9730 VCF – Resistor Addition to Minimize Oscillation

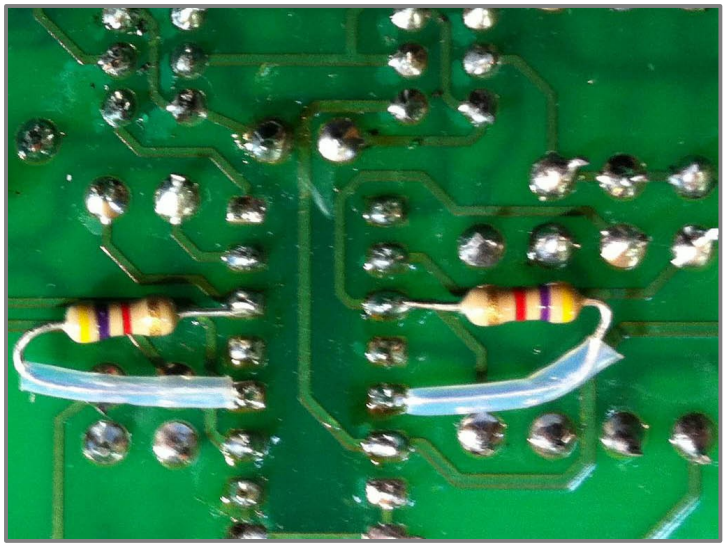
Adding a 4700ohm resistor to link the output back to the non-inverting input of the amps in the resonance sections of the 9730 VCF works to improve stability, minimizing the occurrence of oscillation due to lack of headroom in pass band or Fc.

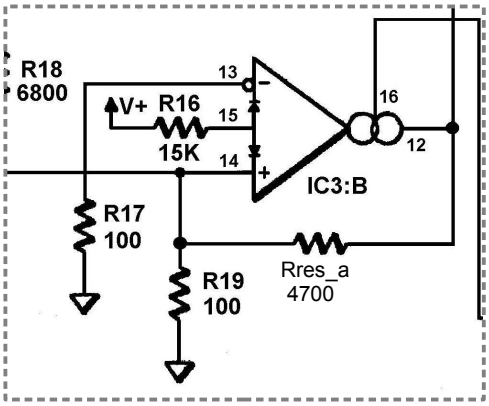
Boost of the input signal can be quite high for increased Q control settings and when the input is from the high-level outputs of the VCO, the filter can only go to a limit as set by the power supply voltage and then operating conditions change such that clipping and oscillation occurs.

Tack solder 4700ohm resistors to link pins 5 to 3, and, 12 to 14 of IC3. Notice in the image below, some insulating sleeve is covering the long ends of the resistors to protect them from contact with nearby, unassociated solder joints.

This change causes the load on the output of these amp stages, which vary the amount of resonance, to be more consistent for increased stability.

It is also important to set the scale trims according to the instructions, for v/oct scaling. The linear to exponential converter sections vary current flow for CV inputs, including the panel Fc control, and when the trim is set so the transfer is steep, stability suffers. More CW settings of these trims ensures the transfer is at the beginning and entry of the transfer curve.





The schematic section at the left shows the added 4700ohm linking the output pin 12 back to the non-inverting input pin 14 for VCF section A. It is the same for section B, and IC3:A pins 5 and 3.