

## Step 1: Wiring the Rotary to the controller.

I will use the rotary I bought, but whichever one you use should have the pinout of the stepper motor. Red wire A+ port, Green wire A- port, Yellow wire B+ port, Blue wire B- port. These are again for the rotary I bought off of Amazon and may be different for different rotaries. Then I found what the controller Y1 axis (I used Y1 axis but you could use Y2 or X it is your choice and it will depend on how you want to setup the rotary) pinout is from the buildbotics user manual (<https://buildbotics.com/manual-v1-0/>). The onefinity is not the same as the buildbotics controller but some stuff is the same and it is still a useful document to look through.



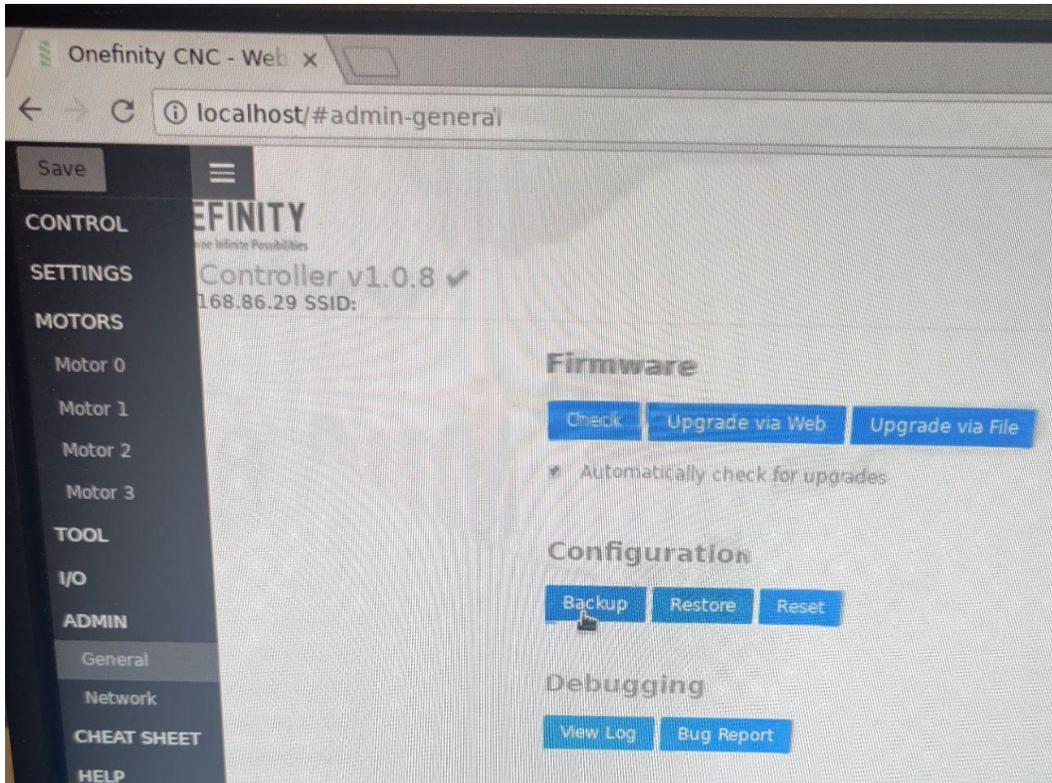
As you can see from the above picture you just need to get a connect to fit the onefinity controller (I bought the extension cable from Onefinity and cut the wire to connect it to my rotary motor so all I would have to do is splice the wires together and plug it into the controller.)

<https://www.onefinitycnc.com/product-page/2-pack-cable-extensions-4-foot-long>

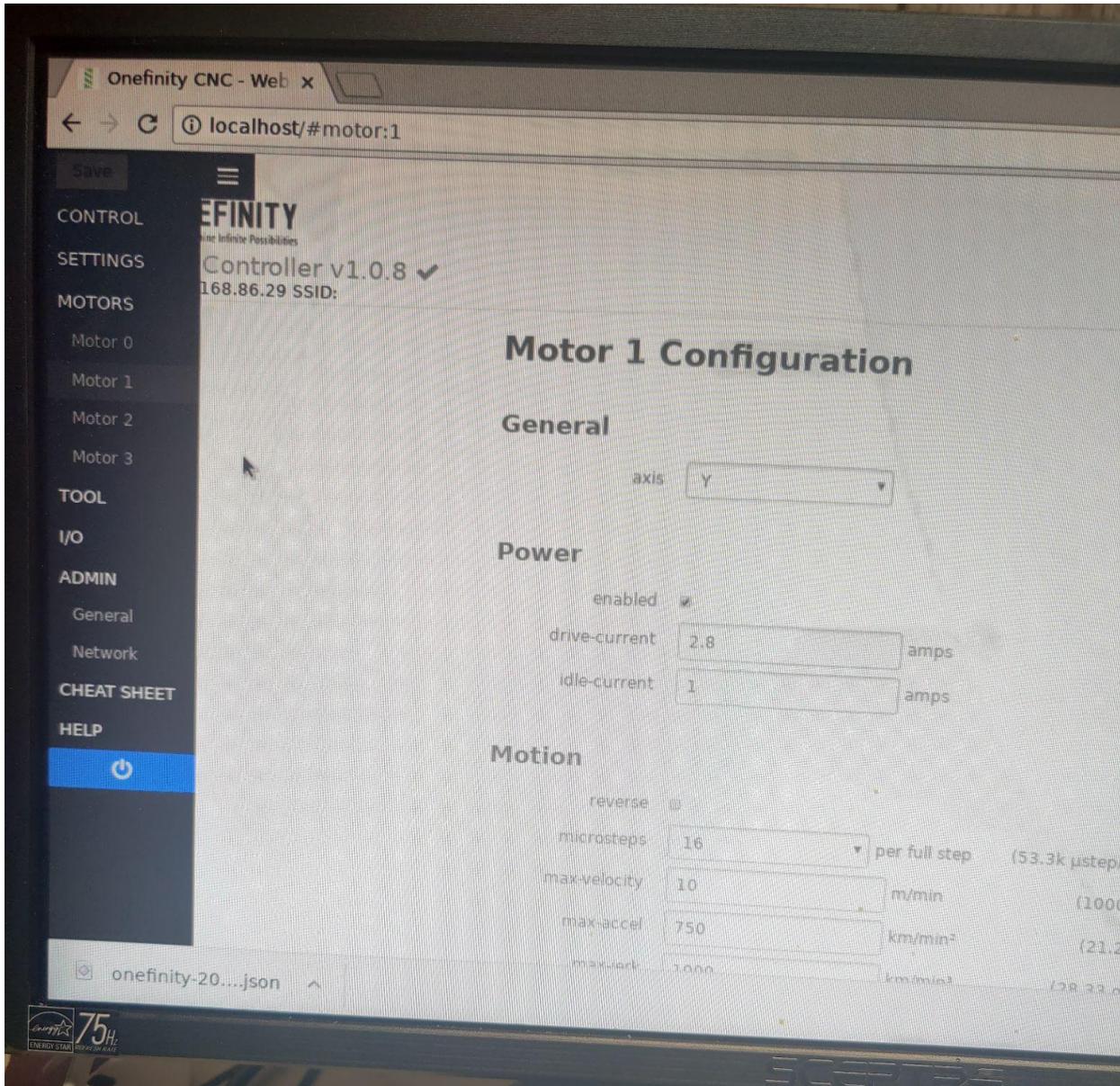
\*Since I will be using Y1 or M1, I will unplug Y2 or M2 from the controller because I will disable it in the controller. You may not have to unplug it since it will be disabled in the controller but I like to unplug it anyway.

## Step 2: Controller settings.

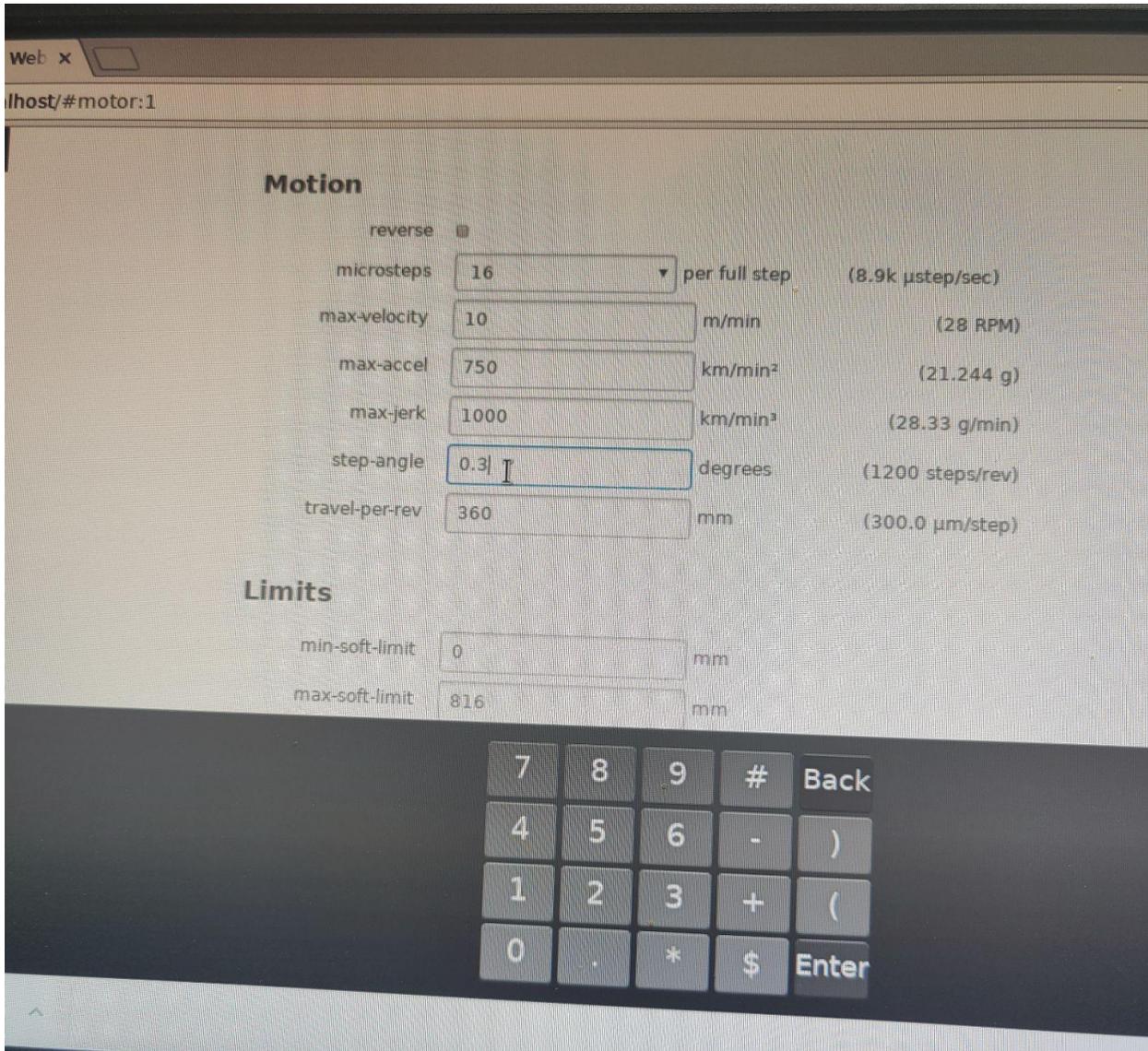
Assuming you are setting up the rotary axis "A" to replace the Y1 axis you will follow these steps. **\*If you can I would strongly suggest you get a keyboard to do some backing up and renaming of the configurations when we change the motor settings.** To start off I would go under ADMIN > General and Click "Backup" this creates a file of your standard configuration before you mess with anything.



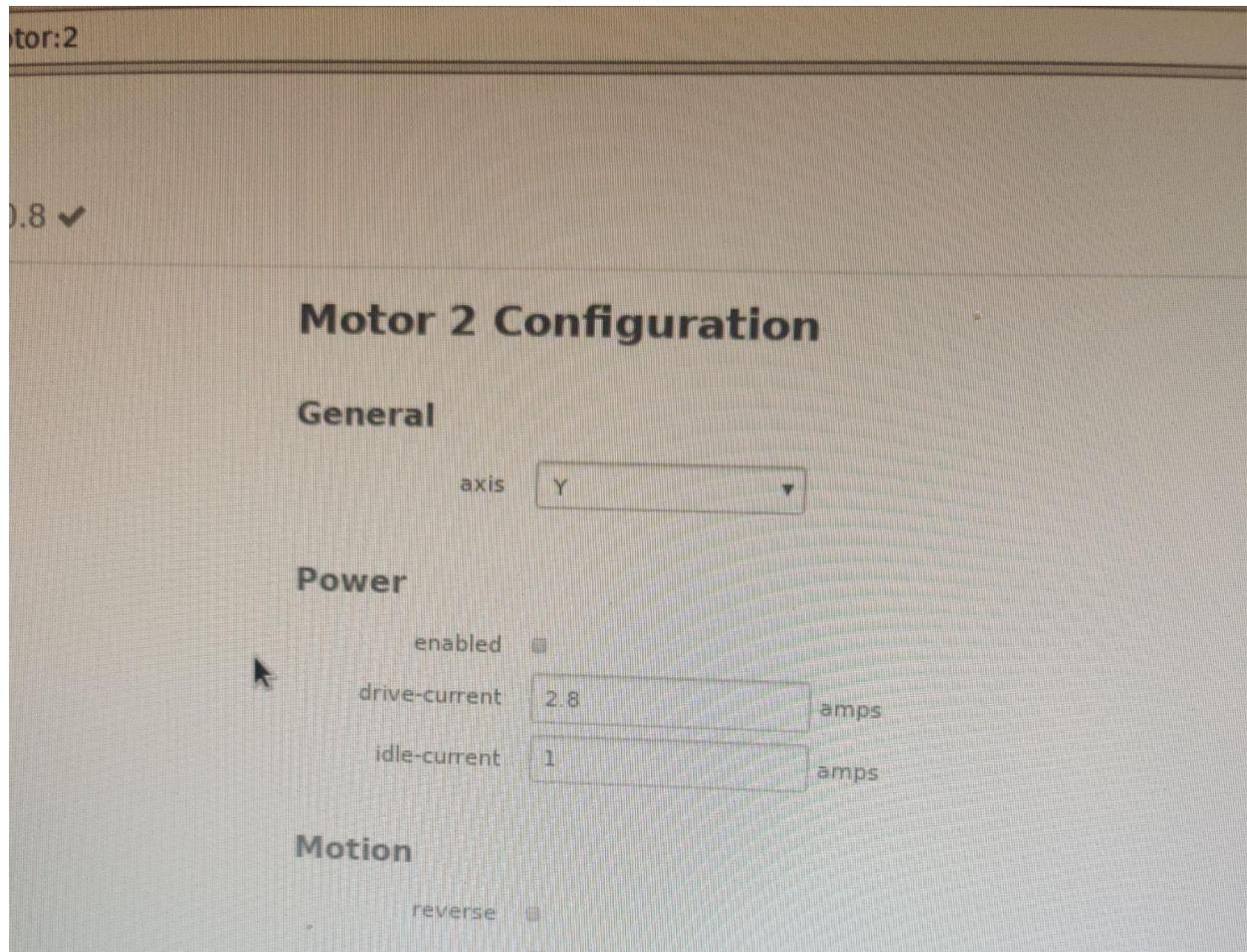
Next go into MOTORS > Motor 1, this is the for Y1 motor.



Change the axis from Y to A. Change your "travel-per-rev" to 360. This will have to be the case for all rotaries for our controller as it is. Change the "step-angle" to whatever is mentioned for your rotary, mine was stated to be 0.3 degrees.



That is all I changed under Motor 1, you may have to play with your max velocity, max accel, and jerk settings to get it to where you like. Next go under Motor 2 Configuration and under Power uncheck "enabled" so that Motor 2 will be disabled.



Now make sure you click save at the top left corner to save all of these changes.

- Save
- CONTROL
- SETTINGS
- MOTORS
  - Motor 0
  - Motor 1
  - Motor 2
  - Motor 3
- TOOL
- I/O
- ADMIN
  - General
  - Network
- CHEAT SHEET
- HELP
- 

**TEFINITY**  
Machine Infinite Possibilities  
Controller v1.0.8 ✓  
168.86.29 SSID:

## Motor 2 Configuration

### General

axis

### Power

enabled

drive-current

idle-current

### Motion

reverse

microsteps

max-velocity

max-accel

max-jerk

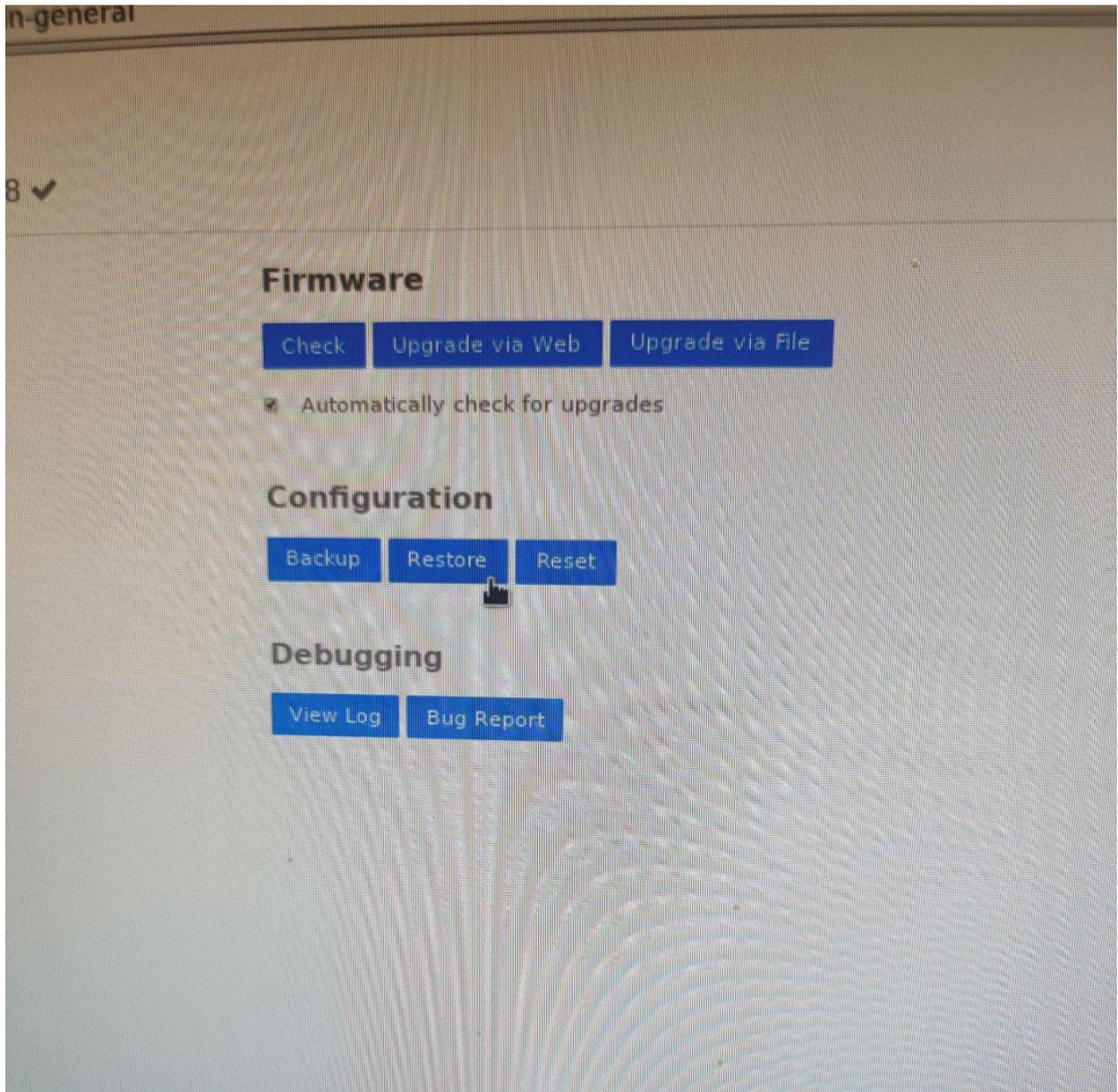
step-angle



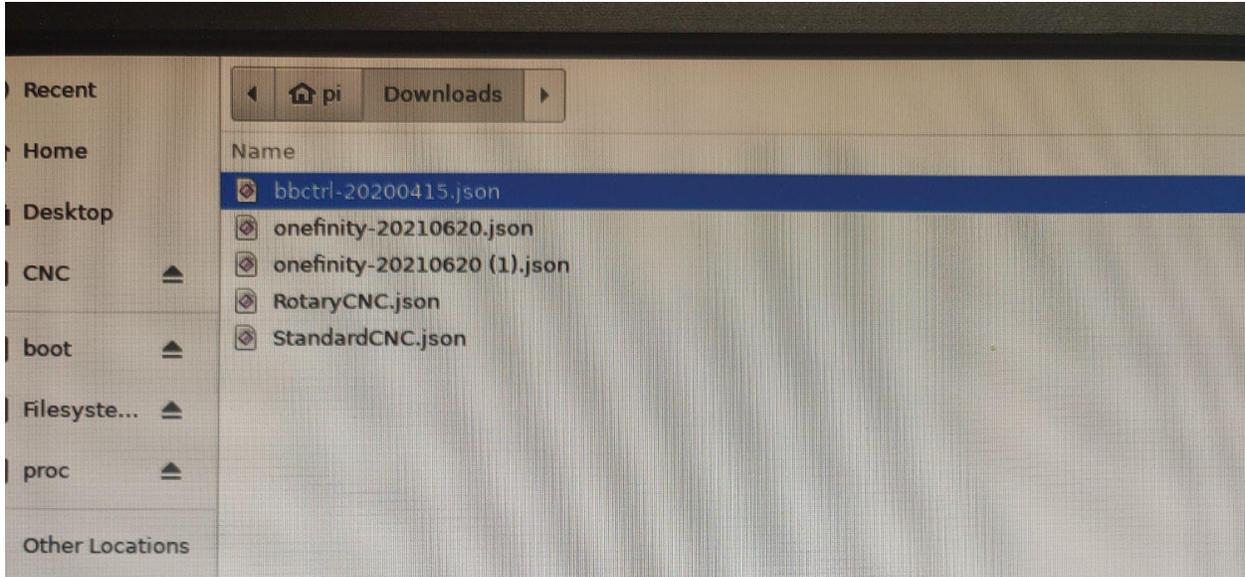
**Step 3:** This step is to show how to go between different configurations and rename them if you have a keyboard.

First you want to backup your rotary settings we just made. To do this we do like we did above by going under ADMIN > General and clicking "Backup".

Now you can click "Restore"



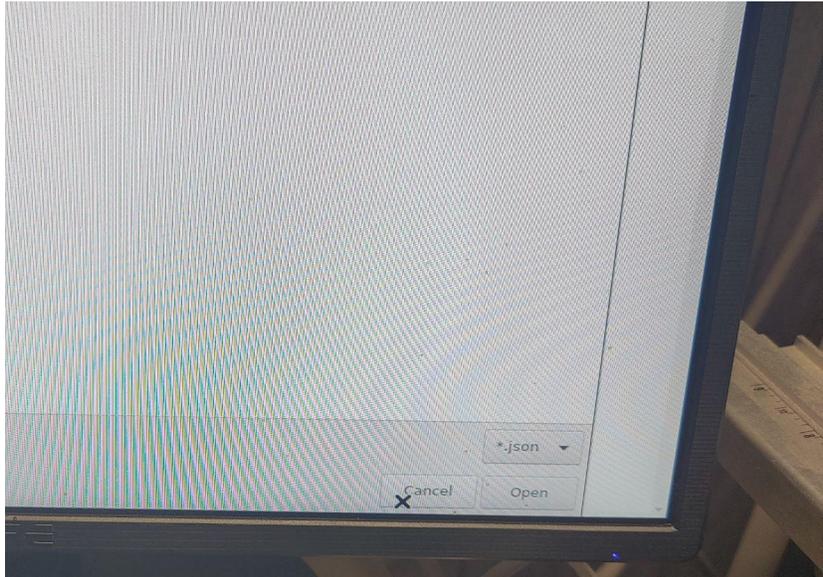
and you will have a folder pop up showing you all of your configuration files which are .json files.



You should see two files that are named something like "onefinity-20210620.json" and "onefinity-20210620 (1).json" where the numbers are the date. That first file is the Standard configuration and the one with the "(1)" attached is our rotary configuration. You can write these down somewhere so you know which is what or you can rename the files by using a keyboard and doing the following.

\*\*\*\*\* Optional Part\*\*\*\*\*

Click cancel to exit off the folder opening.

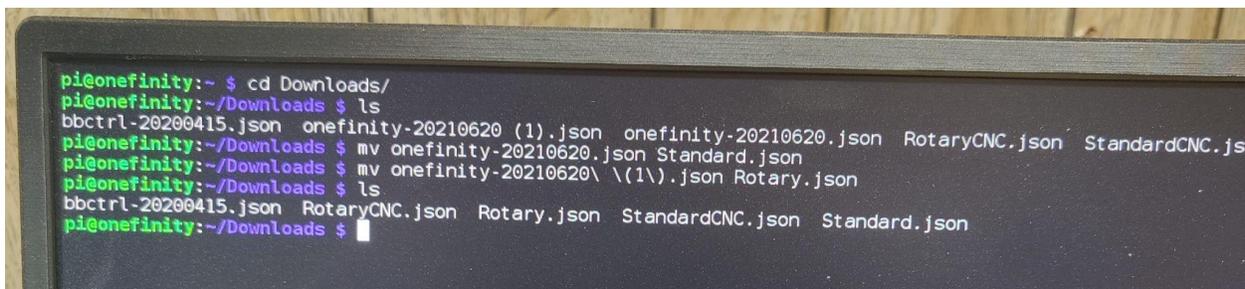


Hold down the "Ctrl" button and press "t" then press "c" and let go of the "Ctrl" button when you get a pop up like this:



Now type this "cd Downloads/" without typing the quote marks. Press the Enter key. Type "ls" and hit Enter. This shows you all of your files so you can see them while you do the following. Type "mv onefinity-20210620.json Standard.json" (**MAKE SURE TO USE WHATEVER FILENAME YOUR FILE IS, MINE IS THIS ONE BUT YOURS WILL BE DIFFERENT, ALSO YOU CAN NAME YOUR NEW FILE WHATEVER YOU WANT I NAMED MINE STANDARD FOR WHEN I WANT THE NON ROTARY SETUP**) and Press the Enter key.

Now for the rotary configuration: type "mv onefinity-20210620\ (1).json Rotary.json" but change the date to match your file **INCLUDE THE \ that i added you have to have them** and hit the enter key. Now if you type "ls" you will only see the new filenames you created.



To get back to the controller you can hold down the "Ctrl" button and press "t" "t" and let go of the "Ctrl" button.

\*\*\*\*\* End of Optional Part \*\*\*\*\*

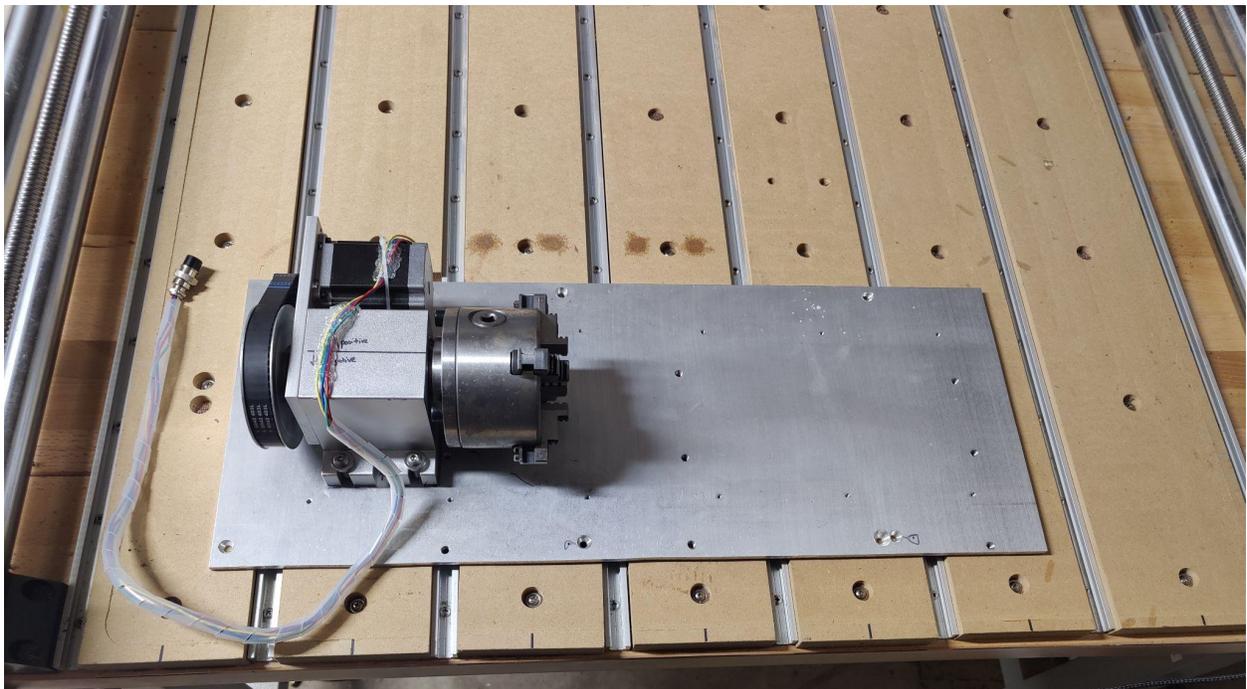
Now whenever you want to load a configuration file you will go to ADMIN > General and Click on "Restore". This will bring up the folder you saw earlier that lists all of your configuration files. All you have to do is click on your Standard .json file and click "Open" if you want to use the Onefinity without the rotary or click your Rotary .json file and click "Open" if you want to use the Onefinity with the rotary.

**Step 4:** Now that you have the configuration files saved. Here is the overview of what to do when going from the 3 standard axes to the rotary.

1. Put your rotary on the table wherever you want to use it at.

2. Turn on the Onefinity Controller.
3. Raise the Z-axis to give enough clearance to move over the rotary.
4. Move the router over to the center of your rotary. (This is important to do now because later the Y-axis won't be able to move.)
5. Shut down the controller.
6. Unplug the M1 and M2 cables from the controller
7. Plug in the Rotary cable into the M1 spot on the controller.
8. Turn on the Controller
9. Load the configuration file for the rotary as shown above.
10. Now it is ready for use. (well if you have the right post processor to make a rotary work the way you want.)
11. I have only used my rotary for laser engraving and it worked fine with Lightburn and Vcarve Desktop. I had to modify the post processor for VCarve to get it to work with a rotary and if anyone needs that or how to do it I can help there somewhat.

Here is what my rotary looks like when I have it sitting in place, i have been using it on my CO2 laser so it now has a different plug on the end but this is the orientation it needs to sit in for the hook up I have said here (A instead of Y).



As you can probably tell from the picture the laser or router will go left and right in the X direction and the rotary will spin clockwise or counter-clockwise instead of the laser or router going up and down in Y direction. This is why you want to have your router or laser set in the center of the material your rotary is holding before you hook up the rotary.