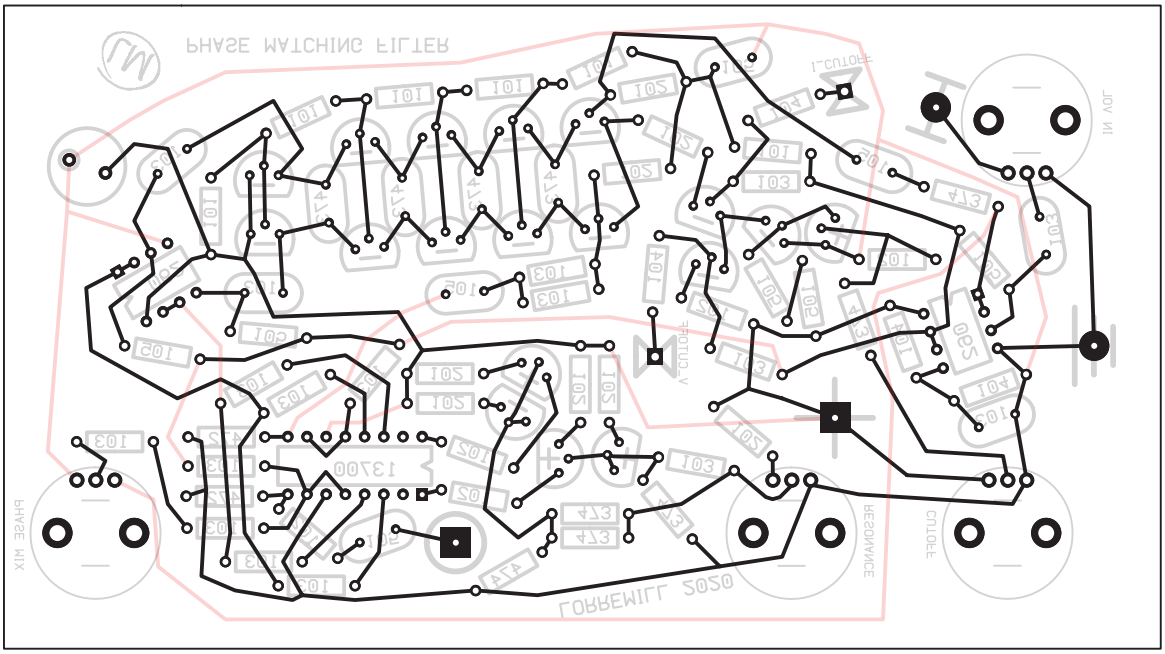
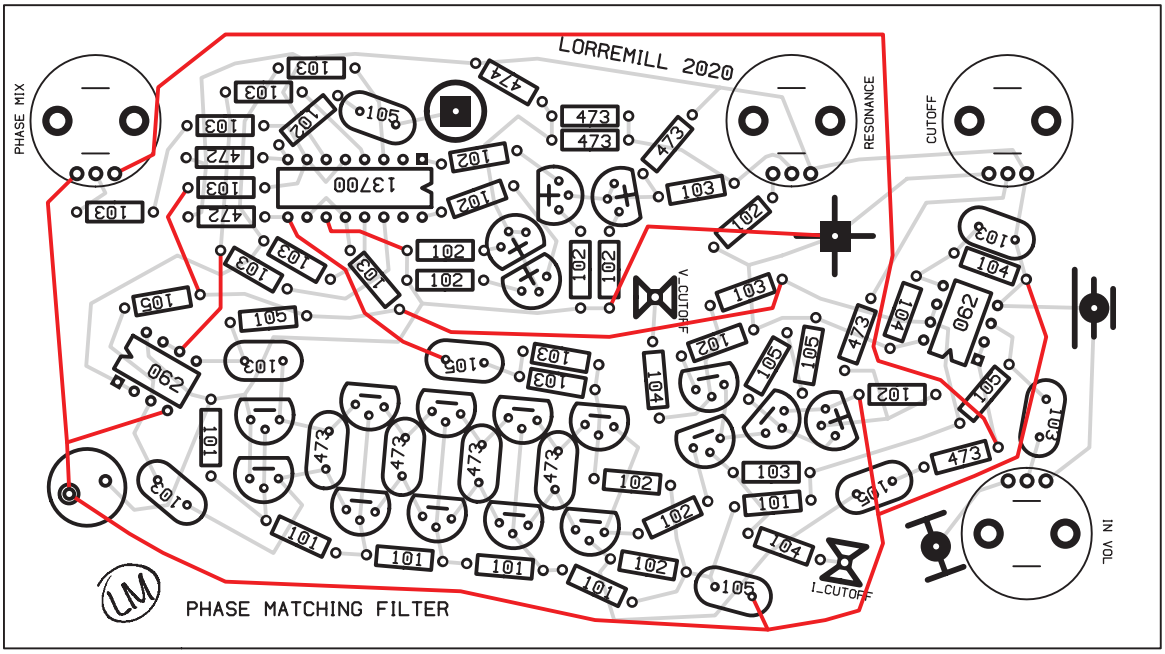
Phase Matching Filter LM 2020

The signal passing in is coupled so as to remove very low frequencies (DC...lol). Then, passed into one side of the ladder arrangement so famously invented by Bob. Up through the ladder we climb. At the top the differential signals are plucked from the emitters of the top two NPN transistors. These again coupled and fed to impedance converters. Low impedance versions of the differentials are given to two OTAs. One OTA does the job of feeding an inverted version of the filter output back to the opposite side of the bottom of the ladder. The other OTA makes the output of the filter. Knob labeled resonance acts on both amps through current mirrors. Knob labeled phase mix will add in the original signal to the final output buffer. If the filtered signal and the original signal are mixed in equal amounts the response of the filter flips to be a highpass. This filter design is known for wide variance in volume with changes in resonance, to achive the phase mix trick the output volume is partially controlled by the resonance knob.





2N3904

Other dual opamps may be substituted but make sure they are JFet input type. 062s were chosen for low current consumption. 105 caps are 1uF

2N3906