

This Atari 800 mechanical keyboard was created from the design by multifarious industries:
<https://github.com/multifariousindustries/Atari800Keyboard>.

The only modification I made to the overall design is a slight change to the spacebar stabilizer 3d print models to make the pegs that stick through the PCB stronger.

This keyboard has been tested on an Atari 800 and is identical to the one I use on a regular basis.

Installing this keyboard in your Atari 800 will only require a Philips screwdriver. It might be helpful to have a key-cap puller but this is not necessary.

A high-level overview of the installation process:

1. Open the Atari 800.
2. Remove the current keyboard from the case.
3. Pull the key caps off of the old keyboard to be reused on the new keyboard.
4. Put the spacebar on the new keyboard.
5. Mount the new keyboard using the mounting brackets.
6. Plug in the new keyboard.
7. Reassemble and close up the Atari 800.
8. Insert the key caps.

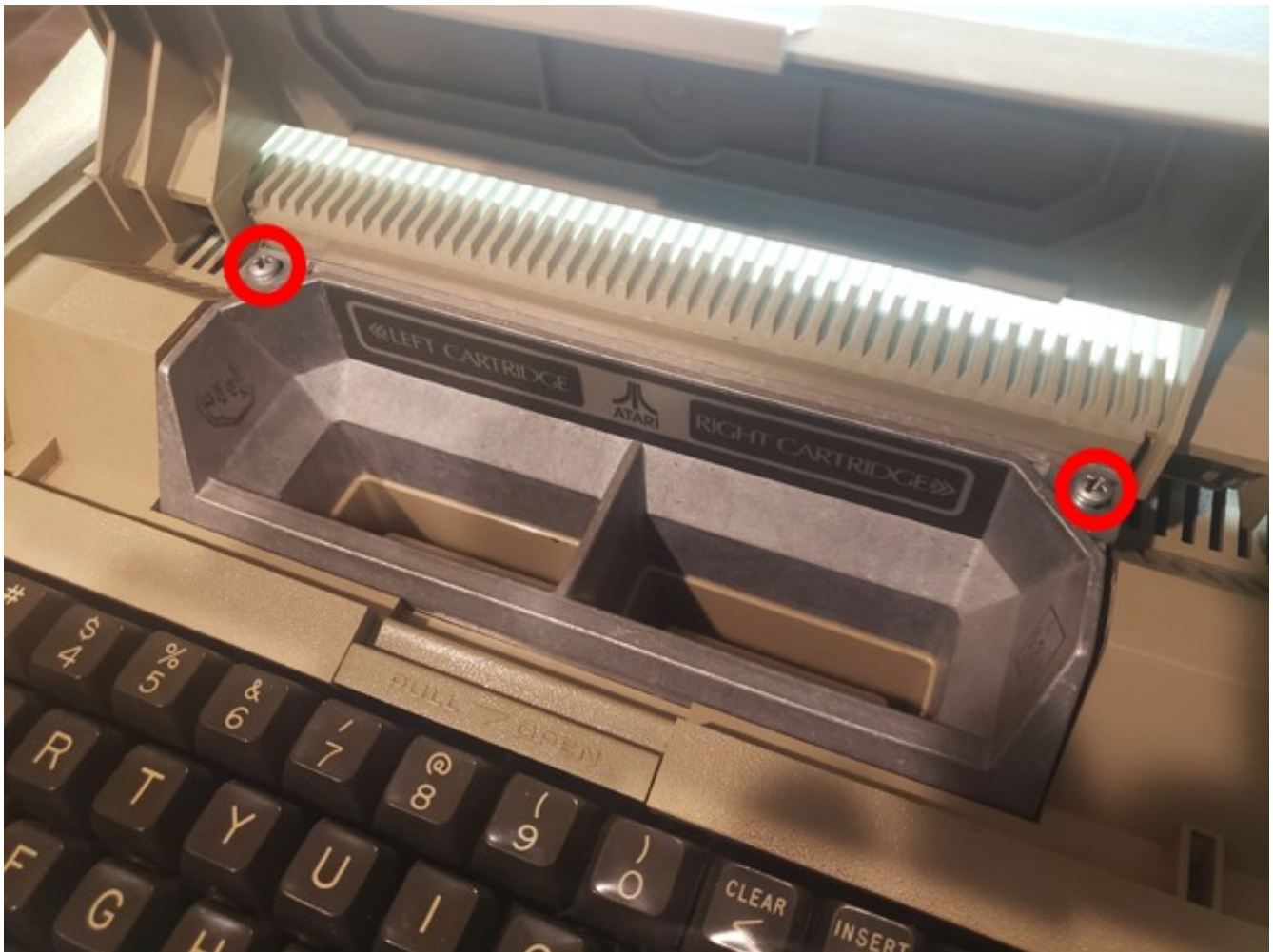
Step 1: Open the Atari 800

Carefully turn the Atari upside down. You may want to place it on a towel to prevent scratching. Then remove these screws:



Now carefully turn the Atari right-side-up again.

Open the cartridge door and remove these two screws:



With the screws removed you can pull the top of the case forward slightly and then lift up. Set this aside.

Step 2: Remove the current keyboard from the case

Lift the top of the Atari 800 and then carefully pull the old keyboard connector off of the connecting pins:



Set the bottom half of the computer aside as we'll be working only with the top half for now. Turn the keyboard/top-half of Atari upside down and remove the screws which are securing your old keyboard to the case. There may be washers under some of the screws.

Step 3: Pull the key caps off of the old keyboard to be reused on the new keyboard.

You can use a key-cap puller to remove the key caps from the old keyboard but generally on the Atari 800 these caps come up quite easily and can be done with no tools. Set them aside as they will be reused on the new keyboard.

Step 4: Put the spacebar on the new keyboard

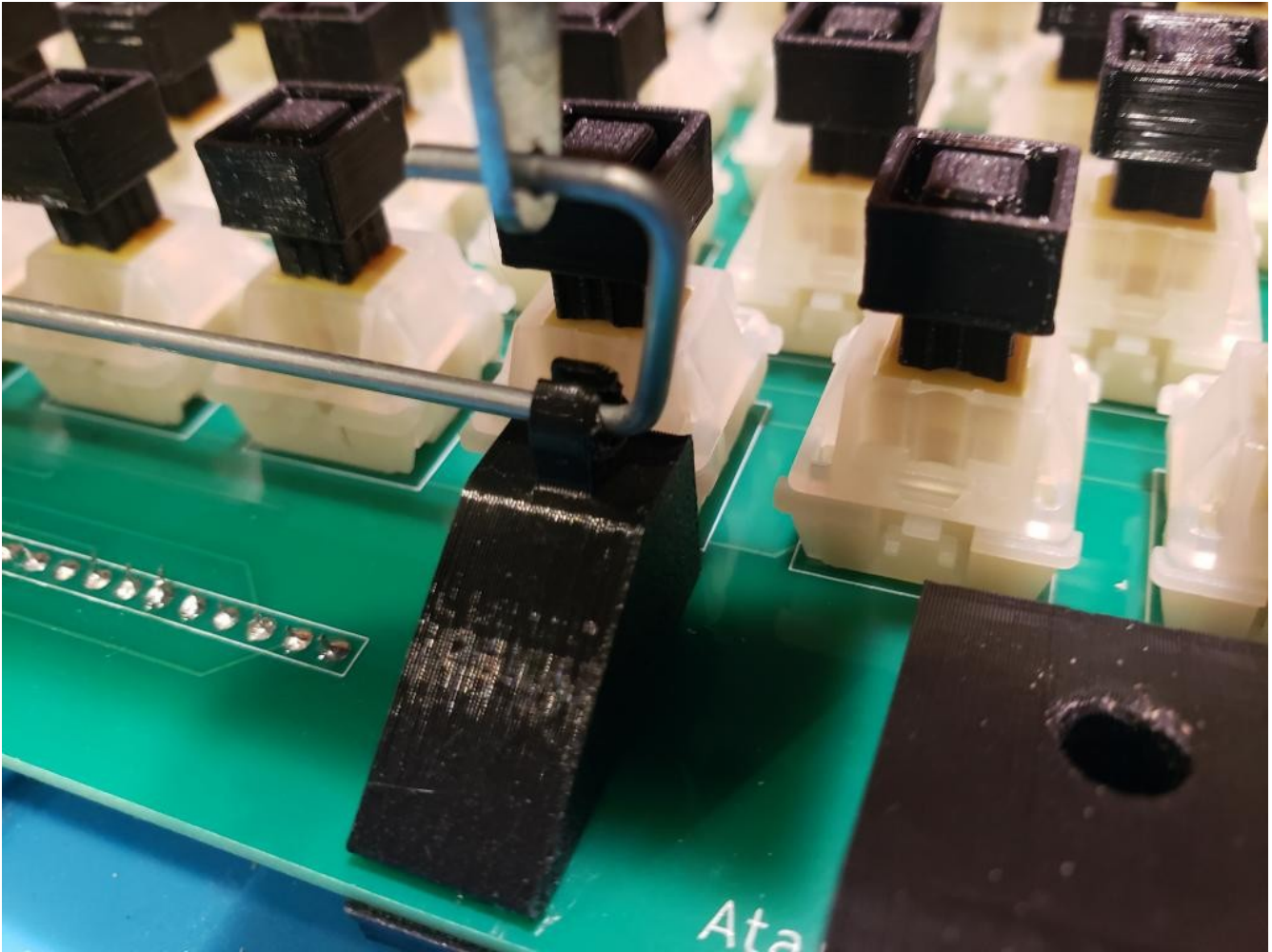
I found that putting the spacebar on is the most fiddly part of the whole process so I have tried to simplify it as much as possible and also will go into (probably too much) detail here on the subject.

First, a little terminology: I'm going to call the 3D printed pieces that hold the spacebar's metal bar down a "boot" (since it's shaped like a boot). Each of these two boots have another 3D printed piece that sit under the circuit board and lock the boot in place, so let's call that a boot-lock.

The designs for the 3D printed components were made by the designer of the PCB and are available for download on the GitHub page (URL at the top of this document). I have changed the boot from their design a bit: First, I added the boot-lock and changed the plugs on the bottom of the boots to make them stronger.

There's two styles of "boots" included, the C type which are on the PCB and the (original) L type (in the zip-lock bag of extra parts). I'm just calling these types C and L because the part that "holds onto" the spacebar's metal bar is shaped either like a C or two opposing L's (albeit upside down Ls).

The C type boot is my doing as I wanted to have the boots pre-installed and for it to be possible to install the spacebar without too much trouble. You can press the metal bar into the ring of the “C”:



Here is the procedure for using the “C” type boots (installed):

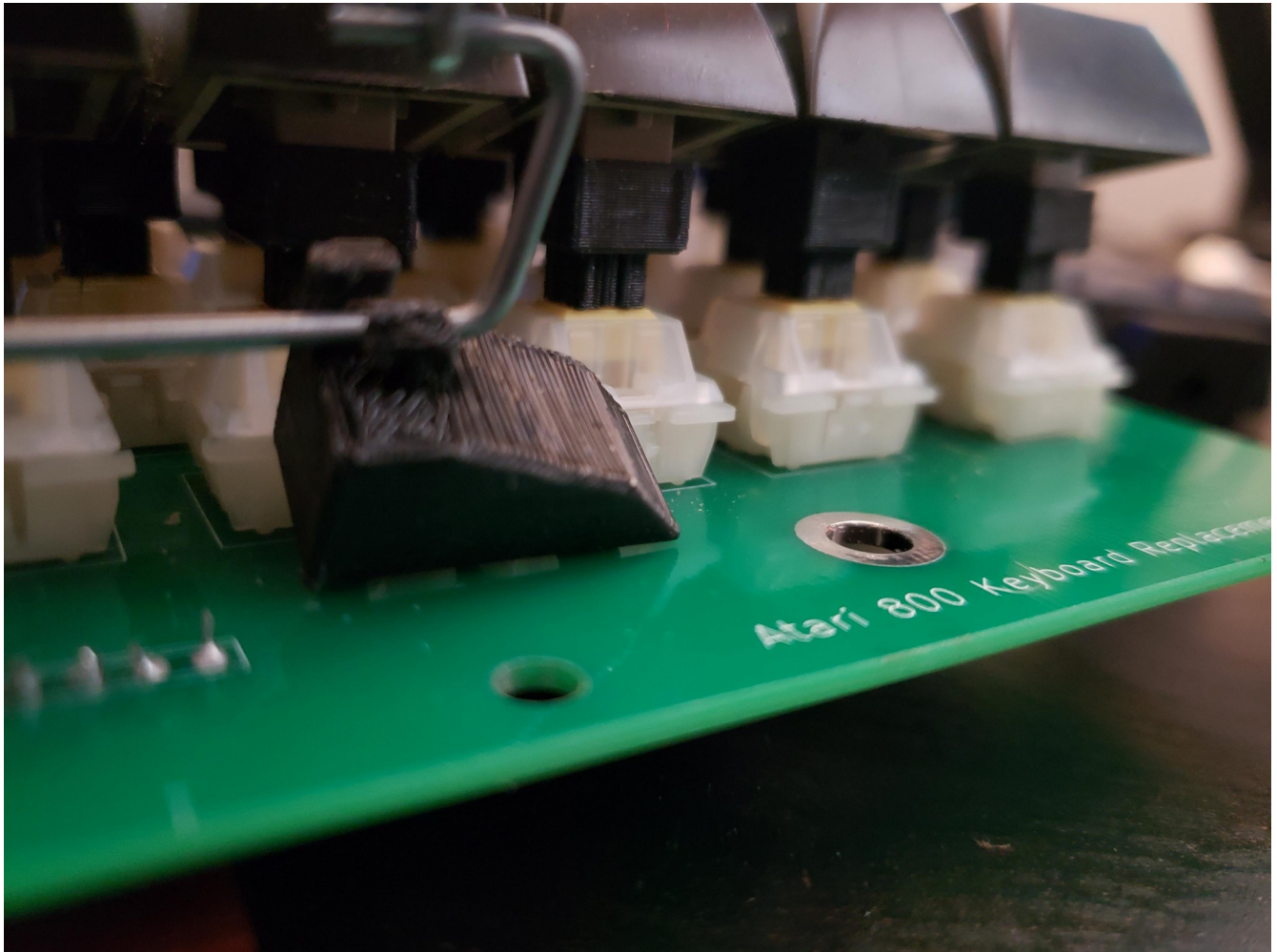
Position the bar into the opening and push. You will need to use considerable force, the opening is very small (to keep the bar from falling out) but the plastic should be just flexible enough to allow it to snap it without breaking.

If you find this difficult there is an alternate way to get the boot attached to the bar but it’s a bit more work: Remove the bar from the spacebar, remove the boot from the PCB (removing the boot-lock), slide the bar through the “C” ring on the boot then re-attach to the PCB.

I have decided to include the L type boots as well in-case the “C” type becomes too troublesome or if the “C” breaks in the process of installing (this hasn’t happened to me but it could be a possibility).

Here is the procedure for using the “L” type boots:

Do not force the bar to snap into the boot, instead rotate the boot 90 degrees so that the bar can slip between the two “L” shaped hooks, as shown below:

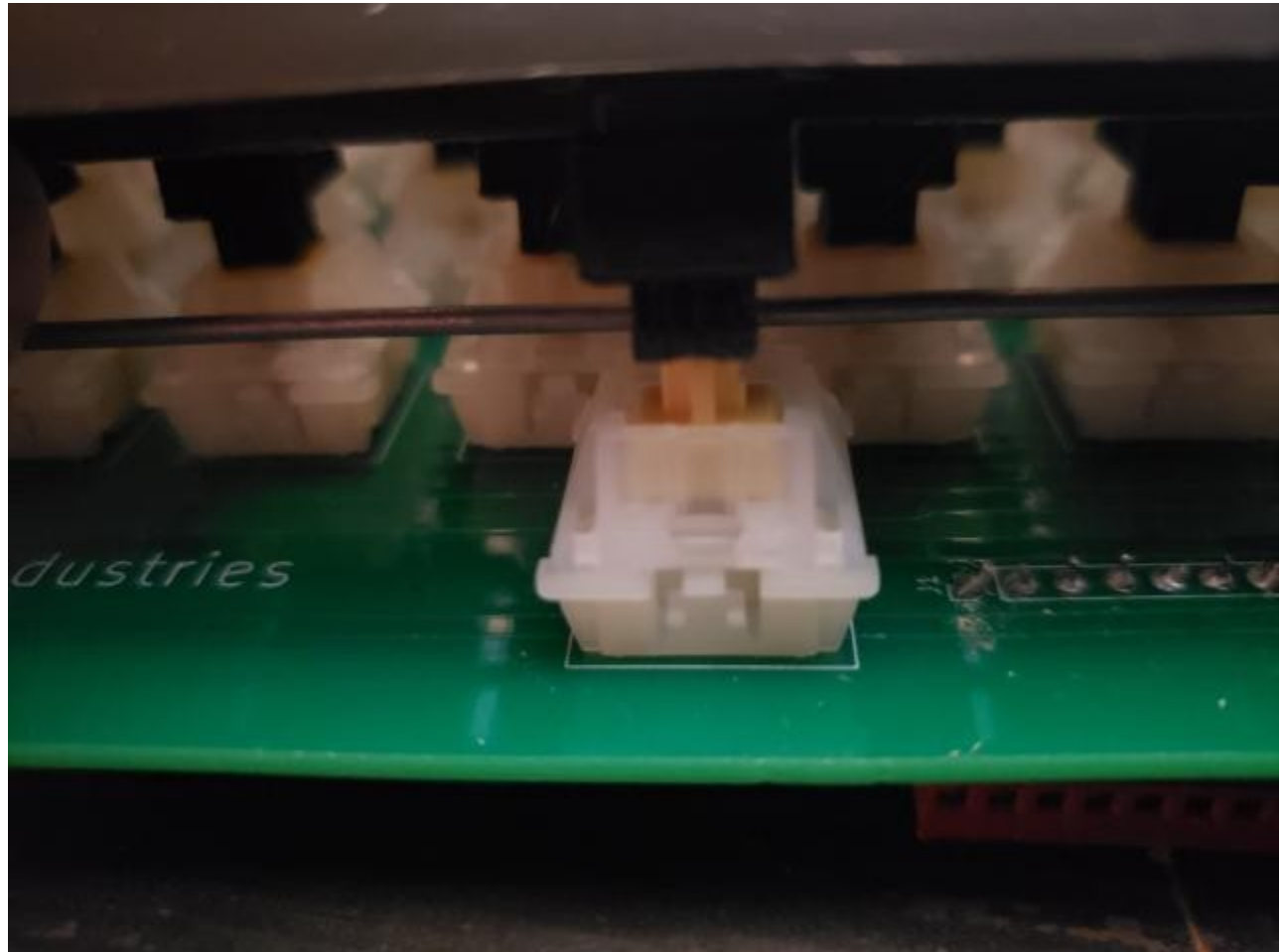


Then rotate the boot to line up with the holes on the PCB and push the pegs on the bottom of the boot through the holes on the PCB and attach the boot-lock on the underside of the PCB.

Regardless of which “boot” you use, continue spacebar installation:

If done correctly the metal bar of the spacebar should be locked in place by the boots and will run behind the MX keyswitch for the spacebar.

Then align the spacebar with the stackpole, MX adapter, and MX key-switch:



Step 5: Mount the new keyboard using the mounting brackets

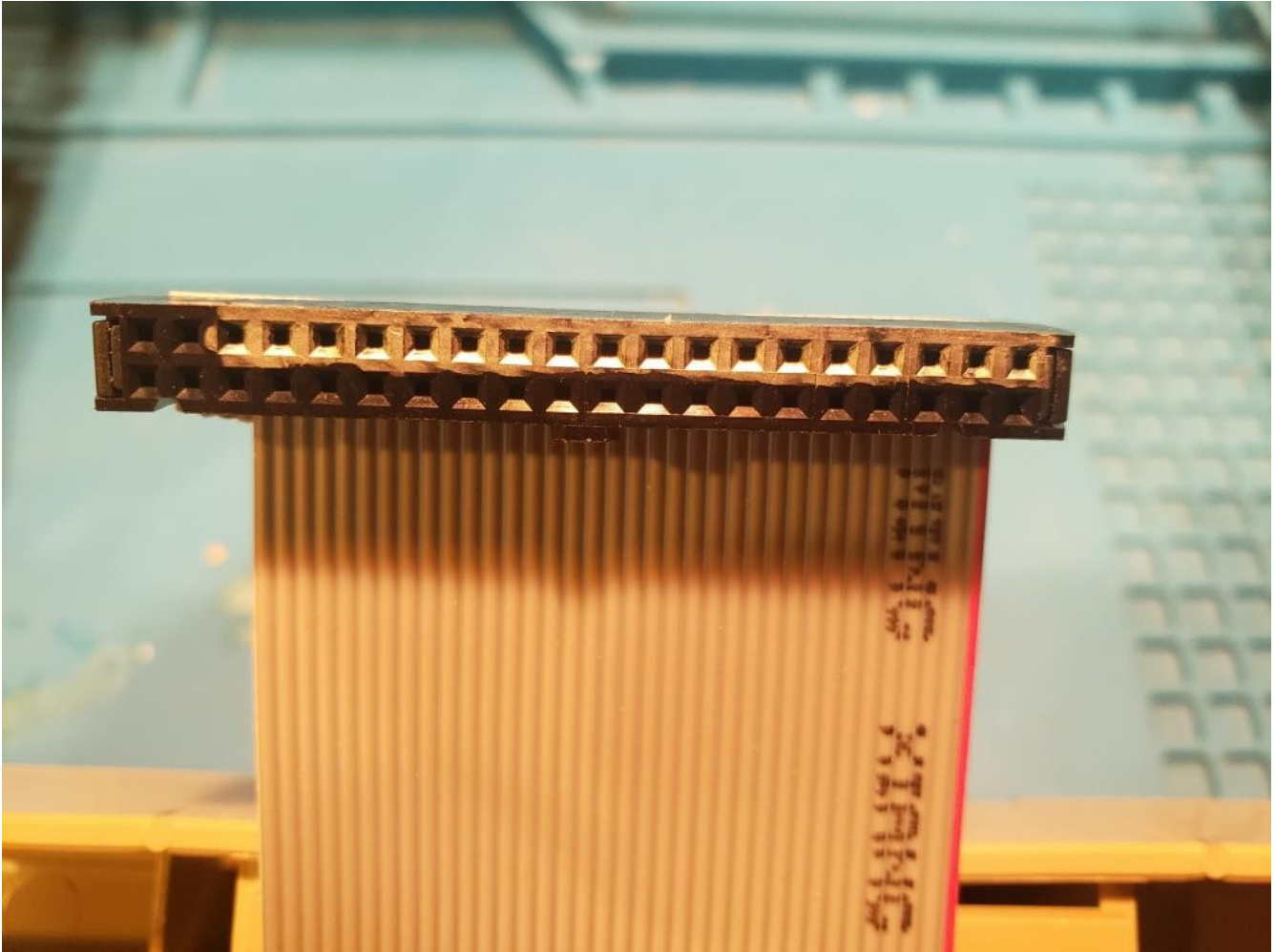
I have already attached the mounting brackets to the PCB but they may have shifted in shipping (or more likely when I was bubble-wrapping). So make sure that the screw holes of the plastic mounting brackets line up with the screw holds on the PCB.

The mounting brackets ensure that the PCB will sit low enough that the keys will be at the proper height (given the height of the MX to Stackpole Adapters which let you re-use the Atari's original keycaps).

Screw the keyboard into the top of the case using the same screws that held the original keyboard. Do not use any washers that may have been there before. To ensure you do not damage the plastic of the case start by turning the screw counter-clockwise (as if unscrewing) until you feel and/or hear a small **clunk**, this is the threads of the screw falling back into the original threads of the screw-hole and ensures that you don't damage the threads. Then tighten. You will notice the screws will tighten down after only a few turns, this is because the mounting brackets are thicker than those used on the original keyboard.

Step 6: Plug in the new keyboard

The Atari 800's original keyboard used a connector not easily found so I have used a 40 pin connector instead and have identified the holes to be used with silver paint:



Be sure there is no twist in the cable and align the connector on the end of the ribbon cable with the keyboard connector pins.

Carefully align the pins with the connector and push the connector onto the pins. If you encounter resistance do not force it, instead check that all of the pins are aligned with their respective hole.



Step 7: Reassemble and close up the Atari 800

Place the top of the case with the new keyboard mounted on the bottom half of the computer and follow Step 1 in reverse order to reassemble the computer. You may find that it's a bit of a tighter fit now due to the thickness of the cable and the slightly lower sitting PCB but it should close up fine but the cable will be under some compression.

Step 8: Insert the key caps

Now all that is left to do is re-add all of your original key caps to your new keyboard.

If your original keyboard is a Hi-Tek keyboard then you will need to use the optional off-set MX adapters included in the zip-lock bag.

