mill Process

Base SolidWorks File link:

https://drive.google.com/file/d/1TaIGw7RJCZgGwN_AVzXqGpXufNtgogDg/view?usp=share_link

STL, ready to print or CNC:

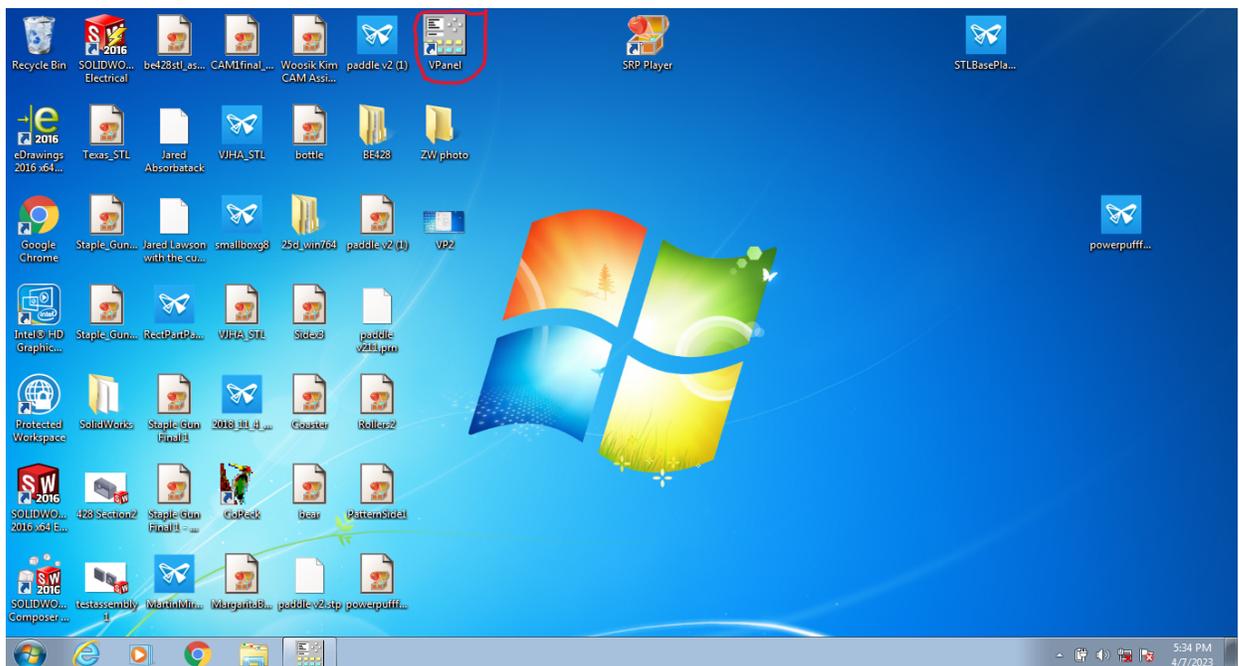
https://drive.google.com/file/d/1IYQtHLX3h3tShqgdUEjndnqQjdZ-qBmB/view?usp=share_link

The base will be made out of wood and we will use the CNC mill in the corner of SILab, near the sink. To use the CNC machine, upload your STL file onto a thumb drive.

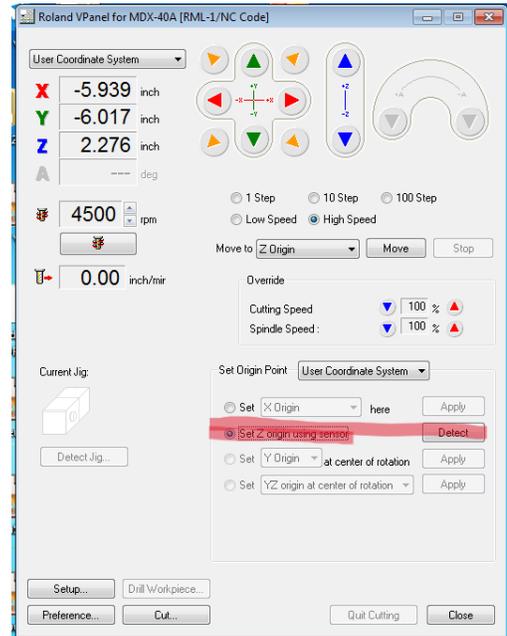
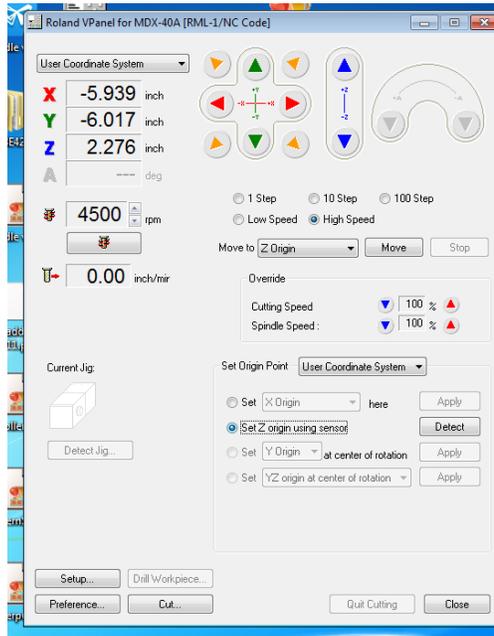
- Choose your Working Material and it must be in a cubic shape (Hard Wood, Chemical Wood, or Foam)



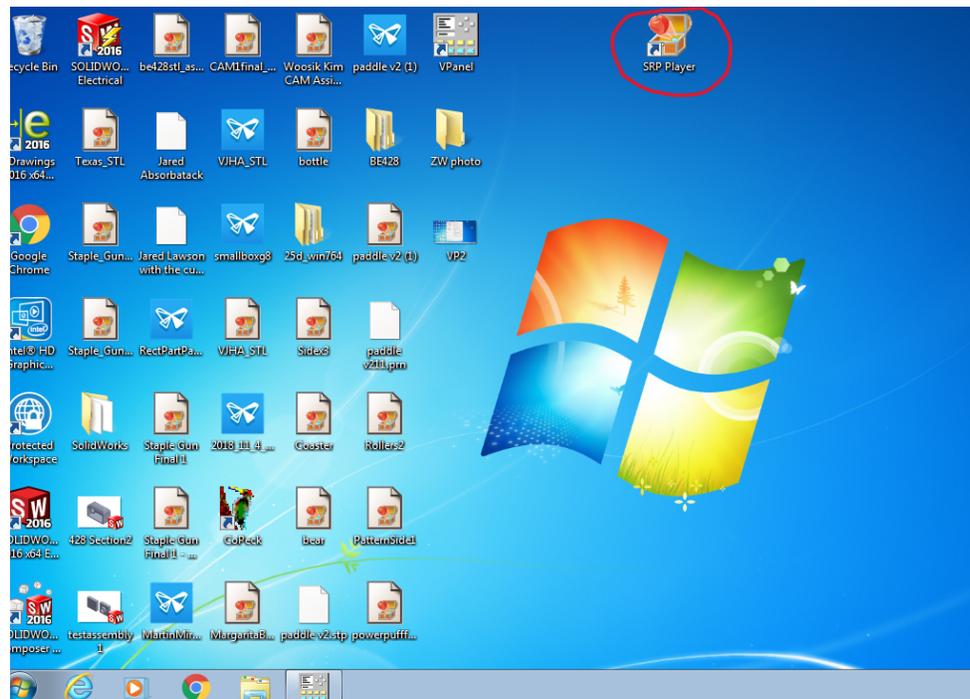
- Measure the dimension of the cubic (XYZ)
- Use pencil and ruler to mark the center the material
- Center and fix the Working Material to the CNC plate
 - Double-sided tape the base of the material and put it in the middle of the plate of CNC
 - Use a hot glue gun along 3 edges to stick the working material to the machine
- Choose drill bit: size is $\frac{1}{4}$ Ball
- Zero center the drill bits with using the app: **VPanel**



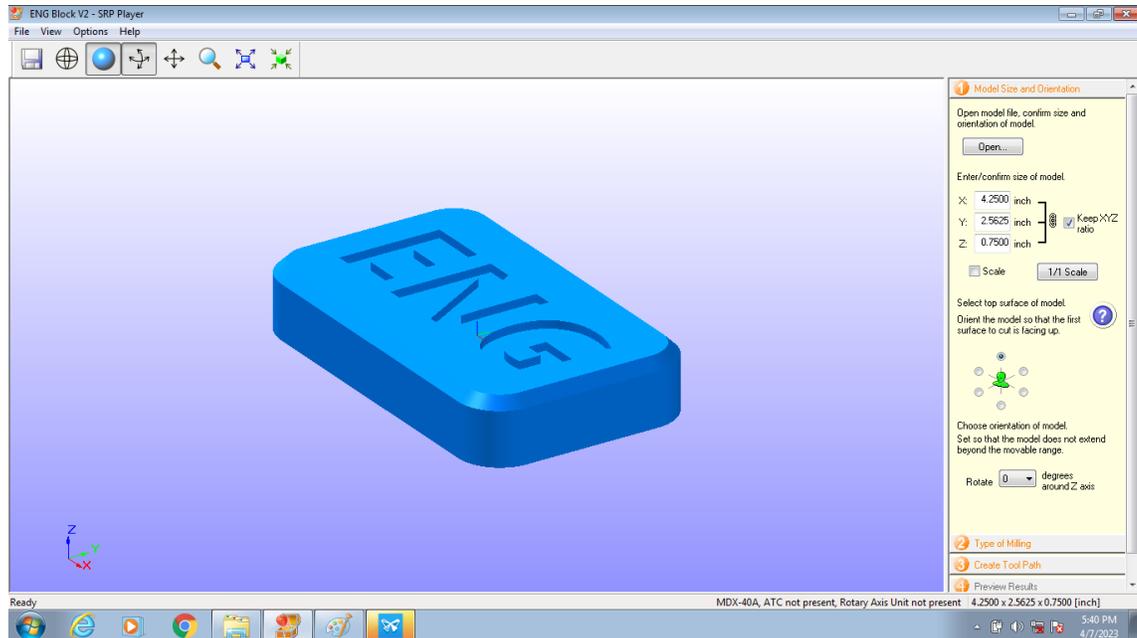
- You can use the sensor for the z axis, ask a SILab Advisor for help with this step if needed.



- Set up your file for milling with the app: **SRP Player**

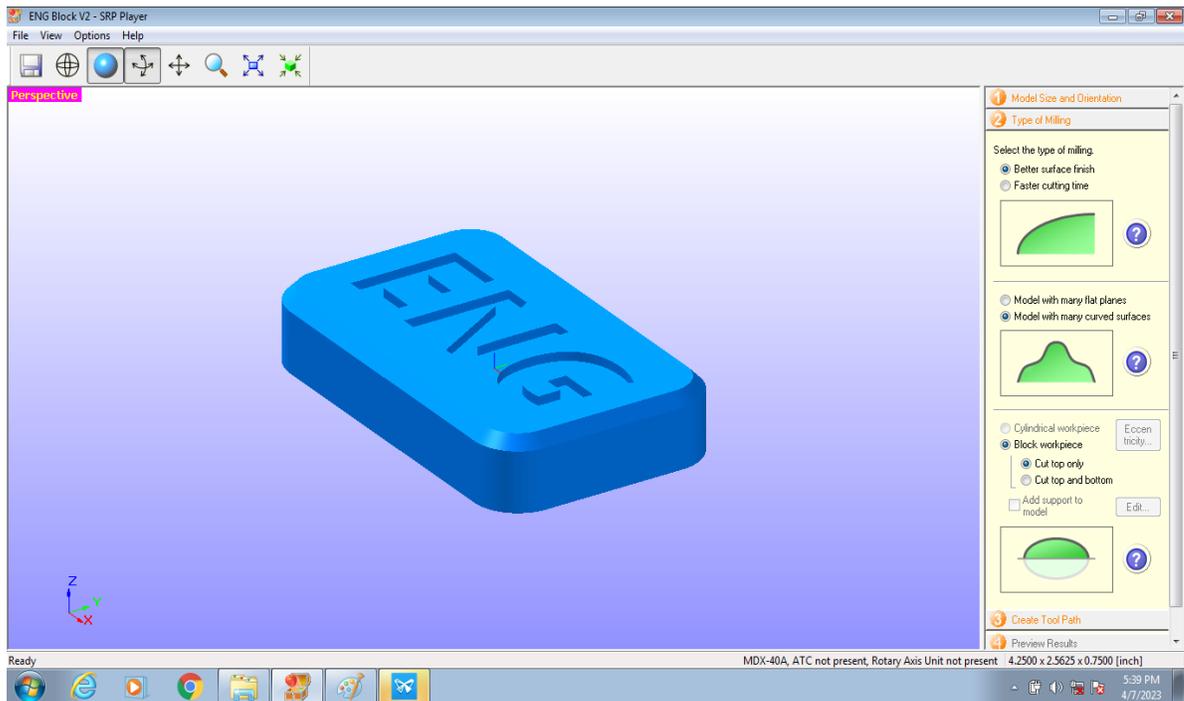


- Open your STL file in the SRP Player
- Select Model Size and Orientation



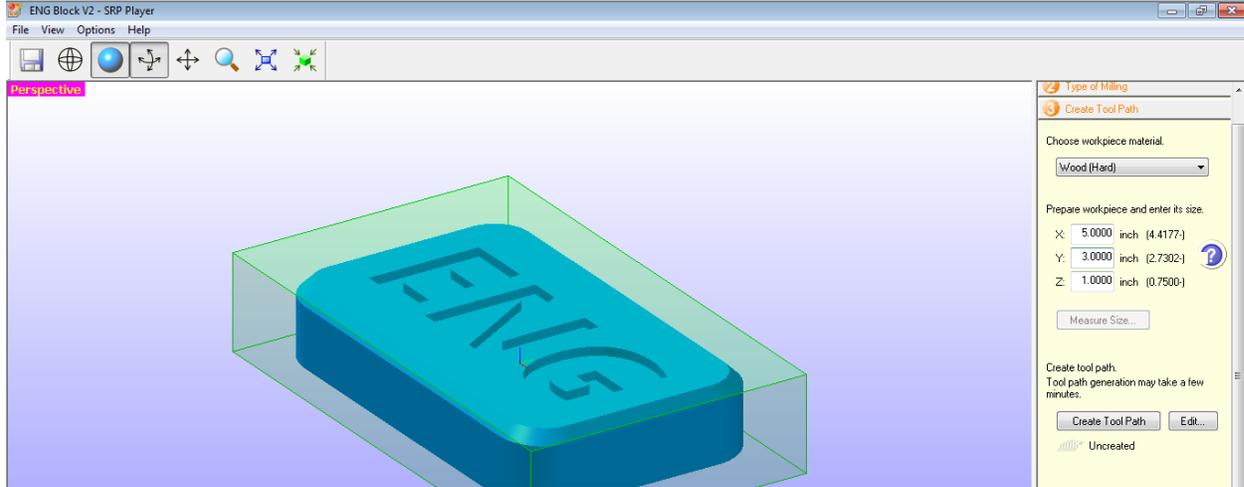
- At this stage, you can choose the depth of cut you want by changing the value of Z
- Choose the right orientation of the object so that the cuts are primarily top down.

○ Type of Milling

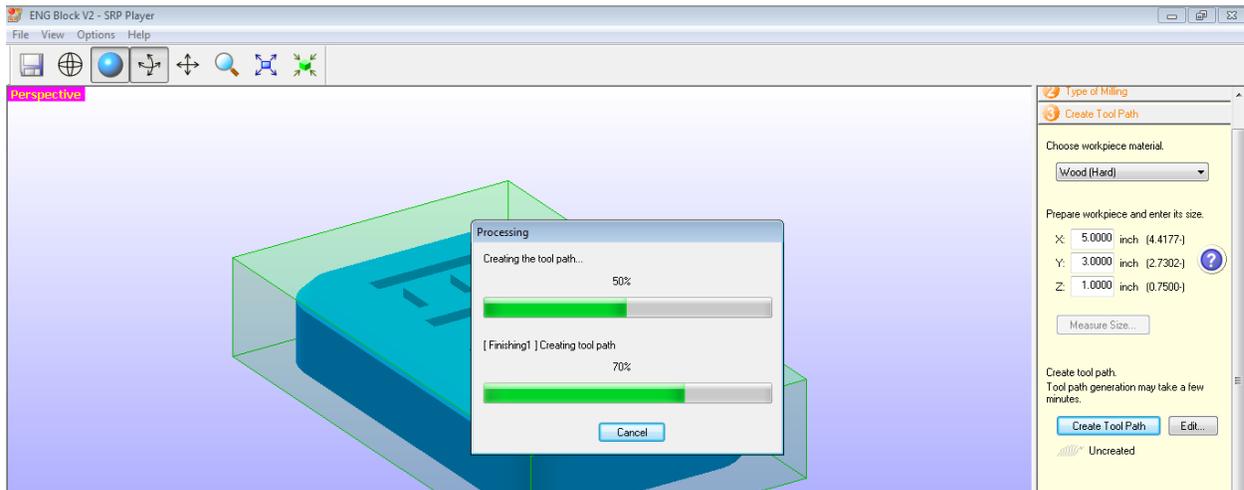


- Suggest to use faster cutting time to save more time
- Select Model with many flat planes/ Model with many curved surfaces. The base model has many curved surfaces.
- Select that it is a block workpiece and Cut top only.

○ Create Tool Path

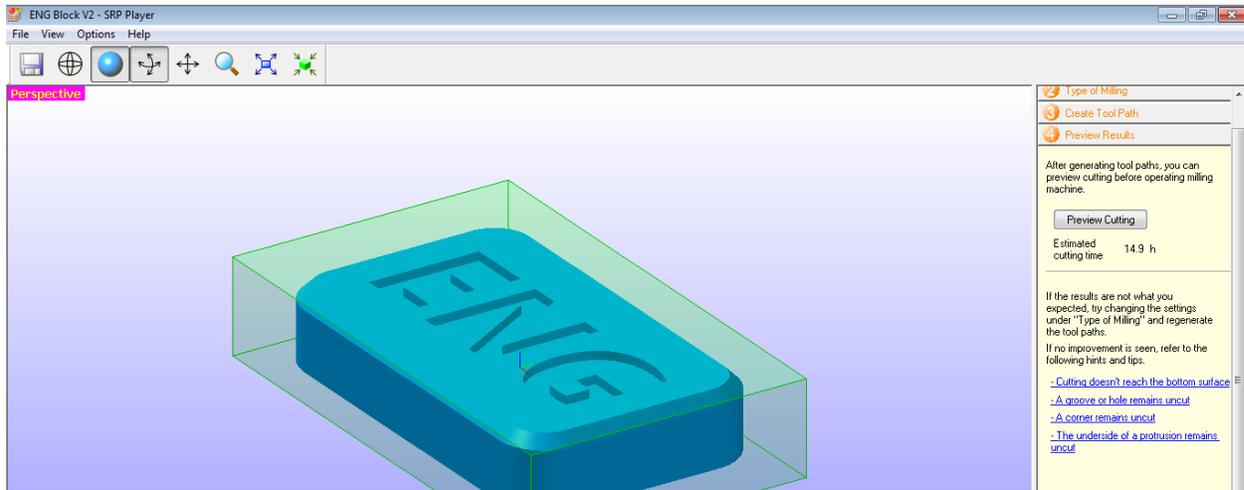


- Make sure your workpiece material selection matches your working material
- Put in the dimension of your cubic working material

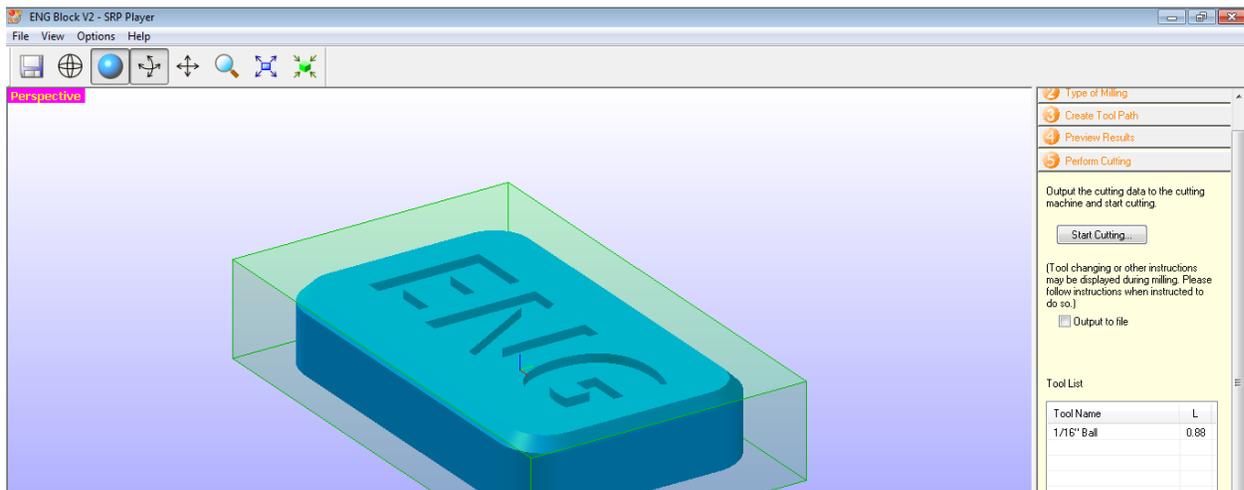


- Preview Results

- Click on the preview cutting, if the preview looks as expected continue on to perform cutting.



- Perform Cutting



3. 3D Print the Cover Lid

We are suggesting you use a 3D printer to print the cover lid, and the same as the designing instruction of the base. You are welcome to use the existing cad file, or you can also make your own based on your own base.

File link:

CAD:https://drive.google.com/file/d/1MYiYF-SQ7iArak3bdolQeCqReBT4zmMy/view?usp=share_link

STL:https://drive.google.com/file/d/1YhUmHNXmCMmmC_N5rPPHAF1GyhepDezt/view?usp=share_link

- When use design your own lid, please do the following considerations
 - [The hole size with tolerance](#)
 - The distance between holes
 - The extrude thickness of the lid, the slot to put the lid vertically in.
- How to 3D print in Silab
 - Save your Cad as STL.file
 - Submit your file to the SILab 3D print form. Link :
<https://docs.google.com/forms/d/e/1FAIpQLScplvn1Vgihzs3JOOgp0Zm45heURotbPB1RVBbP8vA-0QbJYw/viewform>
 - Suggest to use printer Flashforge or Prusa i3
 - Prusa i3 can print 2 colors, please ask an advisor to help you adjust the color

Enjoy your device holder!

