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SOUND FLASK

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BUILD GUIDE

www.soundflask.com

Crucible – Rev 1.0

In general, I populate my boards in the order of the BOM. I like to get the ICs out of the way while the board is empty and easier to work with.

Use flux to make the solder flow. I use a flux pen on almost every component. This can get messy so be sure to also clean the flux off with 99% isopropyl alcohol and cotton swabs. I learned from Ray Wilson that a mixture of ¾ 99% isopropyl to ¼ acetone works well for cleaning off flux.

If you make any solder joints that you are concerned about, figure out where that pad leads to and use a multimeter in continuity mode to check the joint. For example, check the integrity of the pins of an IC by following the trace to the next component (say a resistor) and meter between the pad for the component and the top of the leg at the IC. If your meter beeps, then the connection is good. On some builds, I check for continuity on all the IC legs. If a problem is discovered, it will save me a lot of time. It is much more difficult to discover what the problem is at the end.

Be sure to place the header on the same side of the board as the other components. Place the jacks and the rotary switches last and DO NOT solder them until you have installed the front panel and tightened all the nuts by hand. DO NOT remove the locating tab from the rotary switches. Once you are satisfied with the fit of the front panel, solder all jacks and switches.

Before plugging the module in, check for continuity between +12 and -12, +12 and GND, and also -12 and GND. I check these at the header pins. If there are low ohms readings (less than a few hundred), you may have something 'shorted' on the board.

When plugging in your power cable, remember Doepfer's motto, "Red Stripe Down", but always look for indication of where the red stripe should connect (usually marked with a distinct white line, -12, or the word "red".

Notes about Crucible Rev 1.0

If you want maximum precision, I recommend substituting 0.1% tolerance resistors instead of 1%. I find 1% quite acceptable though.

Once complete, it is important to adjust the trimpot for correct voltage. You should allow 15 to 30 minutes of time after turning on power for the module to warm up. You can either measure the voltage on a cable or connect it to a well calibrated digital oscillator, such as Braids.

If measuring the voltage with a meter, simply rotate the switch through the various settings and attempt to make each one as close as possible to the correct values. It will most likely never be perfect on every single one. You should try to split the difference and get as close as possible. For example, -2 Octave should be -2.000 volts, but you may find it must be -2.009 V in order to make +2 Octave +2.009 V. If you are unable to make an acceptable adjustment here, contact me for help.

The alternate way to adjust the trimpot is to connect only the output of either channel to something like Braids and use a tuner to check the tuning of the VCO. It needs to be a perfectly calibrated VCO for this to work. With the Crucible module set to 0, adjust the VCO to and A note at 220 Hz. Then turn the Crucible Octave switch to -2 and adjust the trimpot until you get 55 Hz on the tuner. Turn the Octave switch to -1 and look for 110 Hz on the tuner. +1 Octave should yield 440 Hz and +2 Octave should be 880 Hz. Adjust the trimpot as needed to strike a reasonable balance between the octaves. You may wish to check it with the other channel as well and adjust again for balance. It will never be 100% perfect, but should be well within tolerable.