

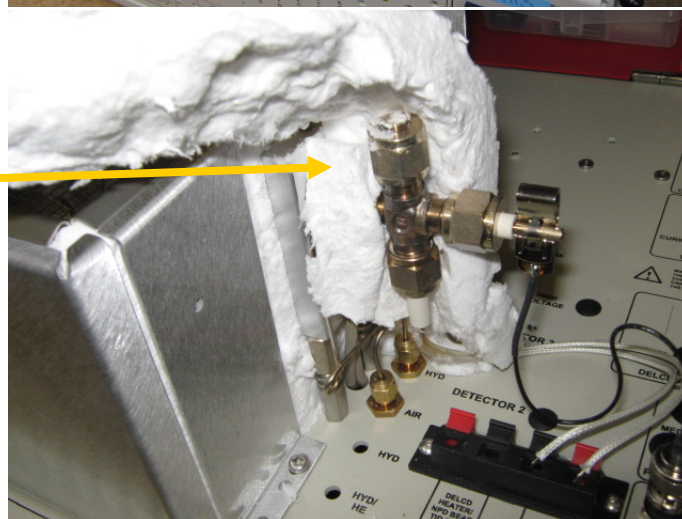
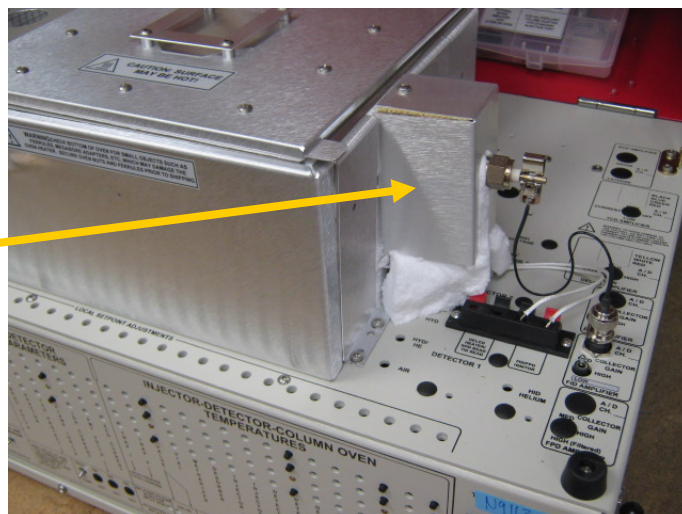
NPD to FID conversion on SRI 8610C or 310C GC July 2012

Unplug GC from wall power

The SRI 8610C GC is shown at right. The NPD detector will be located at the right side of the column oven covered with an insulated aluminum box.

Remove the single screw holding the box in place and then carefully remove the white insulation. The insulation is spun glass fibers, not asbestos.

Loosen the air supply tubing using a 5/16" wrench.



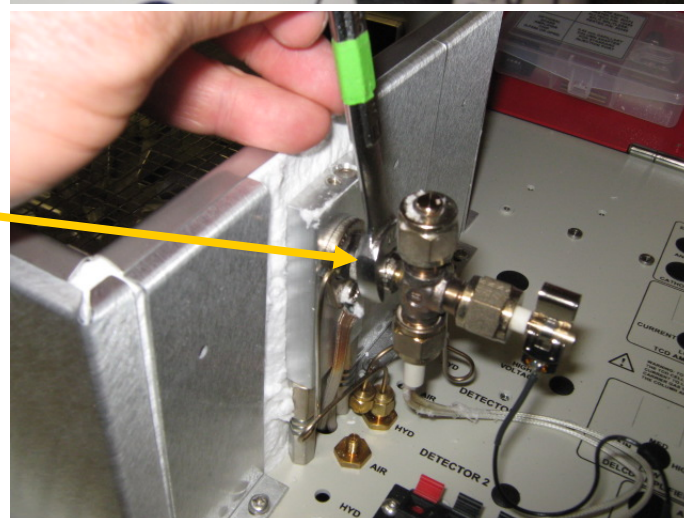
NPD to FID conversion on SRI 8610C or 310C GC

Remove the BNC connector by twisting and lifting.

Un-plug the two NPD bead heater wires.

Use a 7/16" wrench to loosen the NPD body from the makeup gas bulkhead.

Pull the entire NPD detector body out of the makeup gas bulkhead by sliding the NPD body to the right.

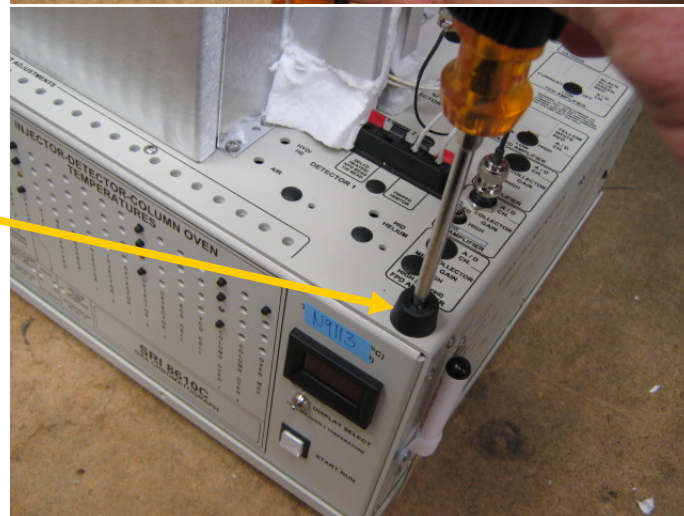


NPD to FID conversion on SRI 8610C or 310C GC

Remove the six Phillips head screws which hold the GC bottom cover on to the chassis.



Remove the two Phillips head bumpers located at the two front corners.



Using a 5/64th inch hex wrench, remove the two button head screws from the top front surface of the GC chassis.

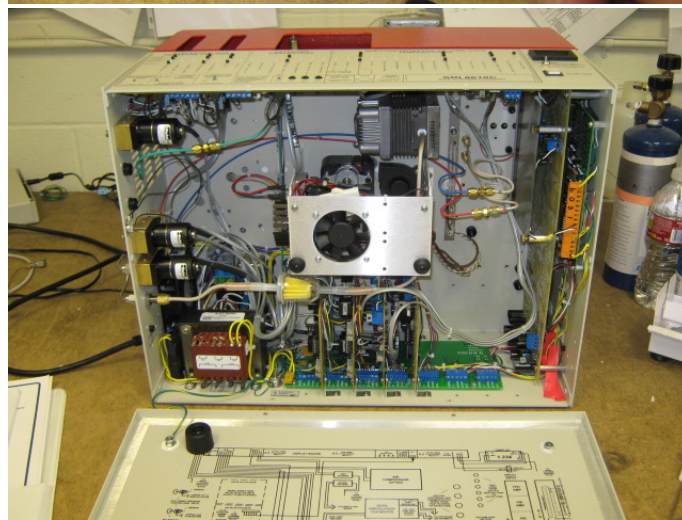


NPD to FID conversion on SRI 8610C or 310C GC

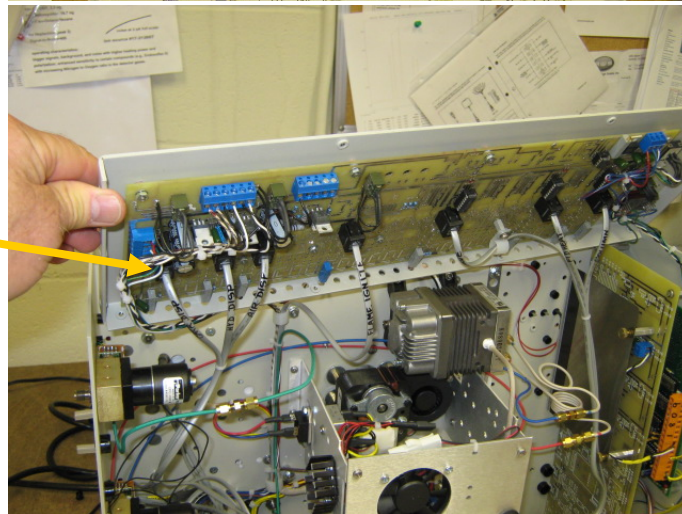
Remove the six button head screws (3 on each side) which hold the GC front cover on to the chassis.



Tilt the GC on its back to expose the inside.

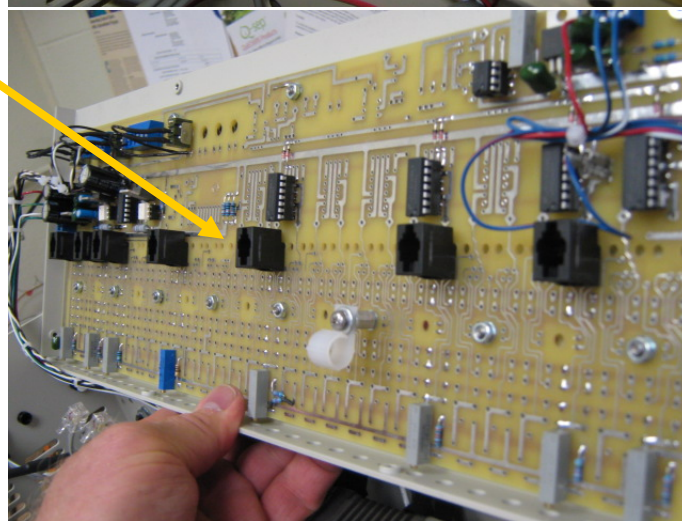
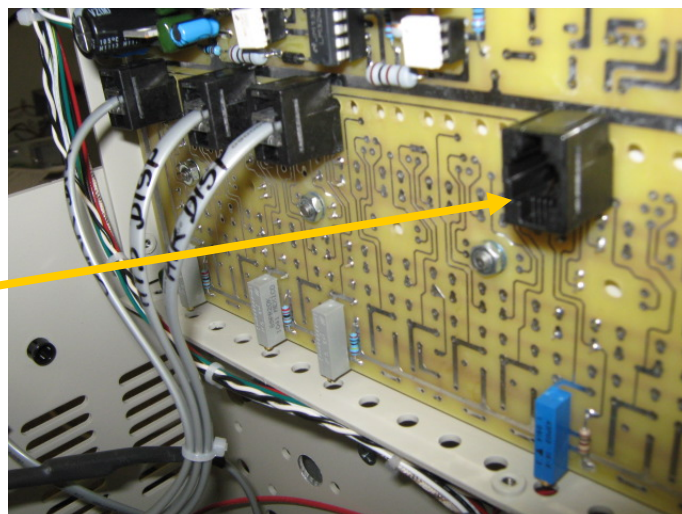


The front panel and circuit board (display board) will now be accessible.

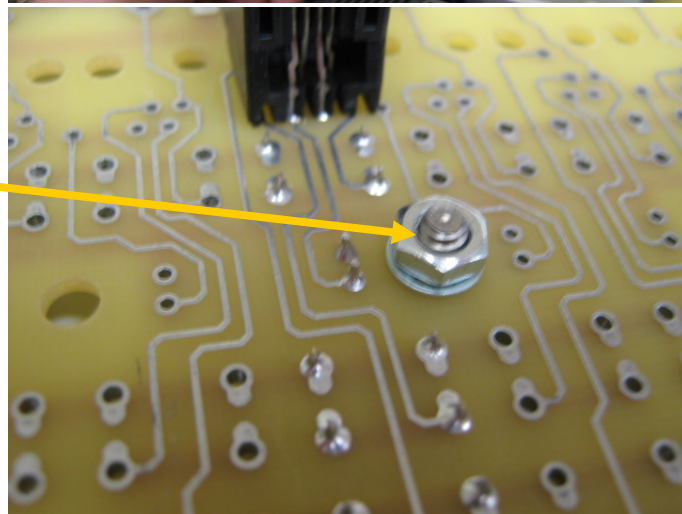


NPD to FID conversion on SRI 8610C or 310C GC

The display board has multiple telephone style jacks. The existing wires should be labeled, but make good notes before removing all the wires plugged into the various jacks.



The display board is fastened to the front panel with twelve 1/4" nuts and lockwashers.

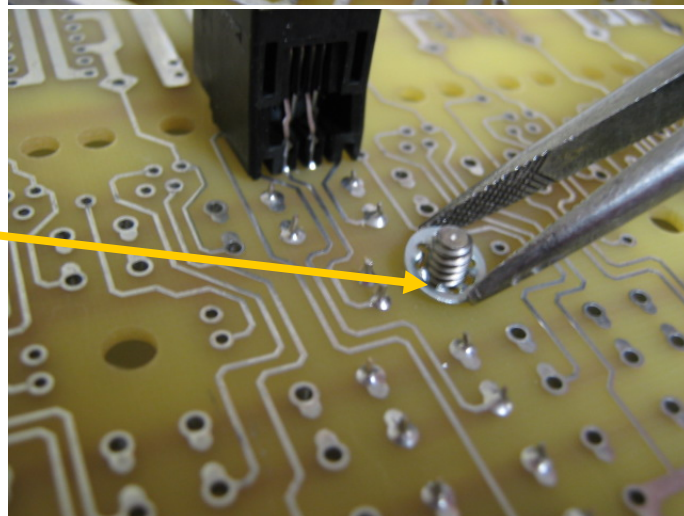
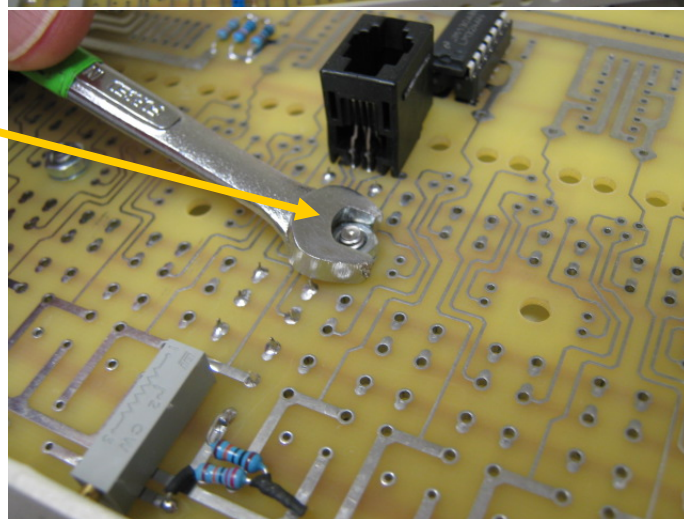
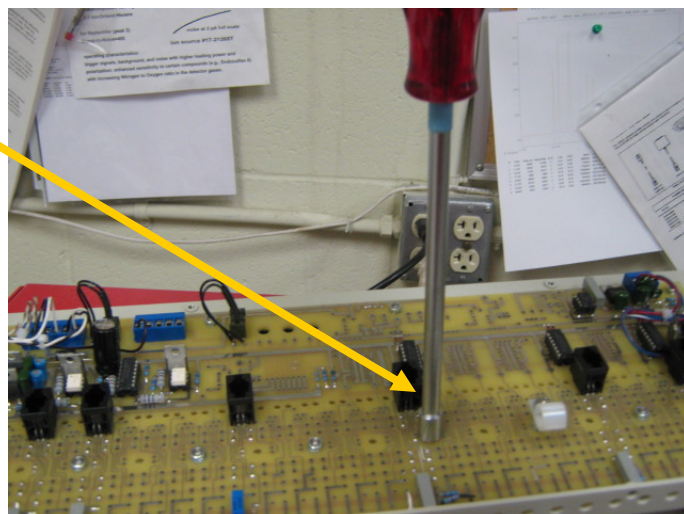


NPD to FID conversion on SRI 8610C or 310C GC

Use a 1/4" nutdriver to loosen each nut.

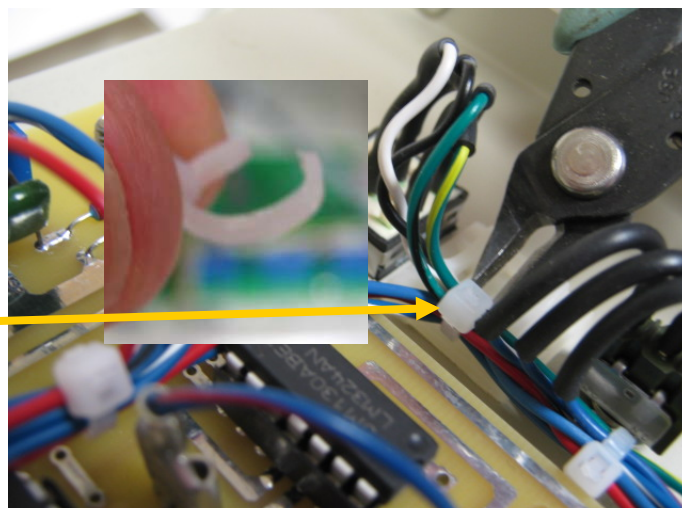
Or use a 1/4" wrench. Be careful not to drop the nuts inside the GC.

Use tweezers or pliers to pick up each lock washer. They are easy to drop.

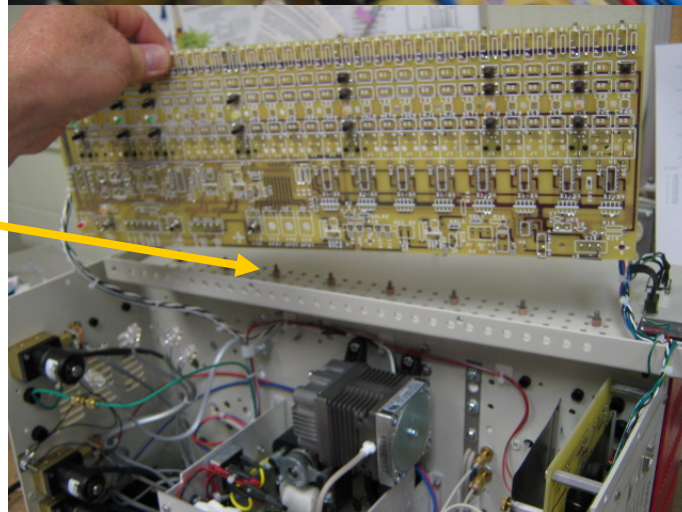


NPD to FID conversion on SRI 8610C or 310C GC

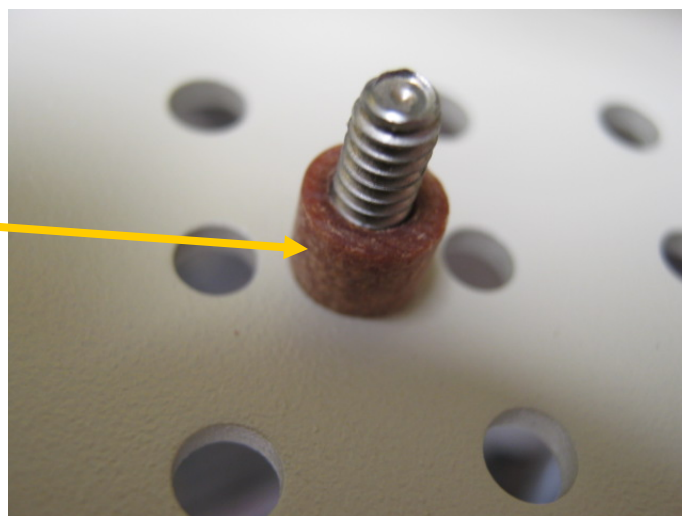
You may need to cut a tie-wrap in the wire bundle at the right side to provide enough slack to lift the display board away from the front panel.



There are 12 fiber spacers which can easily fall off the mounting studs.



Remove these spacers before they fall off inside the GC.



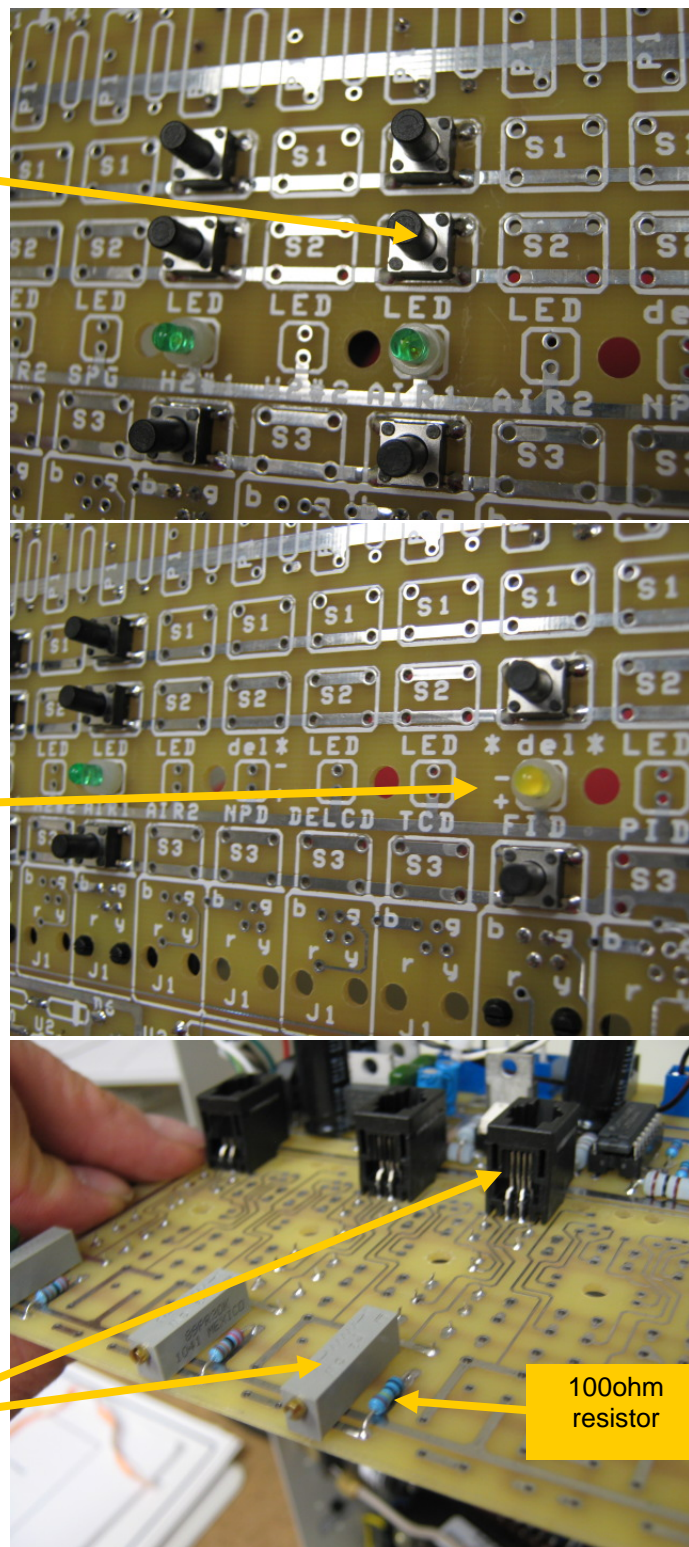
NPD to FID conversion on SRI 8610C or 310C GC

The display board is populated with a number of identical circuits which have 3 tiny pushbuttons and a LED. You can use the existing circuits on the board for comparison to the FID circuit you are about to install.

The existing NPD circuit is identical to the FID circuit except for the value of the pot (500ohms vs 1000ohms). You do NOT have to remove the NPD circuit, simply leave it in place should you later wish to use the NPD again.

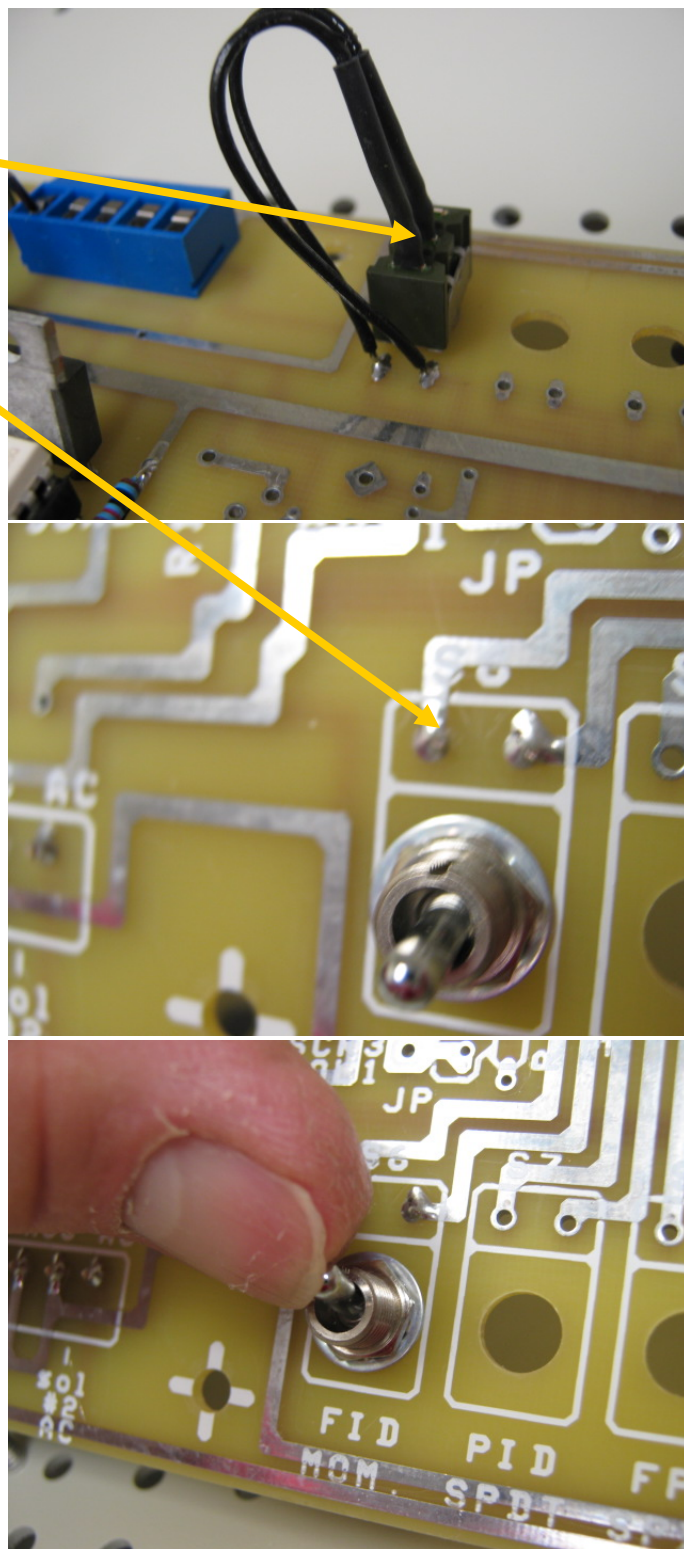
The FID circuit is slightly different in that there are only two pushbuttons and the LED is installed in the opposite direction from the other circuits. You can see on the circuit board the polarity for the LED is silkscreened.

On the opposite side of the display board the telephone jack, 1Kohm pot (potentiometer) and 100ohm resistor are mounted.



NPD to FID conversion on SRI 8610C or 310C GC

The FID circuit also includes a switch with two wires which get soldered into the board immediately above the switch



The switch is a spring loaded momentary switch, so make sure the spring loaded position is facing up before tightening down on the nut which holds it in place.

NPD to FID conversion on SRI 8610C or 310C GC

The electronic parts are shown at right:

4P4C pin telephone jack

1000ohm pot

100ohm resistor

Momentary switch

Pushbuttons

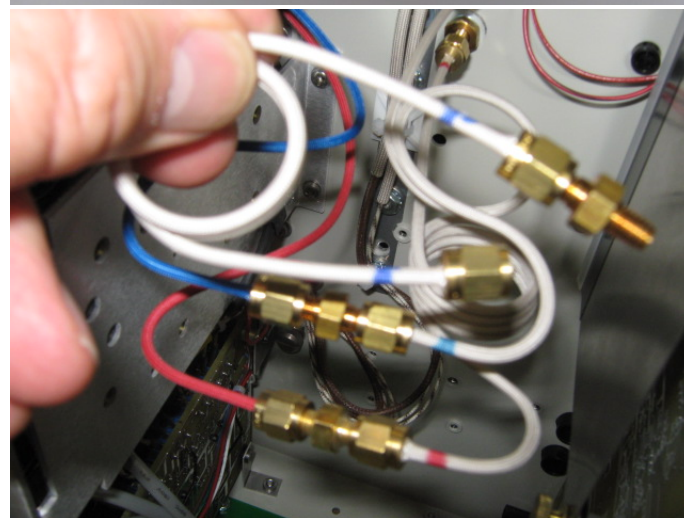
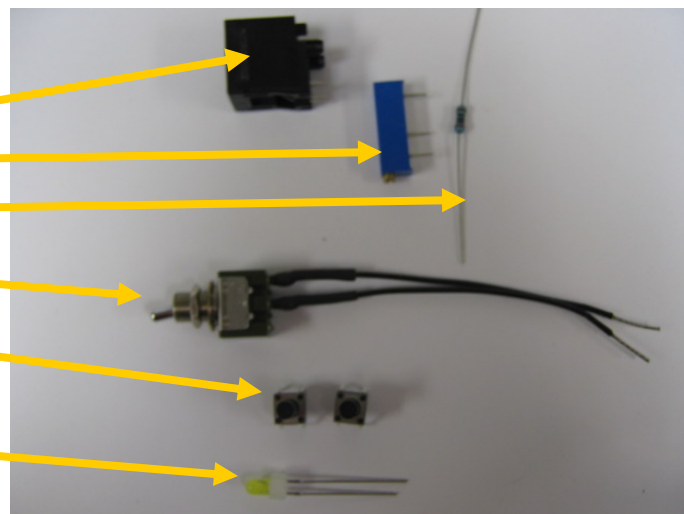
LED

note that the longer leg on the LED is the positive Be sure to install in the circuit board with the correct orientation.

The NPD to FID conversion kit also includes two flow restrictor tubes. The longer one with red markings is the hydrogen restrictor, the shorter tube with blue markings is the air restrictor. The flow restrictors are mounted inside the GC chassis directly below the detector.

Replace the existing NPD flow restrictors with the FID flow restrictors. The FID hydrogen flow restrictor will deliver a flow of 20ml/min with the H₂ pressure set to 20psi. The FID air restrictor will deliver a flow of 250ml/min of air when the Air pressure is set to 5psi.

Make sure all the nuts are tight. Leak check using the pressure drop method described on SRI's website.

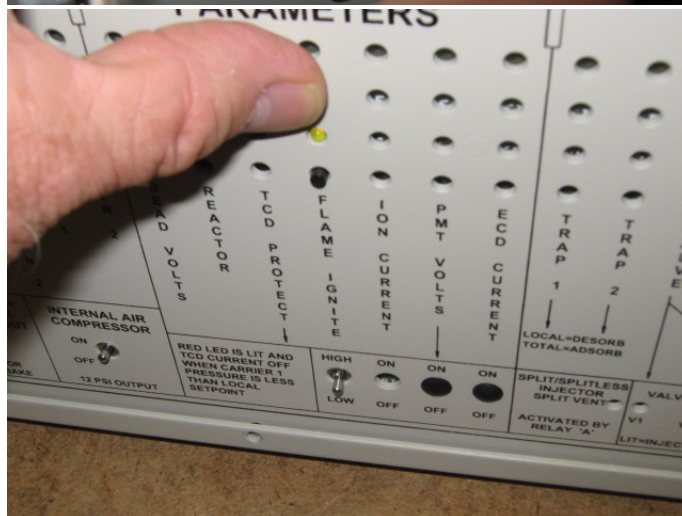
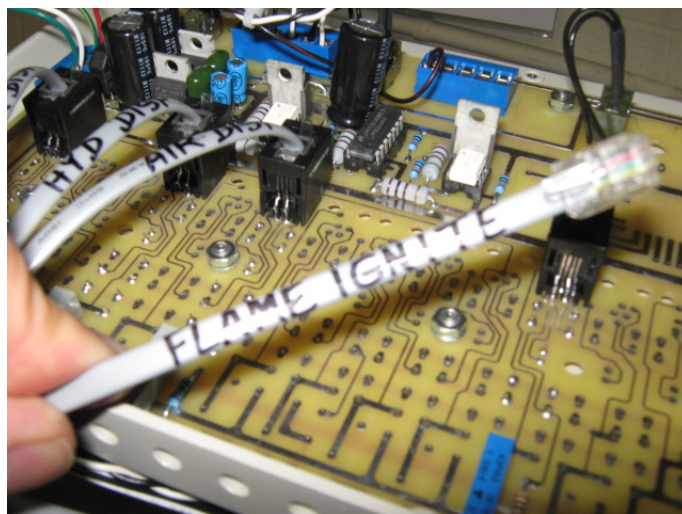


NPD to FID conversion on SRI 8610C or 310C GC

Re-assemble the GC. You can take the telephone cable that used to be connected to the NPD bead circuit and re-label it "Flame Ignite" if you wish, then insert it into the newly installed FID circuit.

Note which two terminals are used to supply the voltage to the NPD bead or FID ignitor. If you wish to change the wire connections you can, but it is not necessary. Just put a sign on the top surface of the GC so you won't forget which terminal to plug the FID ignitor into.

Power up the GC and set the ignitor voltage as desired. Any voltage between 2 and 10 volts is OK. We normally set the ignitor to -800 which means minus eight volts. This is sufficiently hot to ignite the flame automatically and prevent it from going out.



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The ignitor voltage is set to -800
(minus 8 volts).



When the momentary switch is
lifted to the 'UP' position, the igni-
tor voltage rises to its maximum of
about minus10 volts (-1000).



If the ignitor were outside of the
FID detector body it would look like
this when energized with -8 volts.



Verify the correct operation of the
FID per the web documents on
www.srigc.com