version 0.1

January 27, 2016

Assembling VAX MIDI

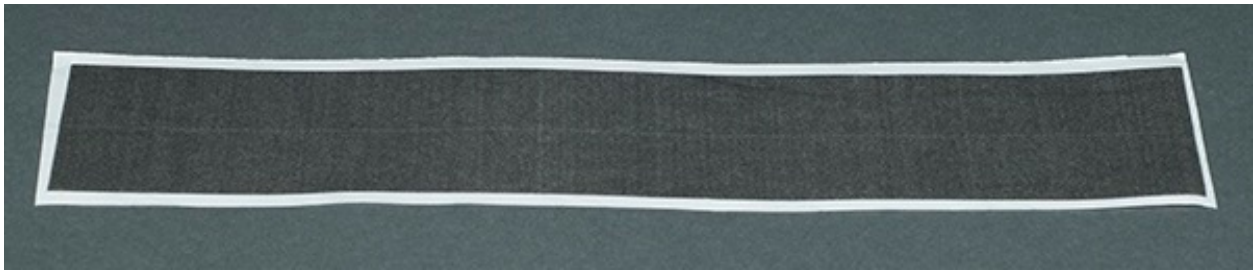
Introduction

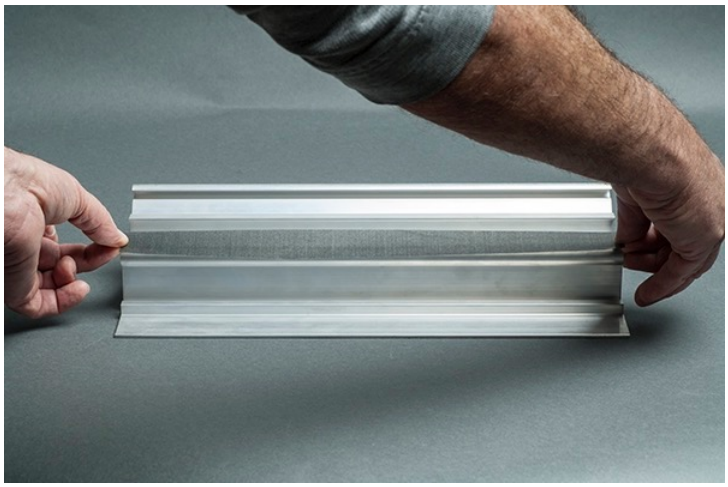
Building your VAXMIDI will be an enjoyable experience if you dedicate proper time and attention to the project. You will need about 4 uninterrupted hours to complete the task and in the process you will learn not only how to build it, you will learn how to customize it to your preferences. At the same time, you will learn how to repair it if it is ever damaged. It is our goal to insure that every part is readily available and that you will never need to pay for keyboard repair again.

In the VAXMIDI box you will find a chassis, an aluminum Key Base and a box of key parts for each 2 octave module, a box of circuit boards and connecting cables, plates for mounting the circuit boards, an envelope of soft parts (such as cables, felts and anti-friction tapes), screws and end caps. You will only need a screwdriver and a Torx bit to complete the project.

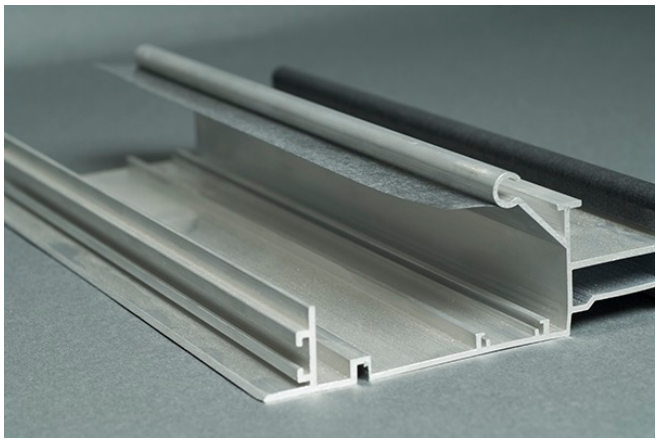
Building the Key Base (30 minutes for each Key Base)

Remove the Key Bases from the chassis. They slide out on rails. You will have 2, 3 or 4 Key Bases depending on your VAXMIDI model. As you can see in the picture, there are 2 loops on the Key Base, one for the key and one for the hammer. Find the loop tape in the envelope of soft parts. This is adhesive backed UHMW-PE which is a tough low friction polymer.





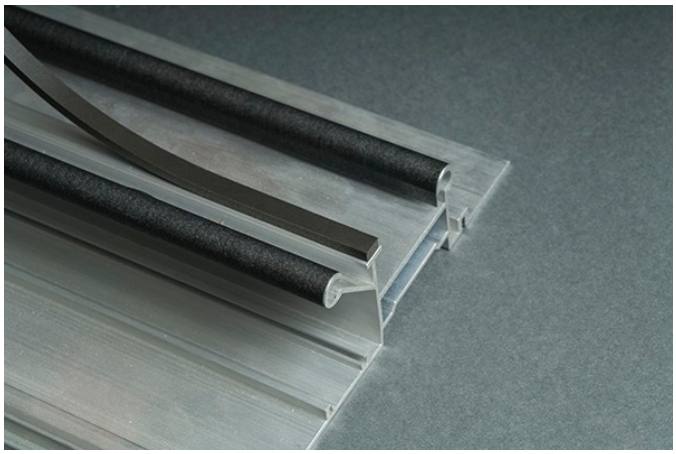
Apply the loop tape to each loop. On the lower loop, center the tape on the top of the loop then slowly slide your finger back and forth over the tape as you slowly work your way to the back edge of the tape. Then continue back and forth from the center and work you way to the front edge of the tape. The objective is to apply the tape without creating any ridges or bubbles on the

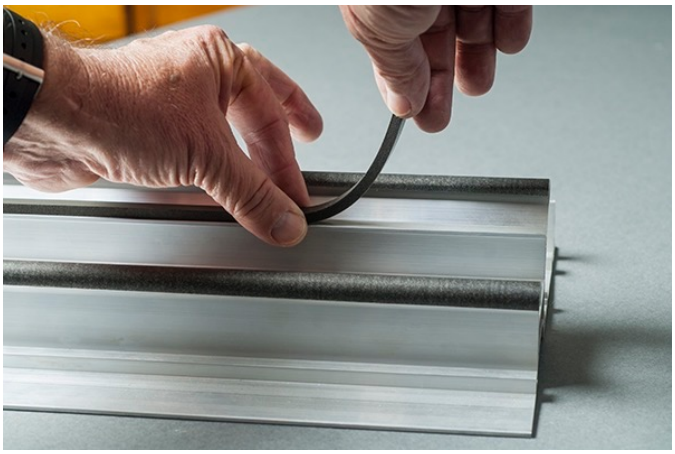


surface. The tape is fairly stiff so it is easy to do if you take your time.

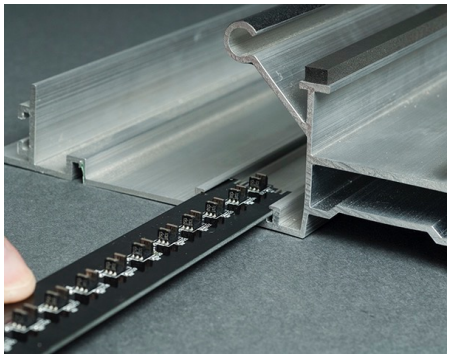
Repeat this for the upper loop except that you first position the tape where the loop meets the supporting arm and you work you finger back and forth from there all the way around the loop.

Apply the Key Rest foam to the Key Base.

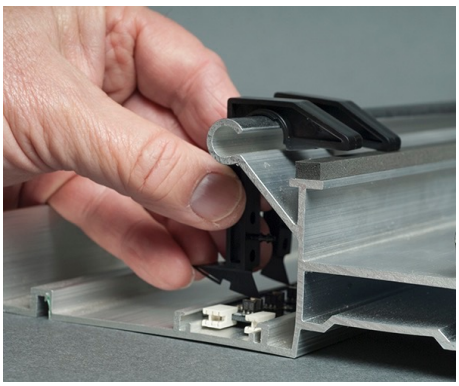




On some early units, this has already been installed. If not, remove the paper backing and apply it to the key rest as shown.



Install the Sensor circuit board by sliding it into the rails on the Key base

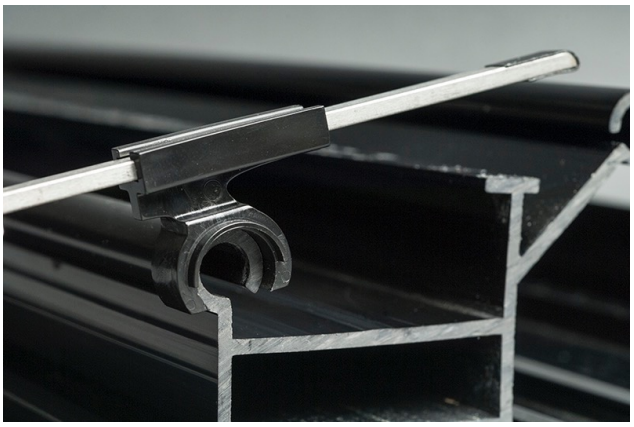


Remove the Hammers from the box and attach elastomer tubing. Carefully slide the hammers onto the top loop.

Remove the keys from the box. You should have 2 of each white key and 10 black keys. The white keys have their letter molded into the key on the underside. Arrange the keys on a table in the order of their installation. F though E or, when the new Key Guide is available, you can arrange from C to B.

Find the Key Steel Tape in the envelope of soft parts.

Apply this tape to the end of each key. This is also UHMW-PE but it is much thicker than the Loop Tape.



Carefully slide the keys onto the Key Base and then attach the other end of the elastomer tubing to the Key Base.

Repeat this operation for each Key Base.

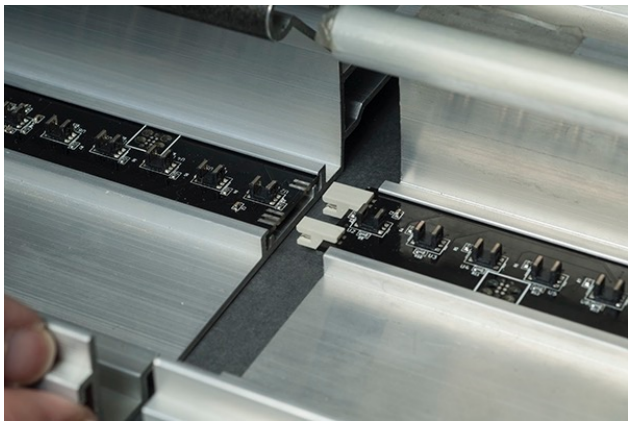
Preparing the Chassis (10 minutes)

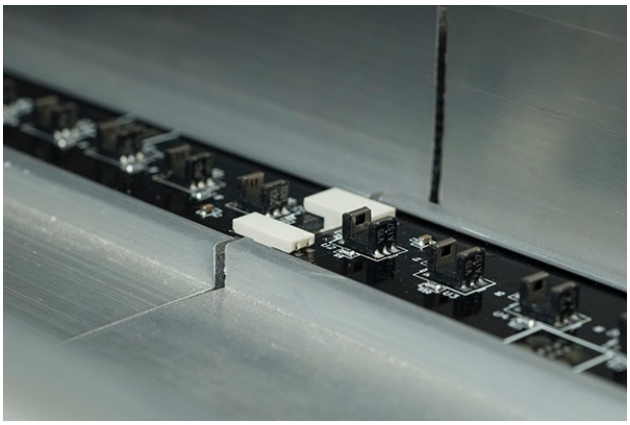
Find the Key Felt in the box that held the keys and hammers. starting at the far right side of the chassis, install the felt by removing the paper backing and applying it to the white key stop. Repeat for the black key stop. Continue applying felt across the keyboard. The felt should end about 4 inches from the left side of the keyboard

Installing the Key Bases (20 minutes)

Install the right end cap onto the chassis using the 11 thread forming screws and the Torx bit on an electric screwdriver .

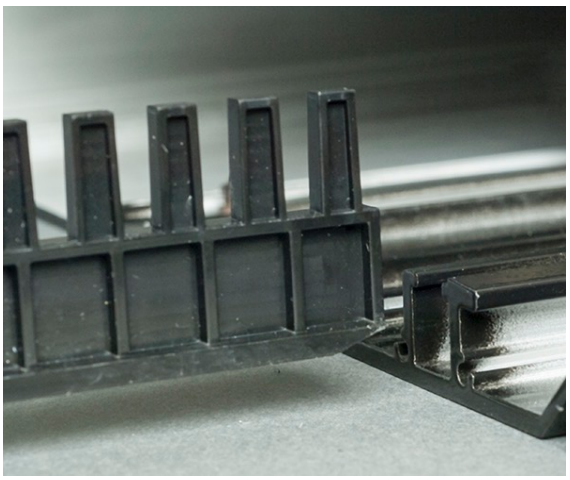
From the left side, slide each Key Base into the chassis. The first Key Base should rest firmly against the right end cap. When the 2nd and subsequent Key Bases are installed, BE VERY CAREFUL to insure that the connectors on the left side of each Sensor board mates with the

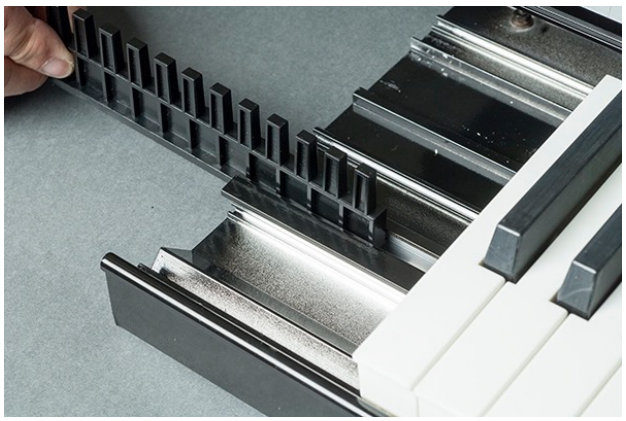




card edge connectors of the board adjacent to its right.

Locate the Key Guides. There are 2 for each Key Base. Slide all the Key Guides into the channel as shown with the sloped edge on the left.

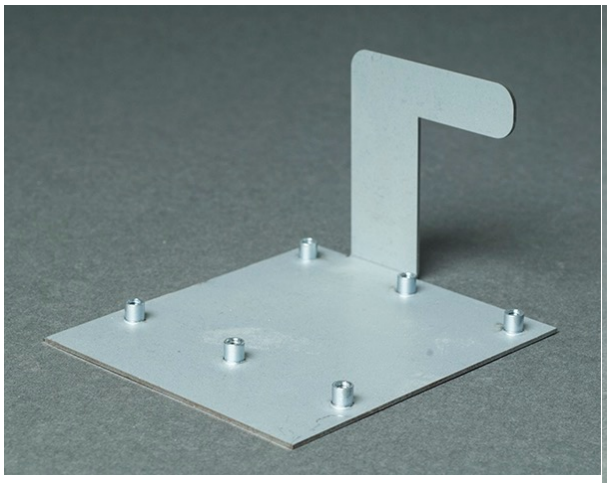


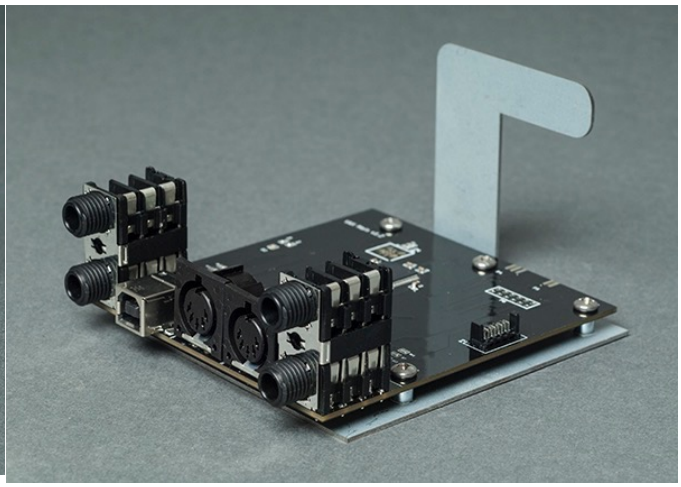


The Riser is a long slat that slides under the key guides to push them up, engaging the keys. Slide the Riser into the same channel under the Key Guides, gently shaking the riser so that the Key Guide stems rise to engage the keys.

Installing the Electronics (30 minutes)

Locate the Main PCB Plate and Main PCB

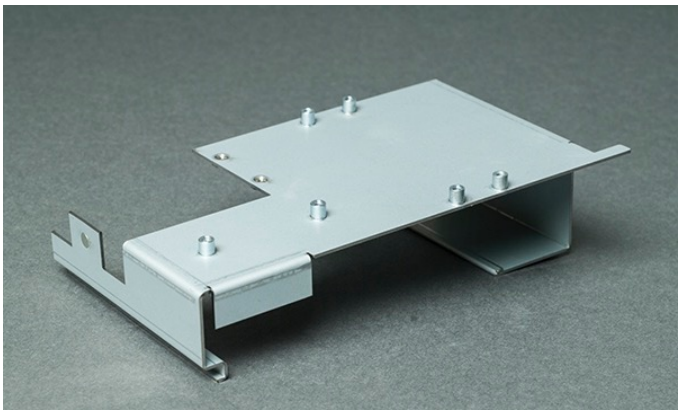


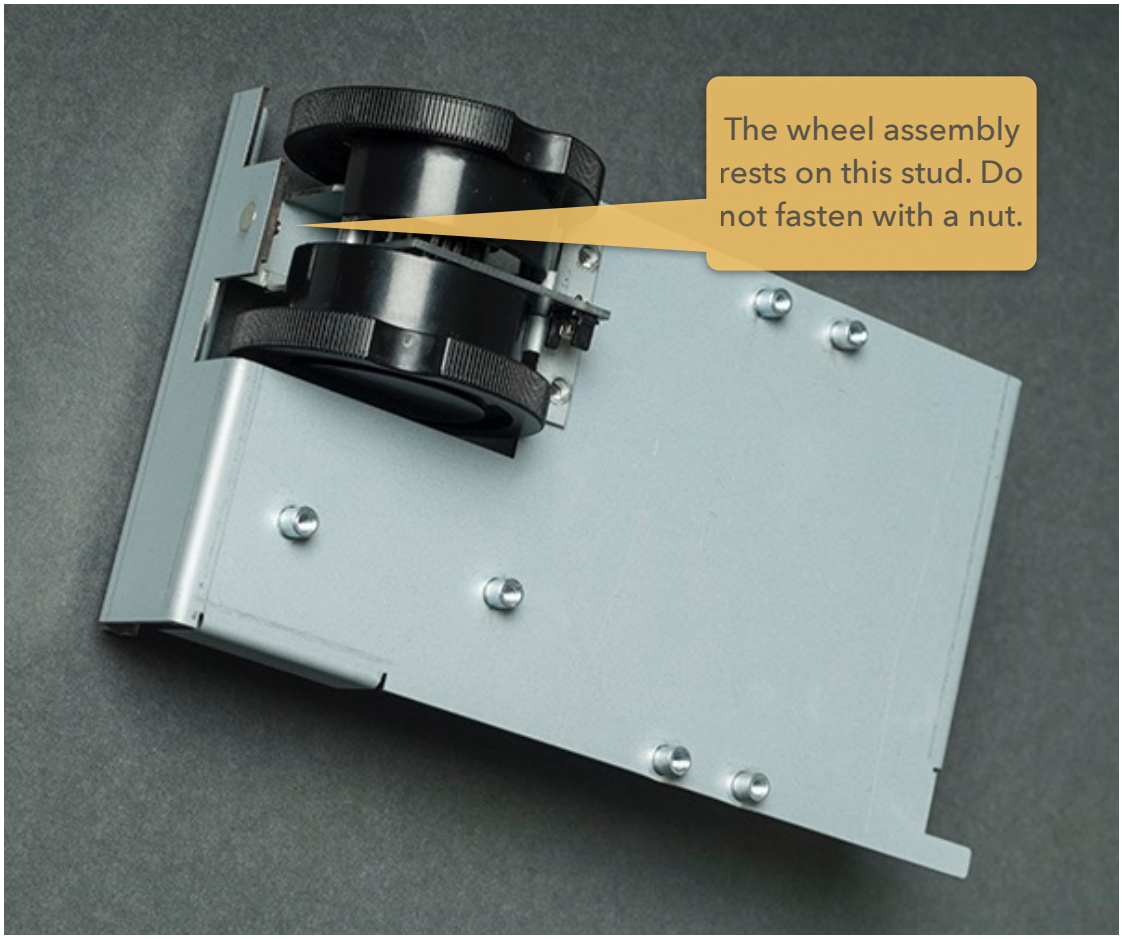


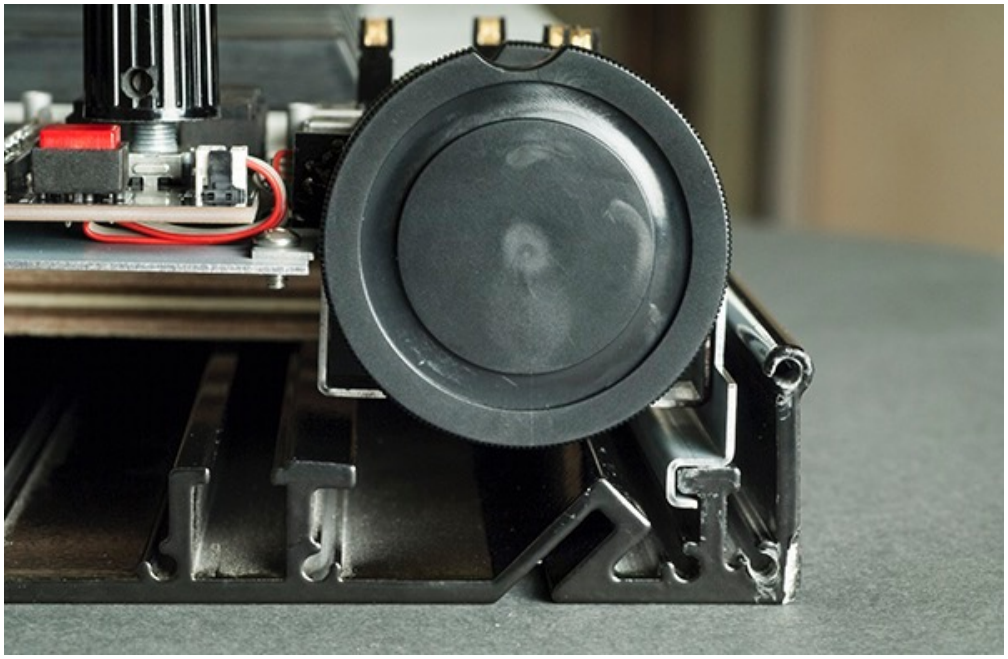
Use six #6 screws to attach the PCB to the plate

Locate the Controls Plate and the Pitch/Mod Wheel assembly

Assemble these 2 parts as shown using two #6 screws



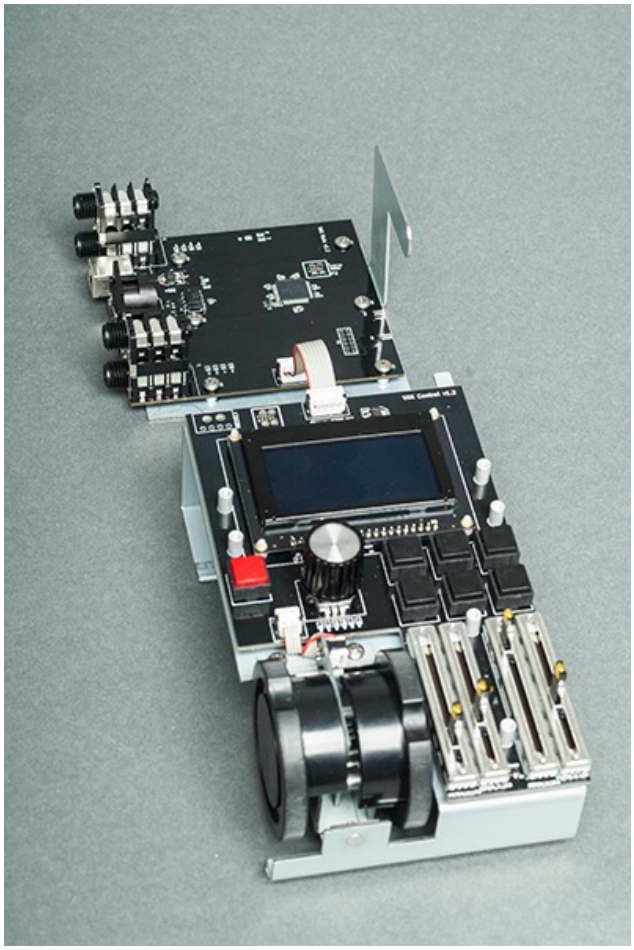


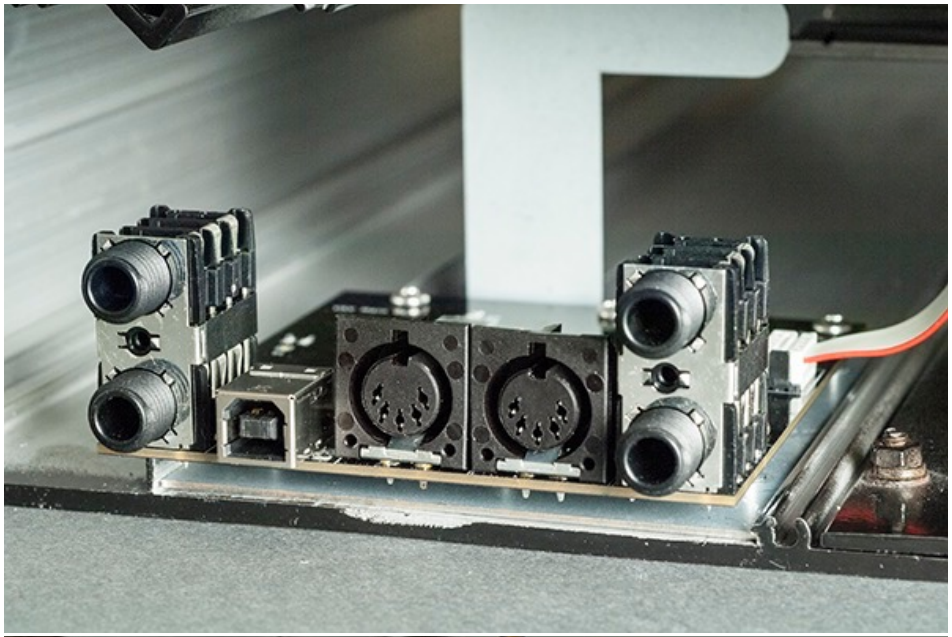


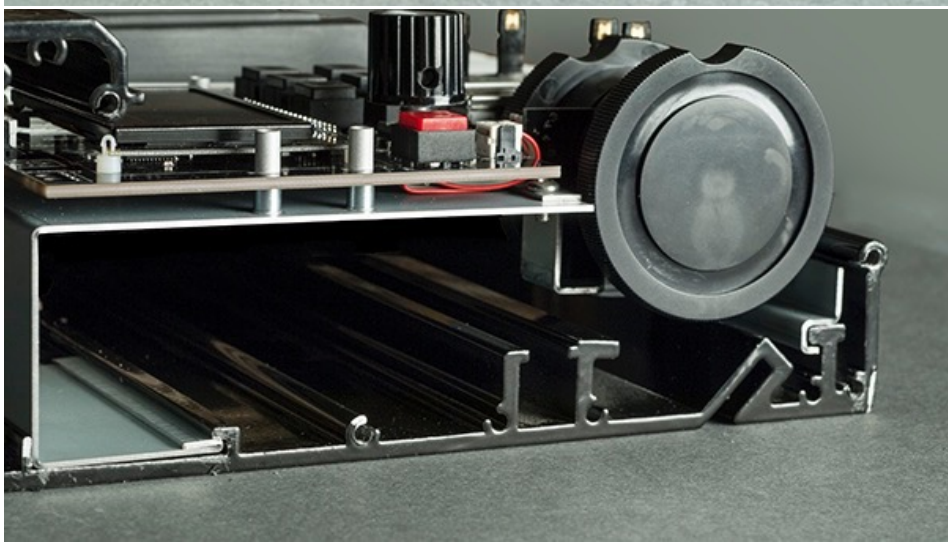
Mount the Controls PCB to the plate using six #6 screws

Locate the 4 conductor cable that connects the Pitch Mod wheel to the Controls PCB. Attach keeping the red stripe on the left side

Locate the 8 conductor cable and attach it to the Main PCB with the red stripe on the left side.







Slide the Main PCB plate into position as shown into slots on chassis rails. BE CAREFUL to align the card edge connector on the Main PCB with the connectors on the last Sensor PCB

Slide the Controls Plate into the chassis as shown

Connect the other end of the 8 conductor cable to the Controls PCB

Attach the bezel to the top of the Controls PCB with six #6 screws then attach the knob to the encoder.

Last Step

Align the connectors on the Main PCB with the holes in the left end cap and attach the end cap to the chassis with 11 thread forming screws using the Torx bit.

Plug it into a USB port or a USB wall charger and start playing!