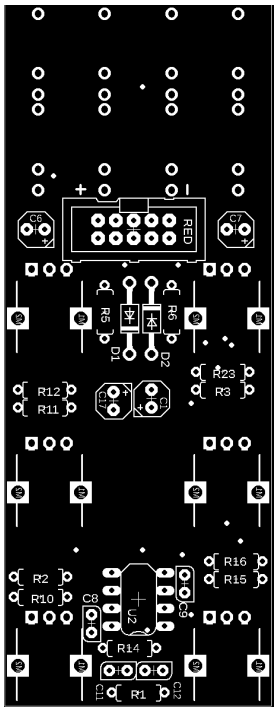
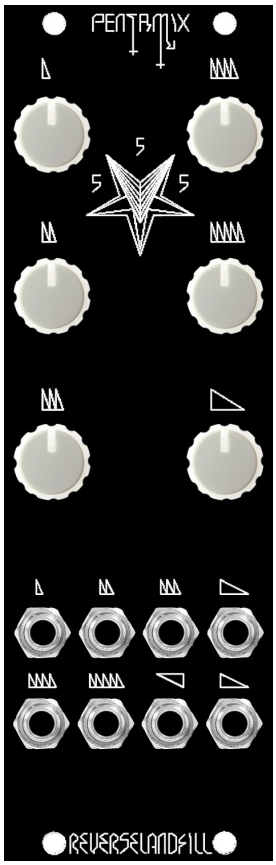
Pentamix v3 Buildguide 2023





Resistors:
Start with soldering these resistors. The value of the resistors are written on the tape.
If you are unsure, use a Multimeter to check the value.

8x 100k : r1, r2, r10, r11, r12, r14, r15, r23
2x 1k : r3, r16
2x 10r : r5, r6 (these are optional, you can also use a link here, for example with resistor clippings)
These were used as fuses to protect the circuit in case of a reversed power cable.
This is now handled by the 1n4001 diodes.

Diodes:
2x 1n4001: d1, d2
These are reverse power protection diodes.
Make sure the black line matches the silkscreen on the pcb.

IC Socket:
Solder the 1x 8pin IC socket to u2. Take care to orientate it properly. The notch on one end should match the silkscreen. First solder just 2 opposite pins and check if the socket is aligned flat to the pcb. If not, slightly press down on the socket and reheat the pins.
Now solder all remaining pins. Leave the IC out for now.

Capacitors:
The 2x 100nF ceramic capacitors are installed 'standing up'.
The electrolythic capacitors have an orientation. The longer leg is PLUS.
There is also a small + sign on the pcb. Make sure you place them correctly!
The value is printed on the side of the parts.
2x 100nF : c8, c9

2x 22pF: c11, c12 (leave these out if you want to mix CV signals)
4x 10uF : c1, c6, c7, c17 (electrolytic)

Power header:
Insert the 10pin shrouded power header in place. This part also has an orientation; the open side. Make sure the part matches the silkscreen marking on the pcb.
Then solder one pin and check if the header is aligned correctly.
If not, slightly press the header and reheat the pin. It should click into place.
Now solder all remaining pins.

IC:
Take the TL072 IC out of the foam. Bend the legs to 90 degrees using a flat surface.
Then insert it while taking care that the notch matches the IC socket (and silkscreen on the pcb)
Press the IC firmly into the socket.

Take a break! Drink some tea or go outside :)

Potmeters and jacks:
Flip the pcb and insert the potmeters into the pcb. Also insert the jack sockets. DON'T solder yet!
Now place the panel. Use one or two nuts to hold the panel in place.
Now solder one pin of each pot and jack. Remove the panel and check if the pots are aligned.
The jacks might be slightly raised from the pcb. Don't worry about them, as long as the pins are sticking through, they are fine. If you are unsure, slightly press down on the jack and reheat. It should click flat to the pcb.
If all is correct, continue to solder all pins.

Panel:
Mount the panel to the pcb and secure all the nuts. Carefully tighten them using the correct tools.

Knobs:
Turn all pots fully CCW and place the knobs. Take care that all lines point to the same angle.
Then push them firmly to the pcb, while holding the back of the pcb.

Time to test!
As a last check, look over the pcb and check the soldering, check for shorts and polarity.
Insert the power cable and connect it to your modular system.
Turn on the power. Check if nothing blows! If all is well, proceed:
Turn all knobs CCW and patch an audio signal to channel 1 and patch the output to a mixer
Note: the jack socket with one small triangle icon is input 1
The jacks sockets on the right side with the larger triangle icons are the outputs.

Turn the Gain potmeter fully CW and turn the channel 1 potmeter gradually open.
You should hear the sound fade in from silence to full volume.
If this works correctly, test remaining channels.
Test all three audio outputs. The inverted output will sound the same.
Refer to the sound manual for patch ideas and a guide to all functions.

Troubleshooting:
Check the orientation of the IC, the polarised capacitors, the power header.
Did you insert the IC? Check the soldering. reflow pins if needed.

MODS: use b10k (linear) potmeters and leave out c11 and c12 for mixing CV signals

www.reverselandfill.org
martijn@reverselandfill.org