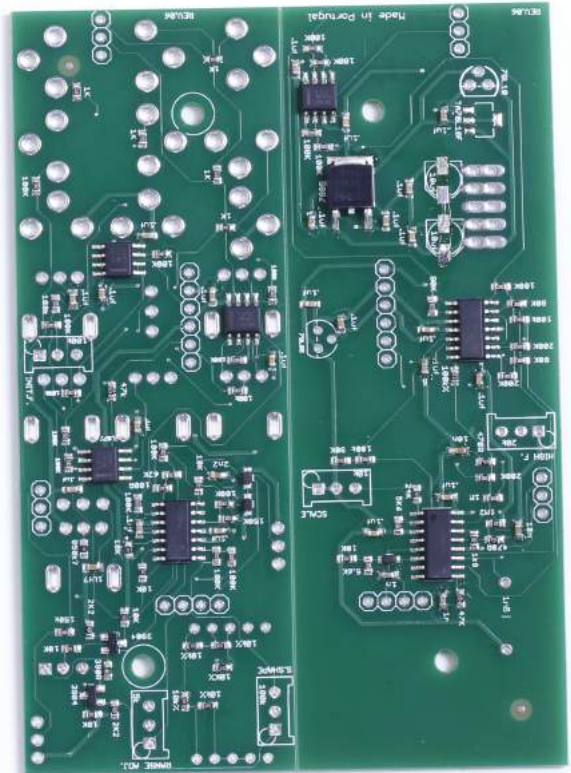




# ADDAC System

## ADDAC701 Assembly Guide

October.2019

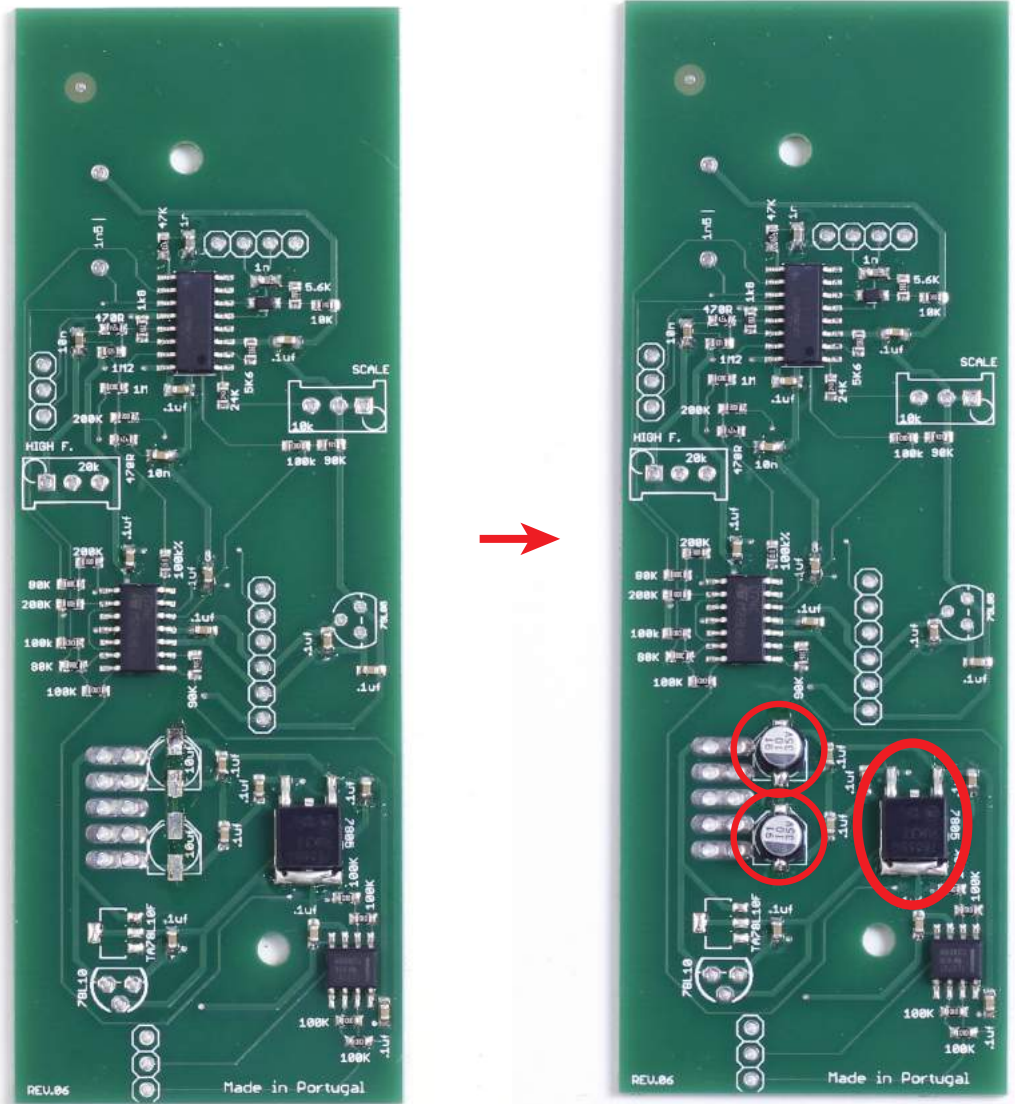


Tools Needed:  
Oscilloscope  
Wire cutter  
Pliers  
Philips key



STEP 1:

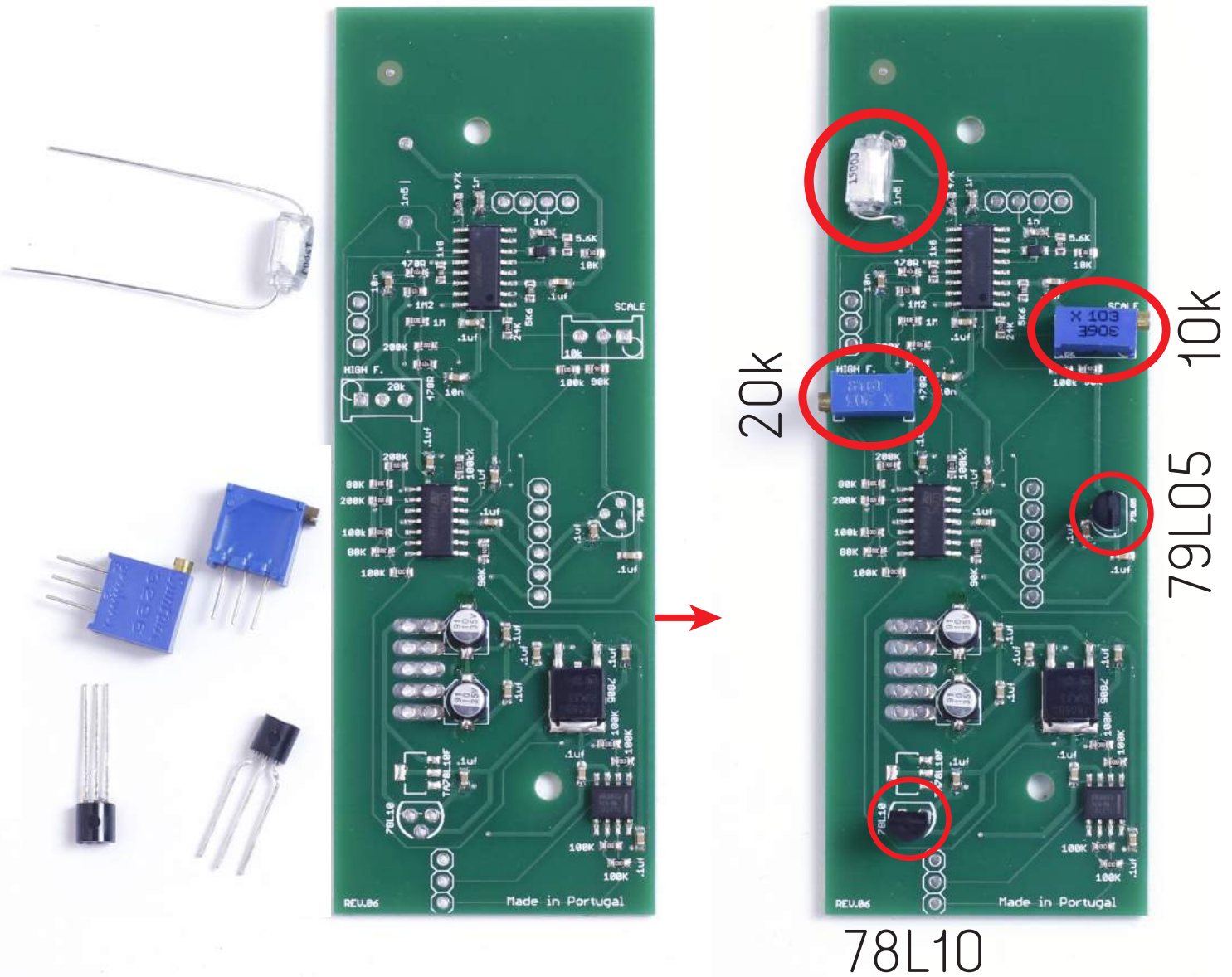
Break the pcbs apart and grab the bottom pcb, also locate the 7805 regulator and the two Capacitors. Place and solder them like shown below.



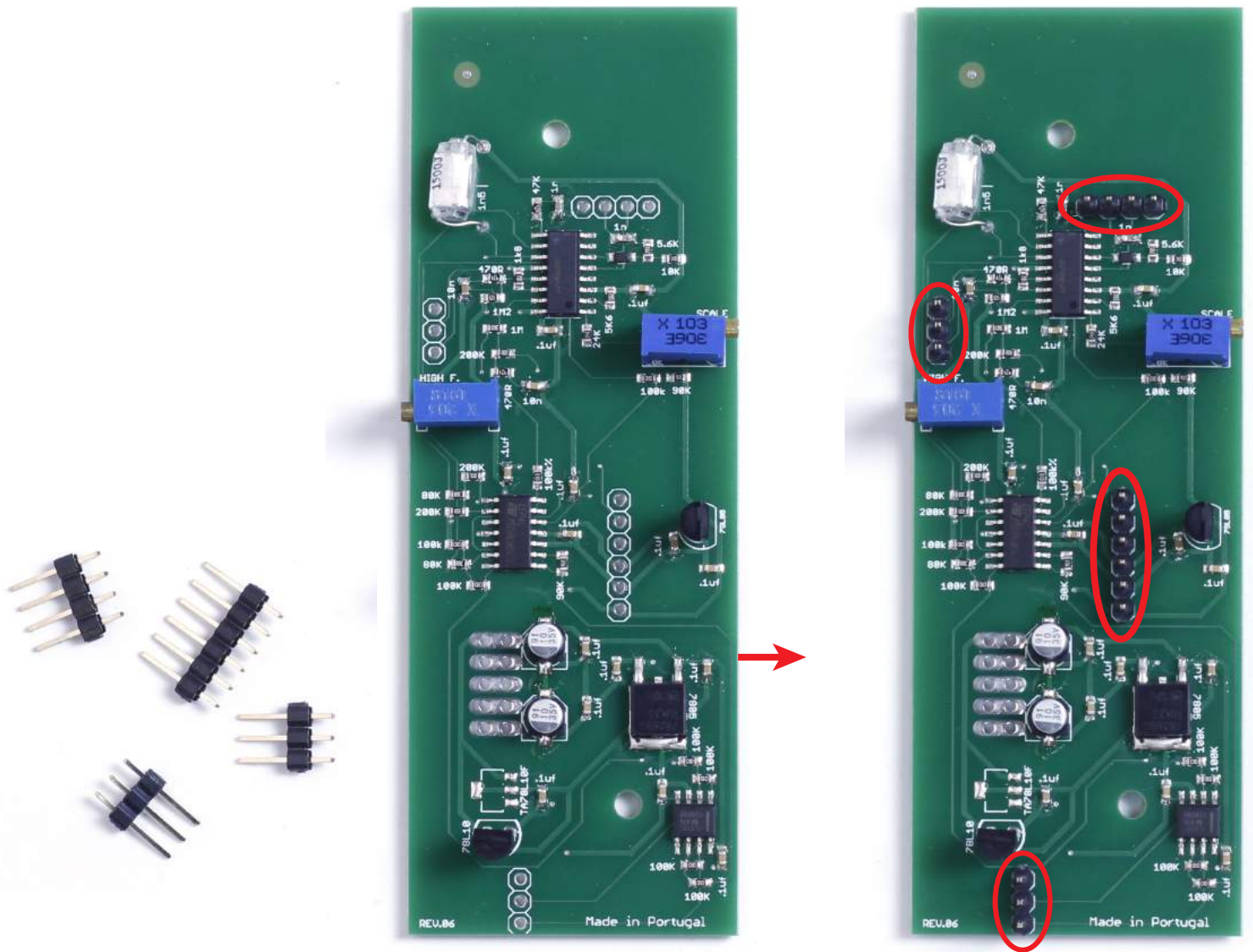


STEP 3:

Next locate the thru-hole capacitor, two trimmers 10k and 20k (marked 103 and 203) and the two thru-hole voltage regulators. Place them and solder them like shown below.

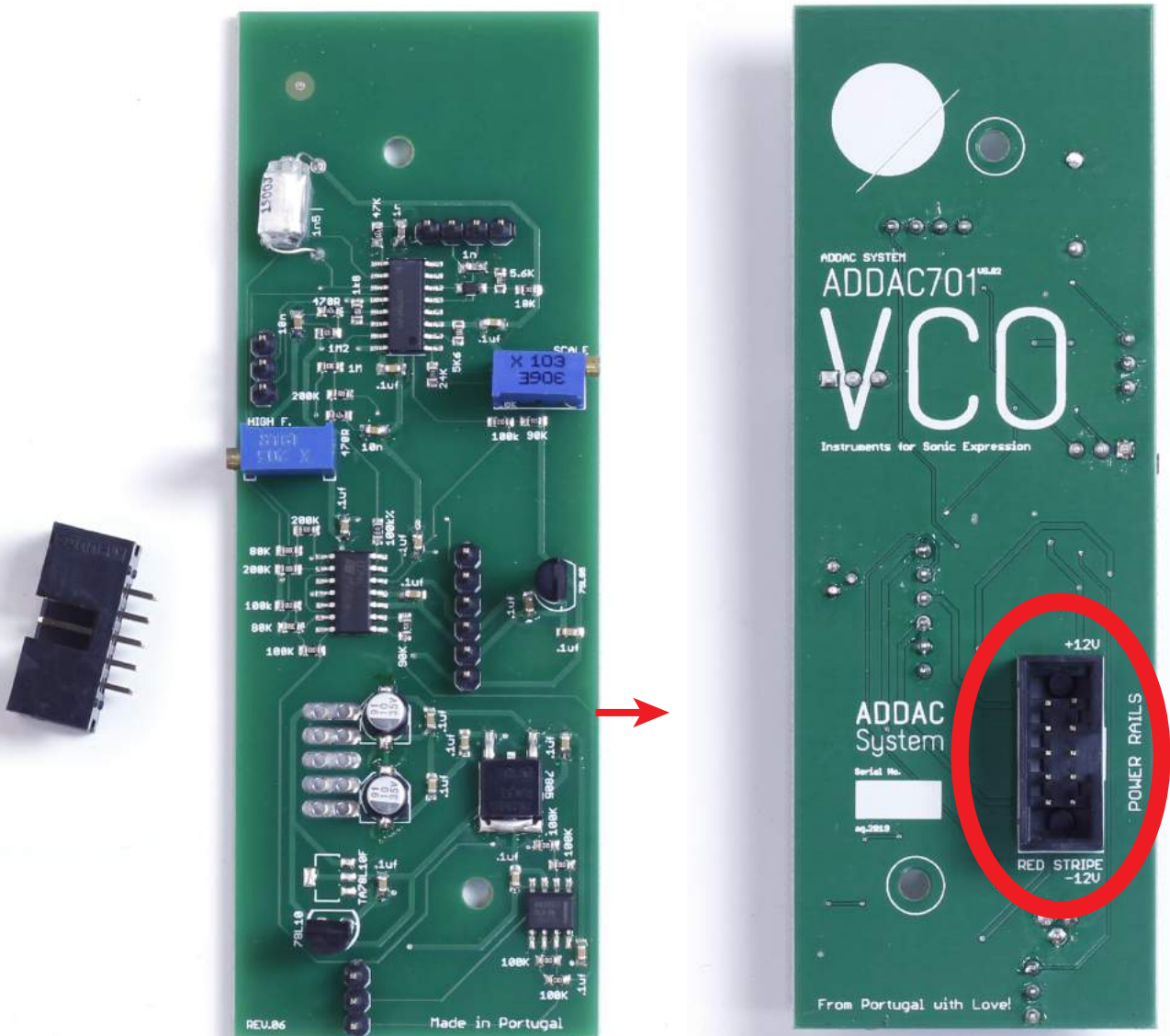


STEP 6:  
Locate the male pinheaders, place and solder them like shown below.



STEP 8:

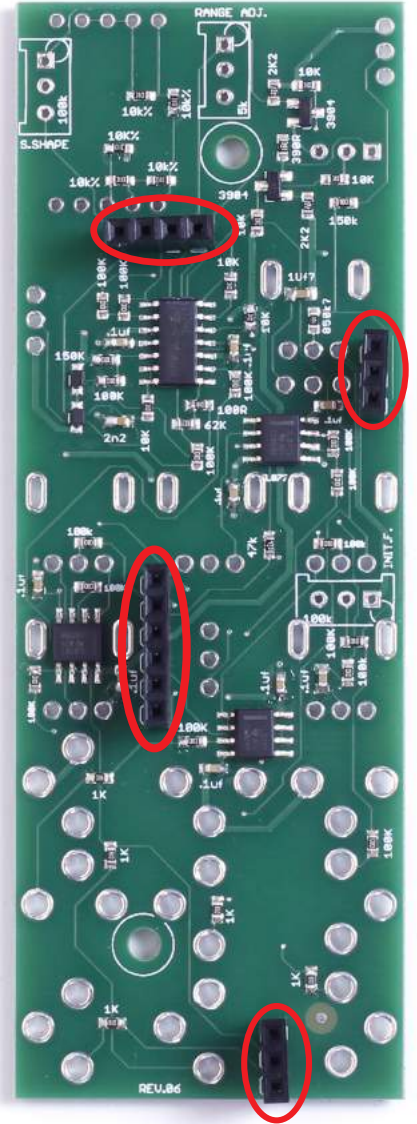
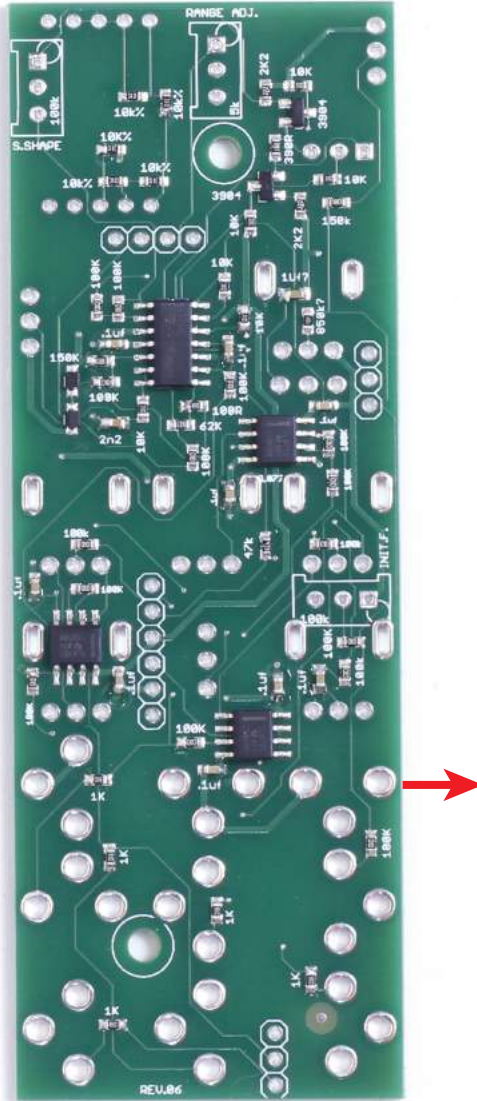
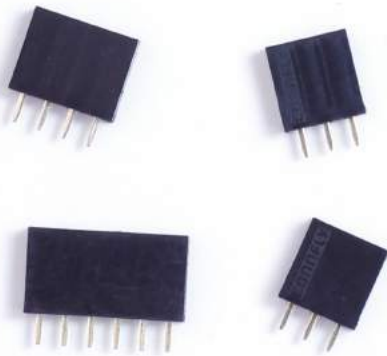
Locate power connector, place and solder it like shown below. make sure the indent is facing right.





STEP 11:

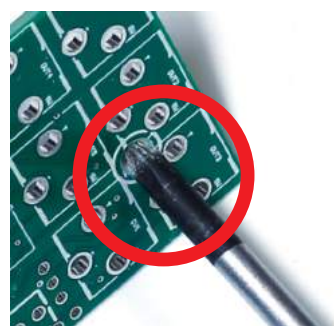
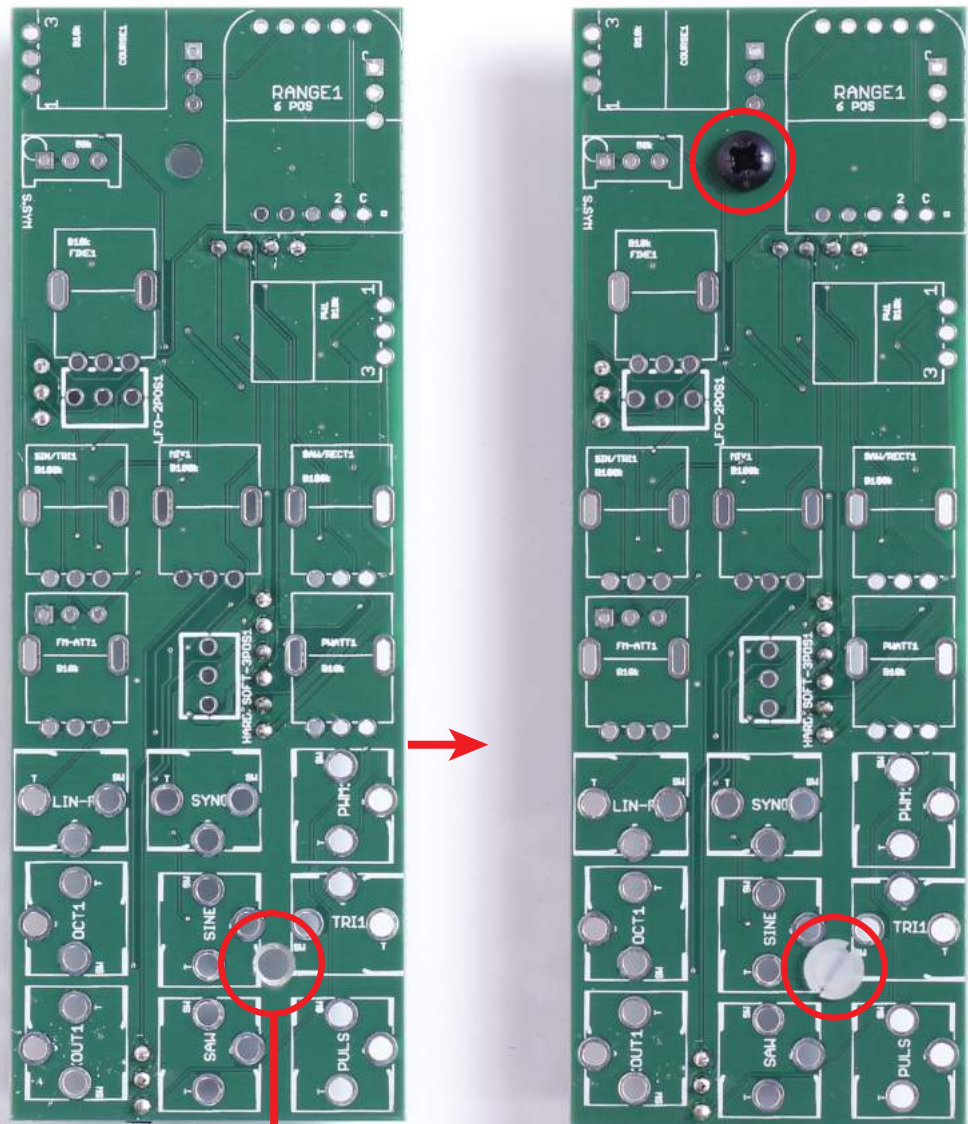
Next we move on to the top pcb, locate it as well as the female pinheaders, place and solder them like shown below.



STEP 13:

Grab the top pcb and with the help of a screwdriver rotate it against the bottom hole to slightly open it creating a V shape. This will allow the plastic screw to sink, as much as possible, into the hole. Locate and place the two spacers into the back of the top pcb.

Please note that the plastic screw goes on the bottom hole.





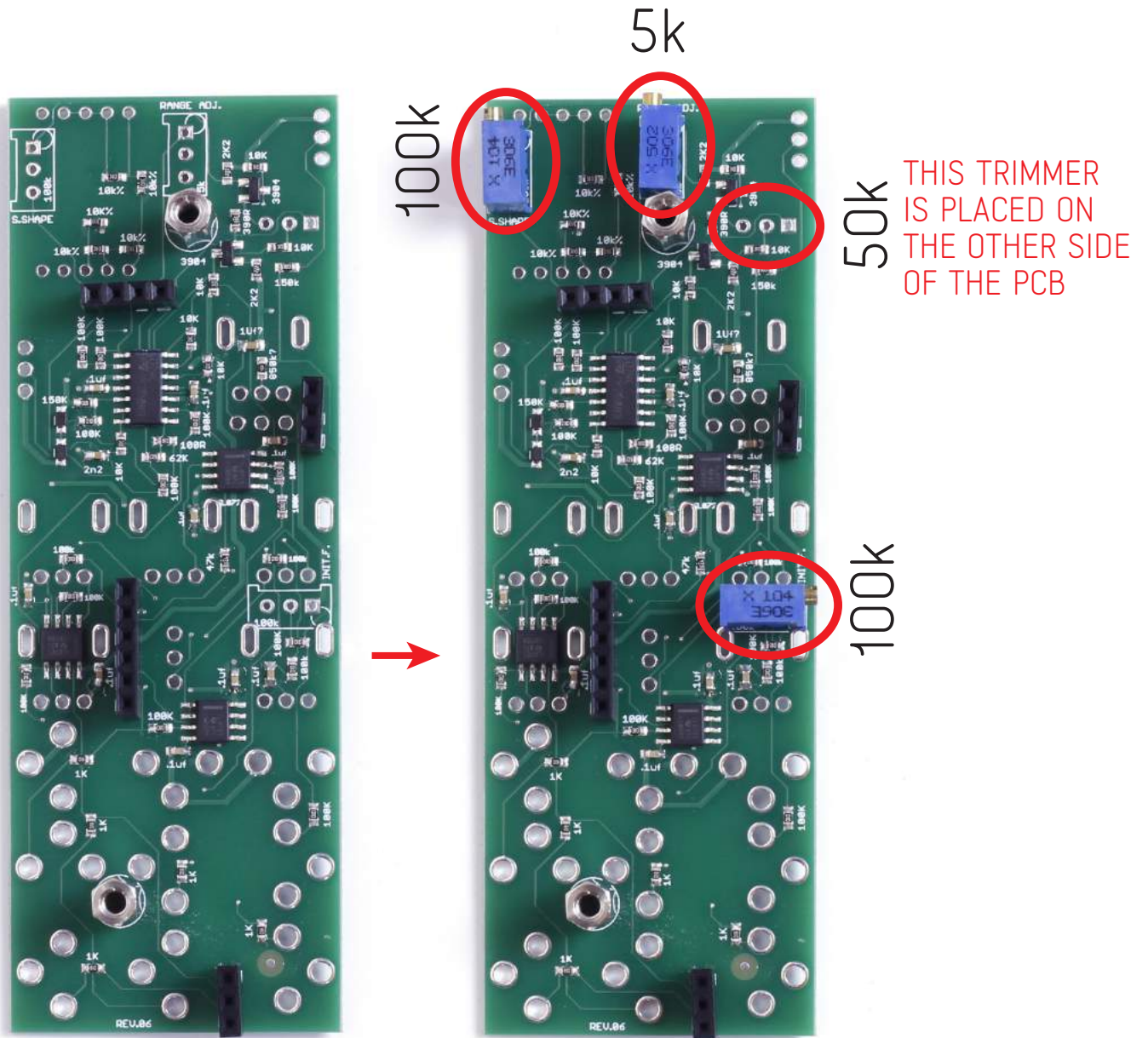
STEP 13:

Last step, locate, place and solder the remaining trimmers like shown below.

502 = 5k

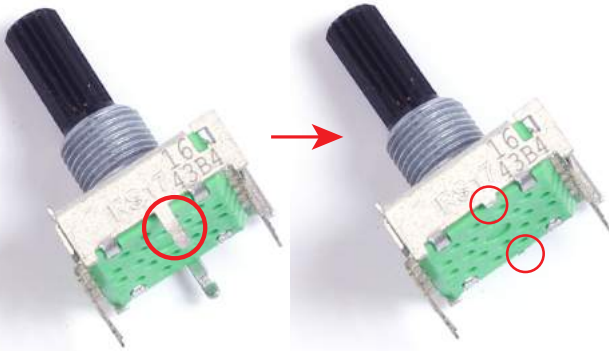
503 = 50k

104 = 100k



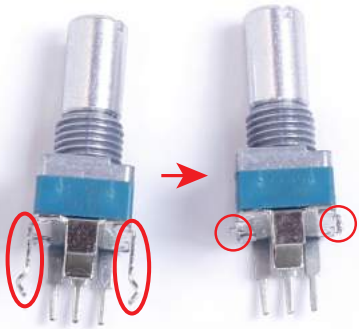
STEP 13:

Next we'll need to prepare some parts before adding them to the front panel. Locate the rotary switch and trim the middle legs like shown below.



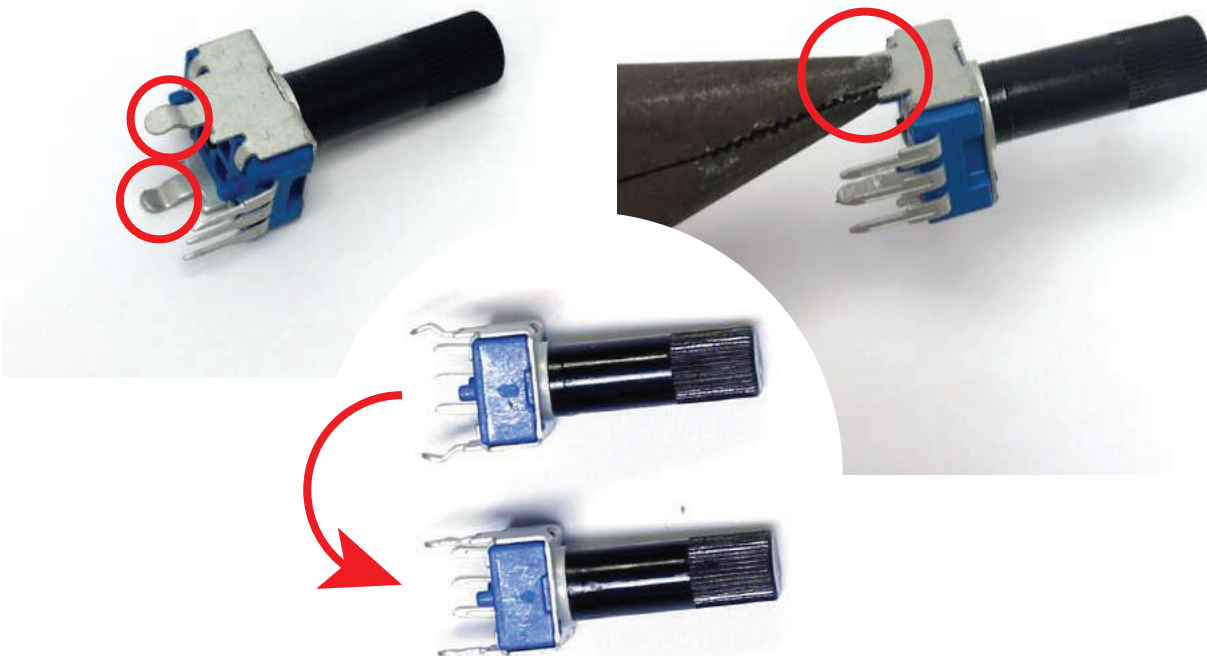
STEP 7:

Locate the two metal shaft pots and trim the middle legs like shown below.

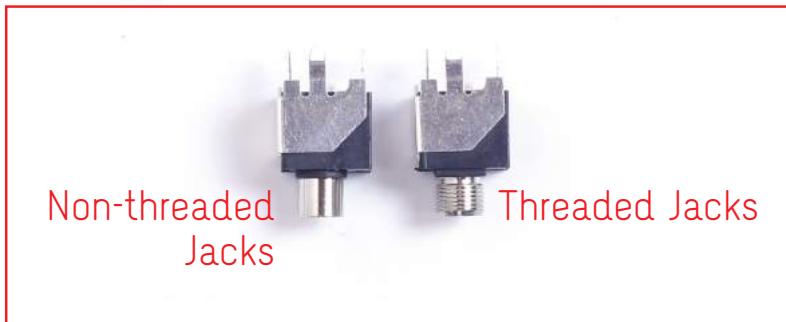
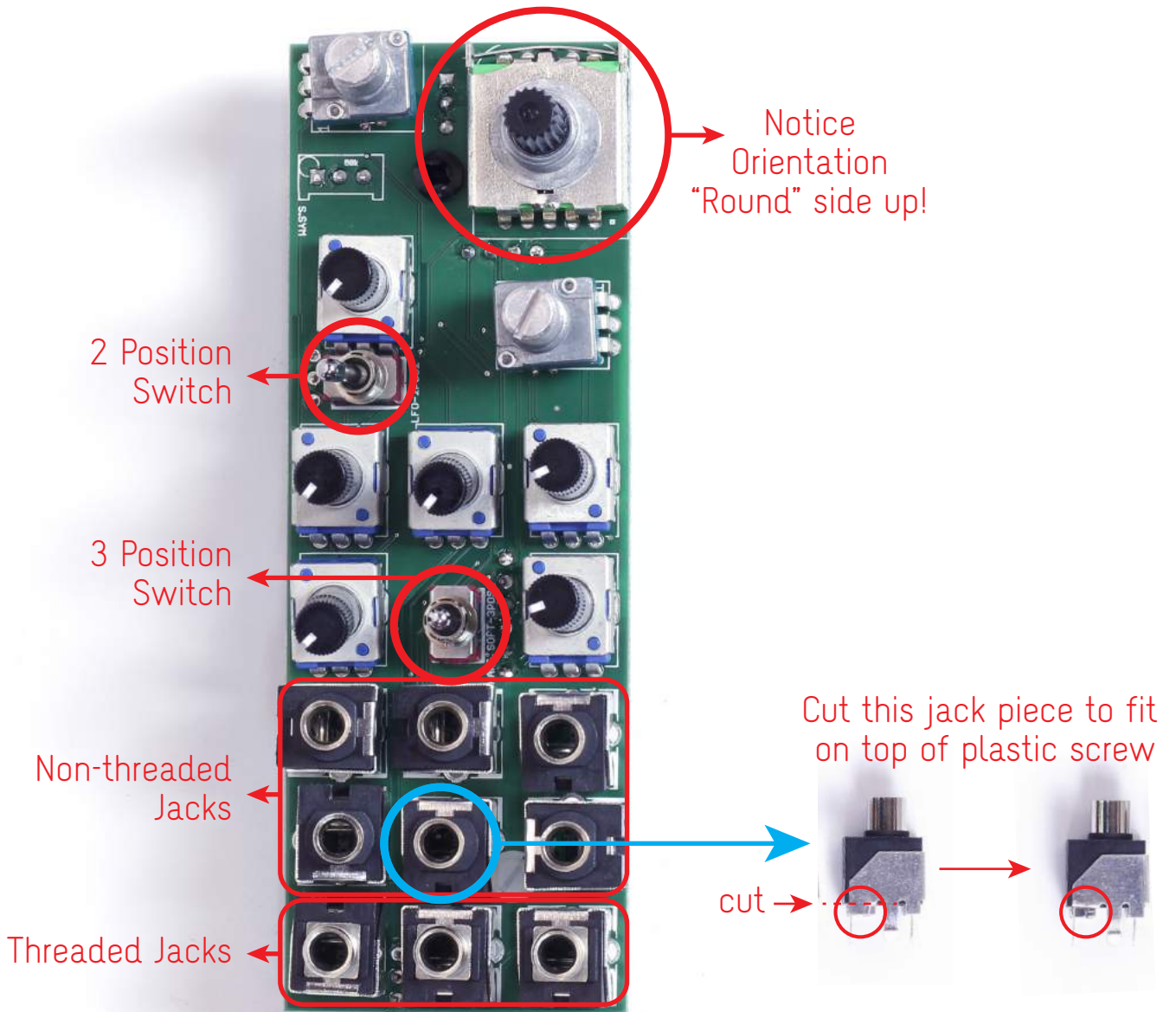


STEP 7:

Grab the plastic shaft trim pots and flatten out their legs with the help of some pliers, like shown below.



STEP 13:  
Now place all parts taking in attention the notes below.  
All pots are B10K.

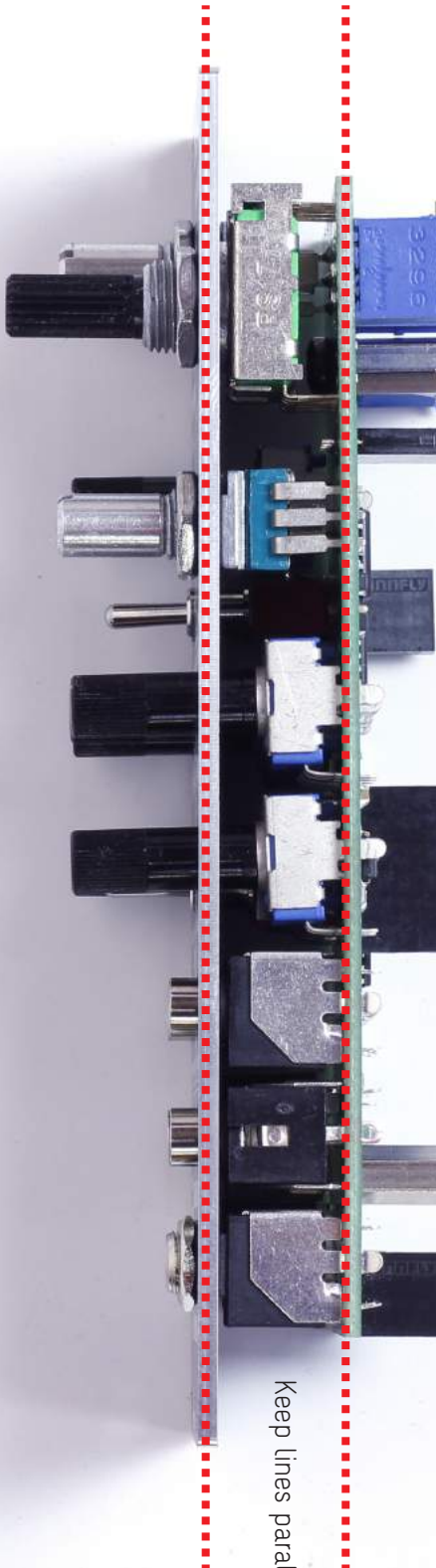




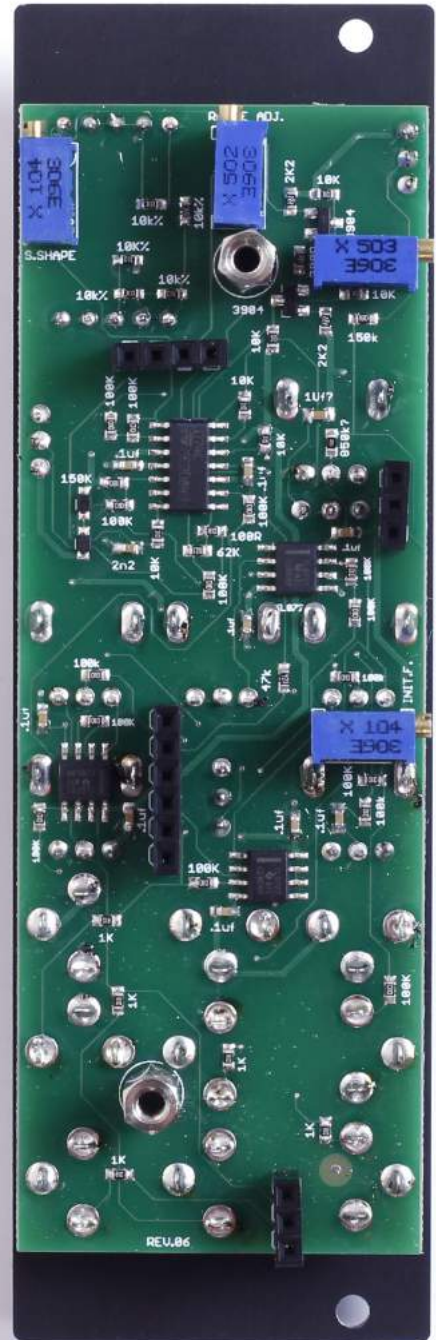
STEP 13:  
Place the panel on top of the parts and tighten the six nuts.



STEP 13:  
Adjust the height of the pcb keeping it parallel to the front panel.  
Solder all parts.

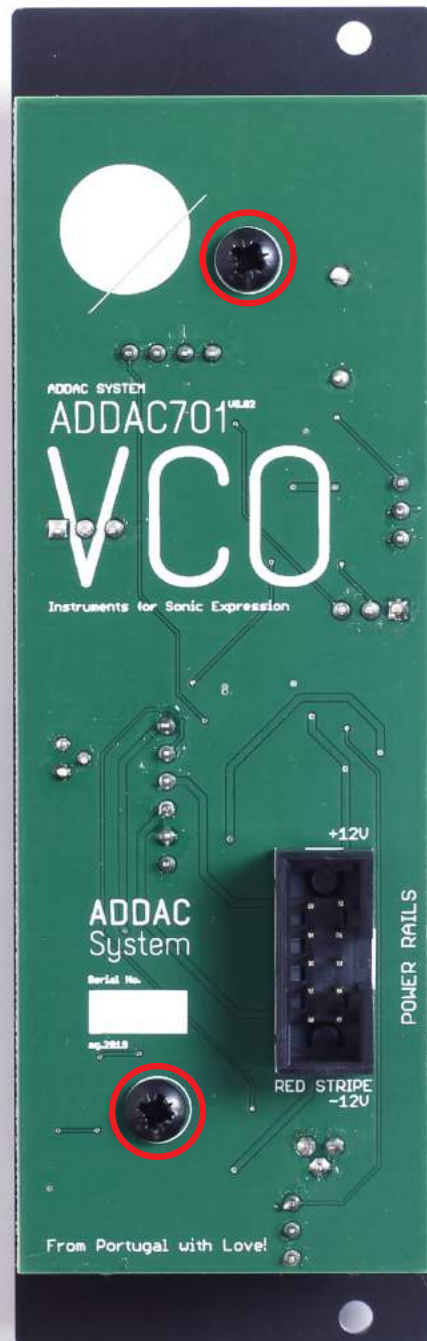


Keep lines parallel



STEP 13:

Last step, close the 2 pcbs together amd place the two bottom screws.





Finish it by placing the knobs and you've finished the assembly process!

Proceed to the calibration method.



# Calibration

## CONSIDERATIONS

For this process you'll need an Oscilloscope, a tuner and a precision voltage source, the precision of both the tuner and the voltage source may have an impact on the overall calibration process.

## INITIAL SETUP

1. Start by setting the "FREQUENCY" knob at "0"
2. Set the "OCTAVE" rotary switch at "0"
3. Set "FINE TUNE" knob at 12 O'clock
4. Set the "INITIAL FREQUENCY" trimmer to the lowest frequency possible.
5. Set the "INITIAL FREQUENCY" trimmer to C1 (32.70Hz).

## TUNING THE 1V/OCT

With a precision voltage from a keyboard or a quantizer (such as ADDAC207 in keyboard mode) plug it to the 1v/oct input.

1. Feed 0v, tuner frequency should be C1 (32.70Hz)
2. Feed 3V, tuner frequency should be C4 (261.63Hz)
3. Calibrate the "SCALE" trimmer to match a perfect C4.
4. Feed 0v, the tuner frequency should be C1, if so skip next step otherwise follow to the next step.
5. Adjust "FINE TUNE" knob to match a perfect C1 and go back to Step 2.

Be aware that you may need to go through this loop, (steps 2 through 5) several times. Each time you'll notice less and less drift.

## FINE TUNING HIGHER FREQUENCIES

1. Feed 0v, tuner frequency should be a perfect C1.
2. Feed 5V tuner frequency should be a perfect C6, if so skip next step otherwise follow to the next step.
3. Calibrate the "HIGH FREQUENCY CALIBRATION" trimmer to match a perfect C6.

## TUNING C1

Set the "FREQUENCY" knob at "0" and "FINE TUNE" knob at 12 o'clock. Feed 0V to the 1v/oct input and set the "INITIAL FREQUENCY" trimmer to C1 (32.70Hz).

## TUNING THE RANGE SWITCH

Unplug any source that is connected to the 1v/oct input and set it to a perfect C1.

Turn the frequency switch to "+5" and trim the "Range ADJ" trimmer to C6 (1046.50Hz).

## TRIMMER LOCATIONS



TOP PCB

BOTTOM PCB

# Sine Calibration

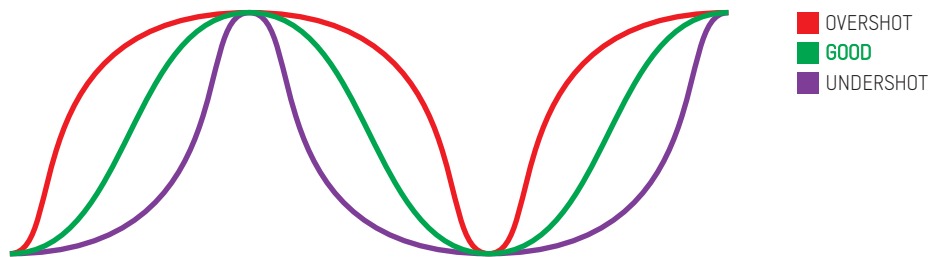
## CALIBRATING THE SINE SYMMETRY

1. Connect the "Sine Output" to an oscilloscope
2. The "Sine Symmetry" trimmer acts like an Offset for the Sine center position adjust it until you have a symmetrical shape between the positive and negative side.

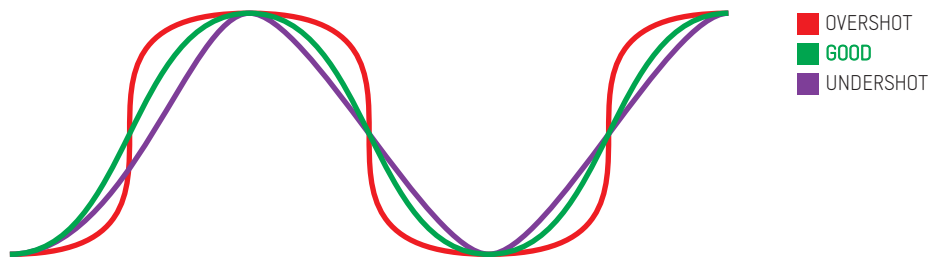
## CALIBRATING THE SINE SHAPE

3. The "Sine Shape" trimmer acts like a a linear to log/exp converter from the triangle waveform, too much and you get something close to a square wave, too little becomes closer to the initial triangle. As you tune it closer to the typical sine waveform you'll hear the undesired harmonics disappearing.

While all other instructions in these callibration instructions have very precise settings, the Sine Shape can be calibrated to the user's preferred timbre, so look at the sine on the oscilloscope make sure it's close to perfect and leave it at that sweet spot where your ears tell you to.



SINE SYMMETRY



SINE SHAPE



For feedback, comments or problems please contact us at:  
[addac@addacsystem.com](mailto:addac@addacsystem.com)