

# VICI

## Fast GC Conversion Manual for HP/ Agilent 6890



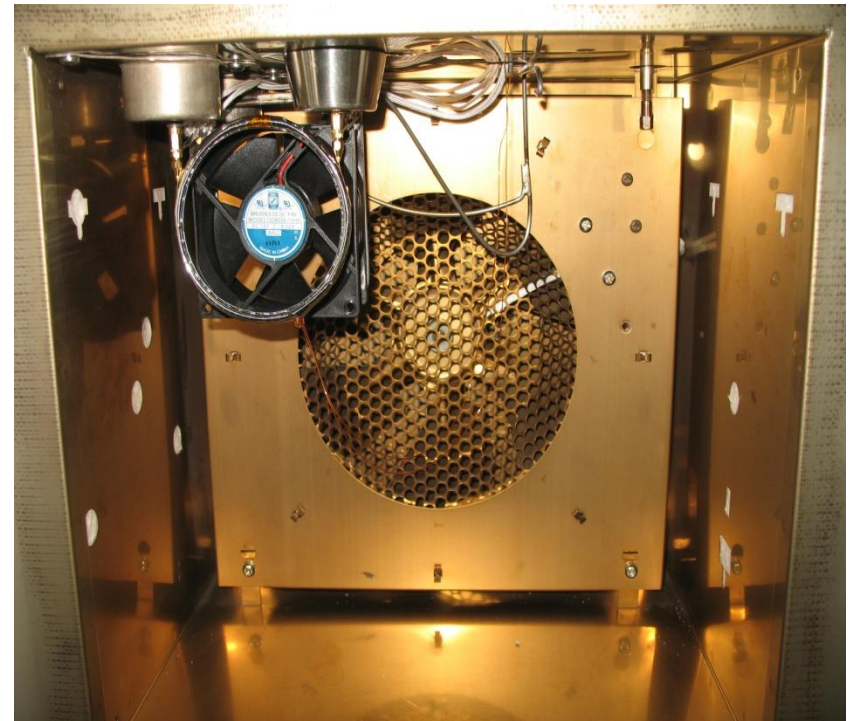
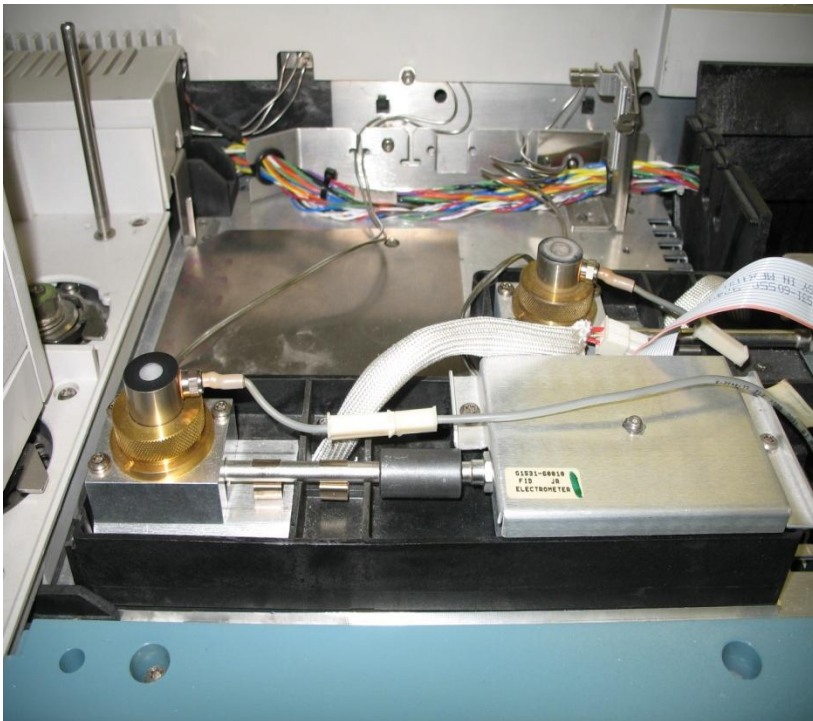
# VICI Fast GC Conversion Kit

- This manual describes how to convert a HP/Agilent 6890 to a “Fast GC” using the VICI Fast GC Conversion Kit. There are many advantages to converting the HP or Agilent GC to a “Fast GC”. An increase in productivity and efficiency is easily attained when using a VICI Clad Column and Fast Column Controller.
- Installation of an adapter plate is required to relocate the detector next to the injector. The conversion can be completed within one hour. This kit includes all necessary tools except an electric drill.

# Conversion Kit Parts List

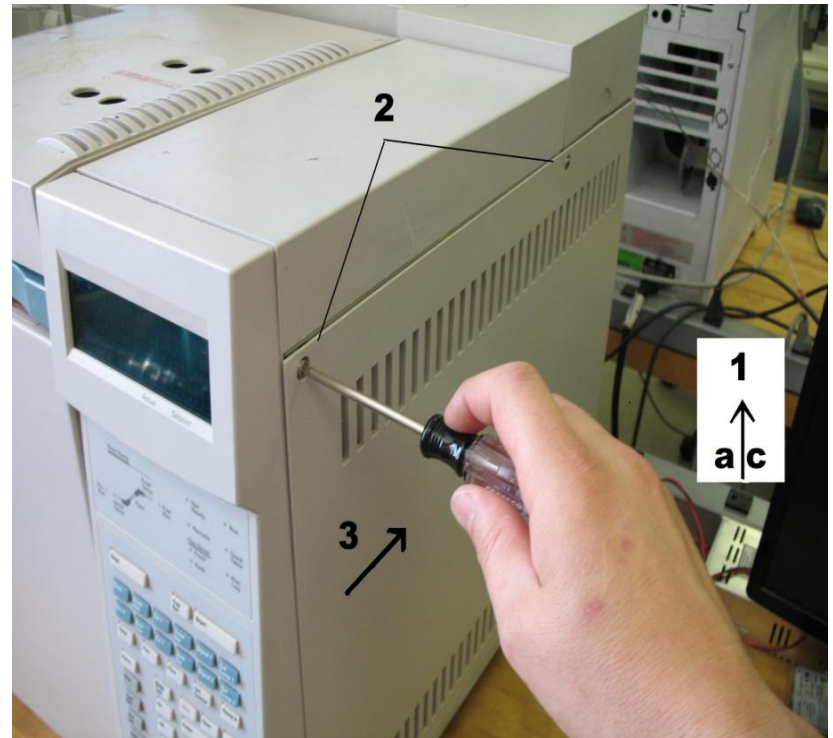
- |    |                                |    |                          |
|----|--------------------------------|----|--------------------------|
| 1  | T15 Screw Driver               | 17 | Fan Extension Harness    |
| 2  | T20 Screw Driver               | 18 | Ground Harness           |
| 3  | (4) 6/32" x 3/4" Screws        | 19 | FID Igniter Harness      |
| 4  | (4) M4 Screws                  | 20 | FID Electrometer Harness |
| 5  | Knife                          | 21 | FID Heater Harness       |
| 6  | FID Guide Block                | 22 | Column Harness           |
| 7  | 3/8" Brad Drill Bit            | 23 | Power Supply Harness     |
| 8  | Cutting Pliers                 | 24 | Power Supply AC Cord     |
| 9  | Hole Saw                       | 25 | USB Cord                 |
| 10 | Metal Wrench                   | 26 | Adapter Plate            |
| 11 | Ruler                          | 27 | Column Controller        |
| 12 | Injector Adapter Fitting Assy. | 28 | Power Supply             |
| 13 | Detector Adapter Fitting Assy. | 29 | Conversion Manual        |
| 14 | Detector Insulation Cup        | 30 | Controller Manual        |
| 15 | Fan Bracket                    | 31 | Column Manual            |
| 16 | 12V Cooling Fan                |    |                          |

Once the FID has been relocated, the GC can accept a small diameter nickel clad column.



# Remove Panels From GC

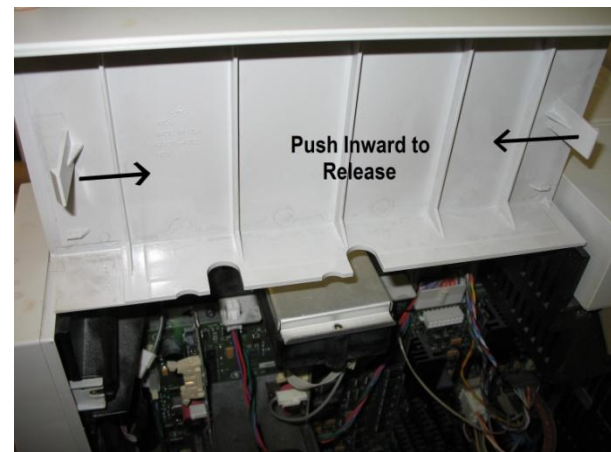
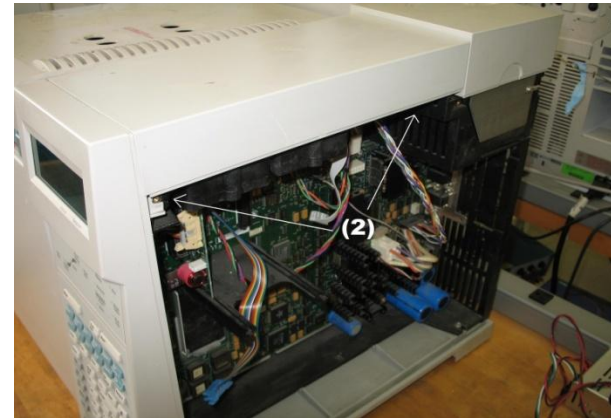
- 1) Unplug GCs AC power cord.
- 2) Loosen the two screws on the side panel.
- 3) Slide panel to rear and remove panel.





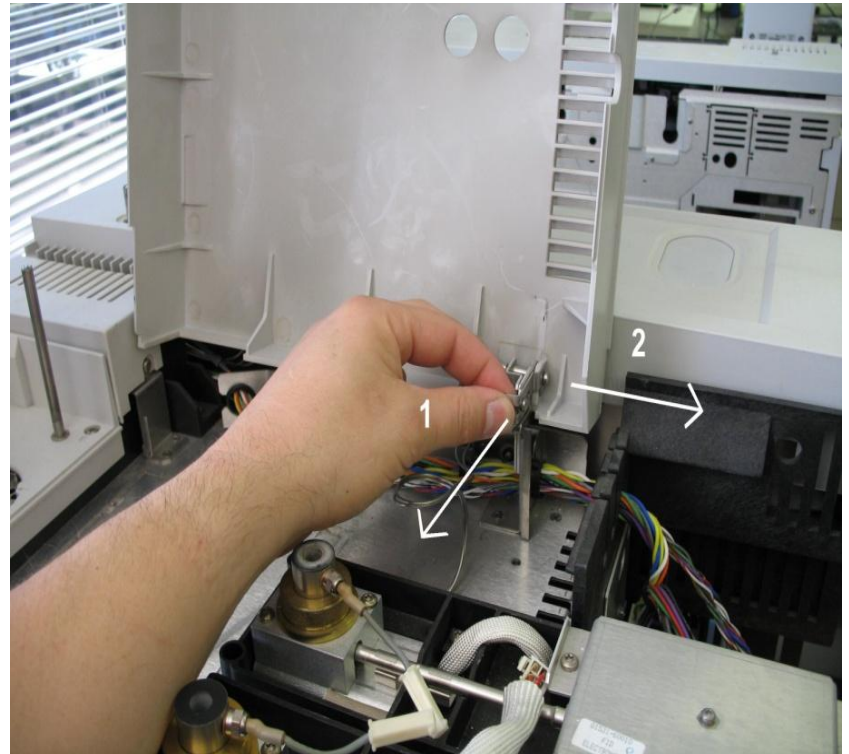
# Remove FID Cover

- There are two tabs (forward and back) holding the FID cover onto the GC.
- 1) Reach under the cover and push the tabs inward to unlatch both ends.
- 2) Lift cover up and remove.



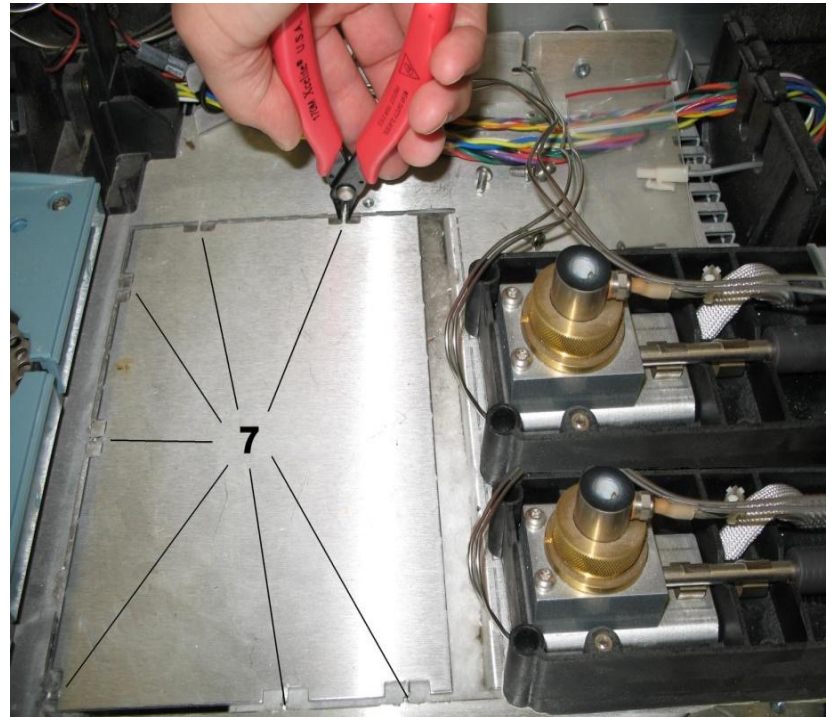
# Remove FID Hood

- 1) Pull metal lock tab forward to unlock hinge.
- 2) Slide lid to the right, then up to remove.



# Remove Deck Plate

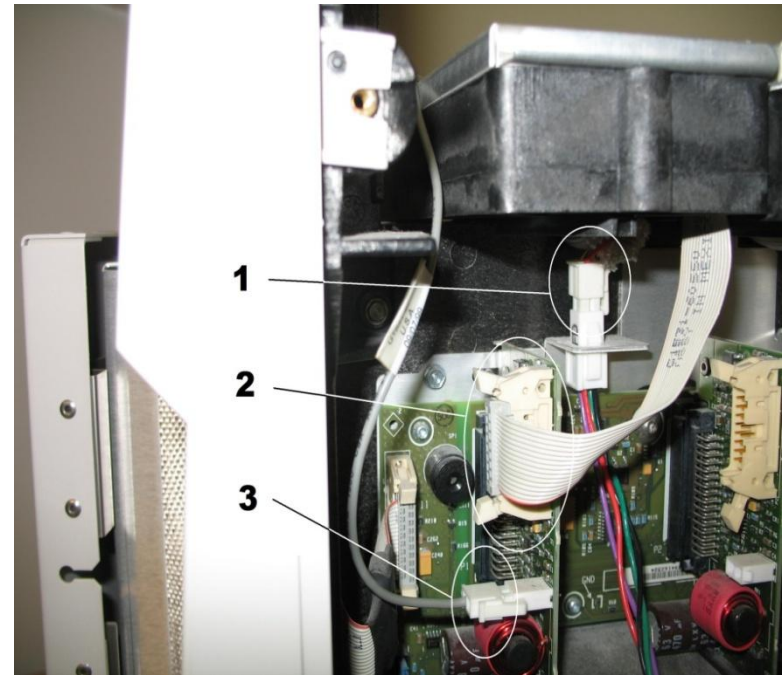
- 1) Use the cutters and cut the (7) tabs holding the cover plate to the GC.
- 2) Remove the plate from the GC to expose the oven insulation.





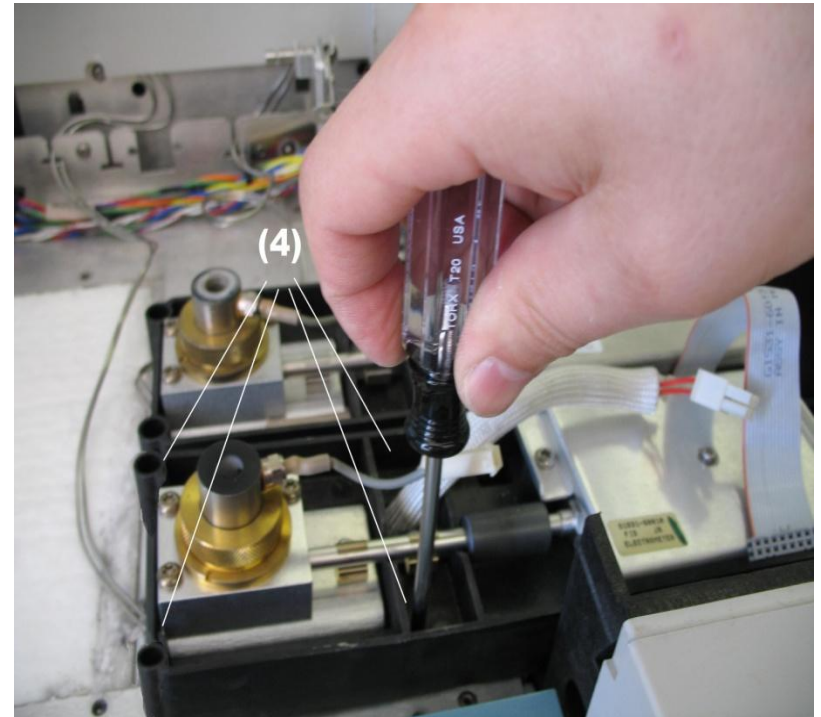
# Disconnect FID Connectors

- 1) Disconnect the three FID connectors from the electrical panel of the GC.
- Extension cords will be connected to the FID once it has been repositioned.



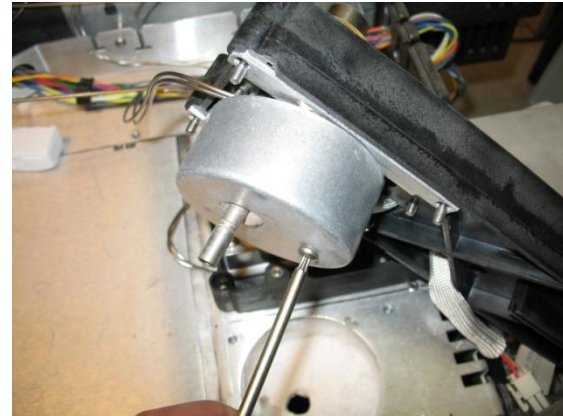
# Remove FID from GC

- Before removing the FID, disconnect and remove old column.
- 1) Unscrew the four screws holding the FID to the GC.
- 2) Carefully lift the FID from the GC.



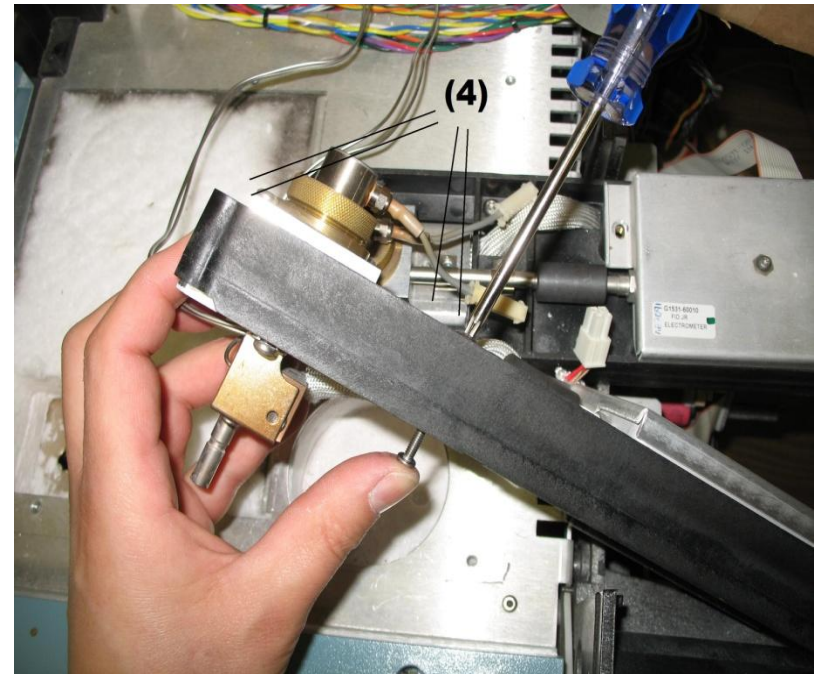
# Remove FID Insulation

- 1) Remove the screw holding the heater cover to the FID.
- 2) Remove the cup and insulation from the FID and set the FID aside.
- 3) Keep the insulation intact for later use.



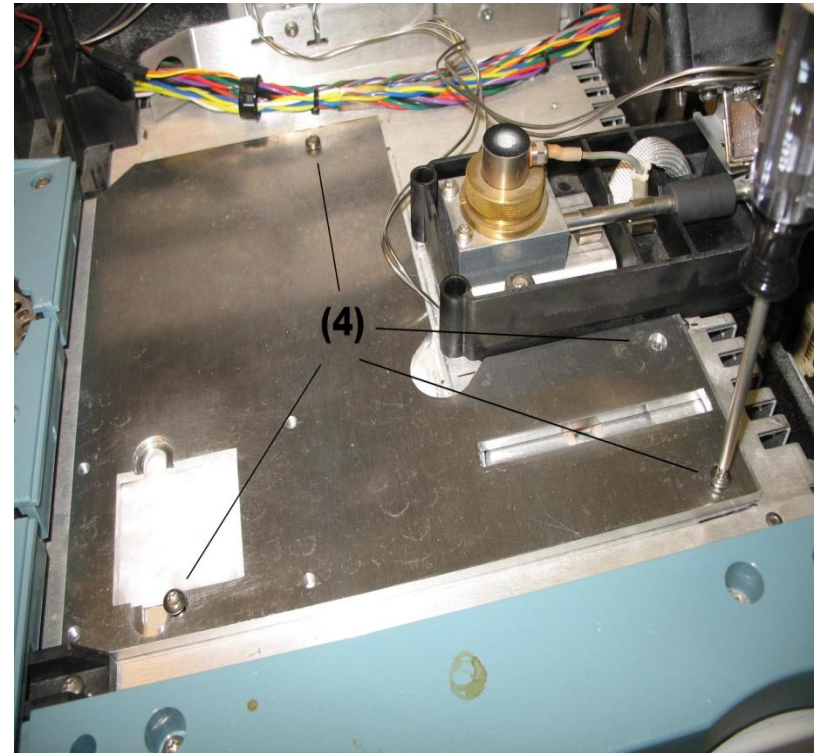
# Remove the FID Fasteners

- It is necessary to remove the four pallet mounting screws from the FID pallet.
- 1) Take a 6/32" x 3/4" screw and push up on the bottom of the pallet screws. Unscrew the four M4 screws from the pallet.
- 2) Save the old screws to replace the FID to its original position.



# Install Adapter Plate

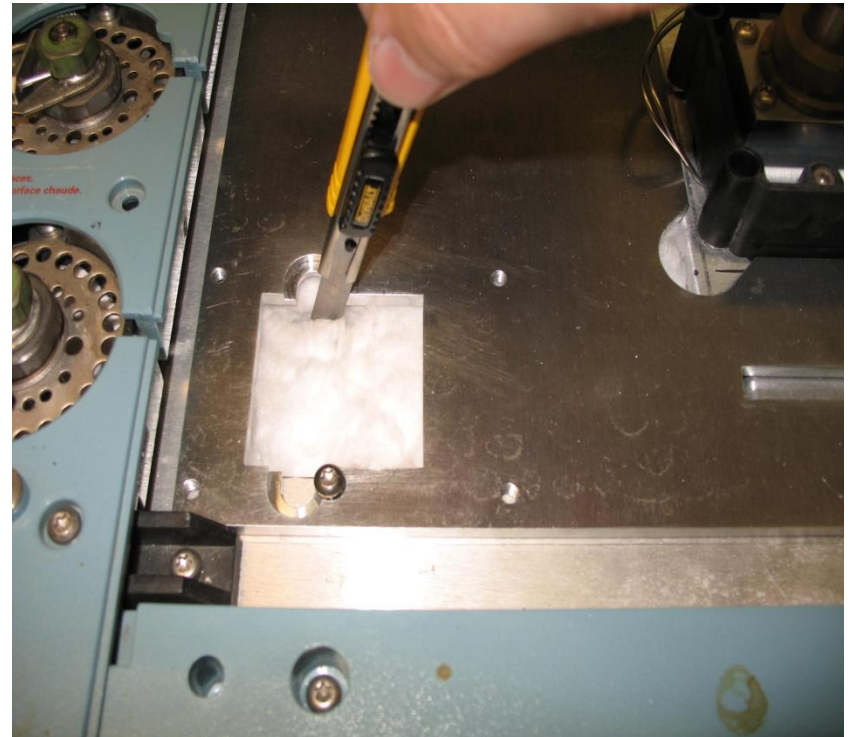
- 1) Install the adapter plate onto the GC.
- 2) Install four M4 screws to hold the plate to the GC, but do not tighten the screws down tightly at this time.
- The plate will be removed after the next step.





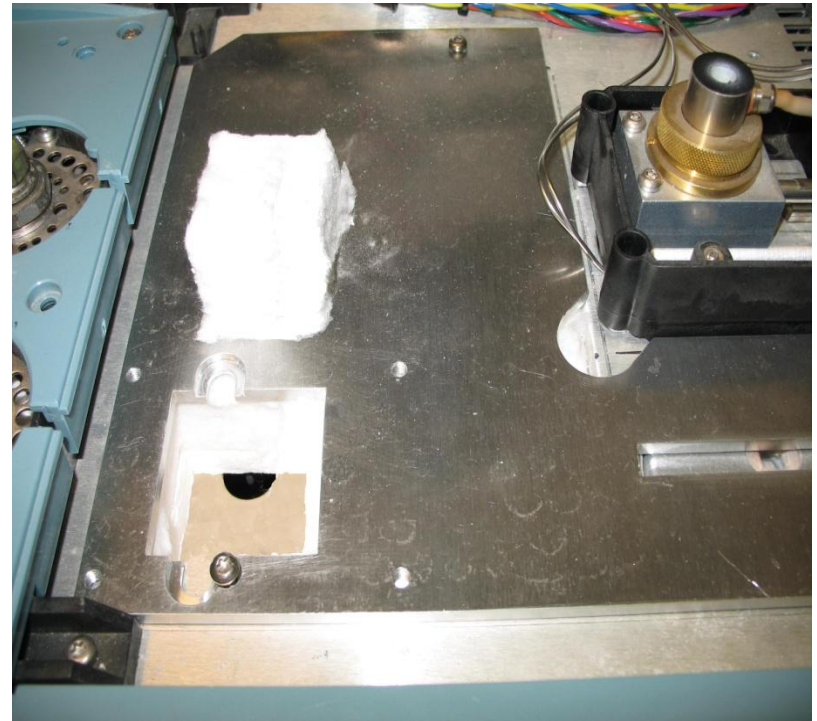
# Cut Insulation for FID

- 1) Use the knife to cut a square hole down through the insulation using the perimeter of the plate as a guide. Make a smooth cut down to the top of the metal oven.
- The insulation has two layers. Do not destroy the lower 1cm dense layer of insulation. All insulation will be reused later.



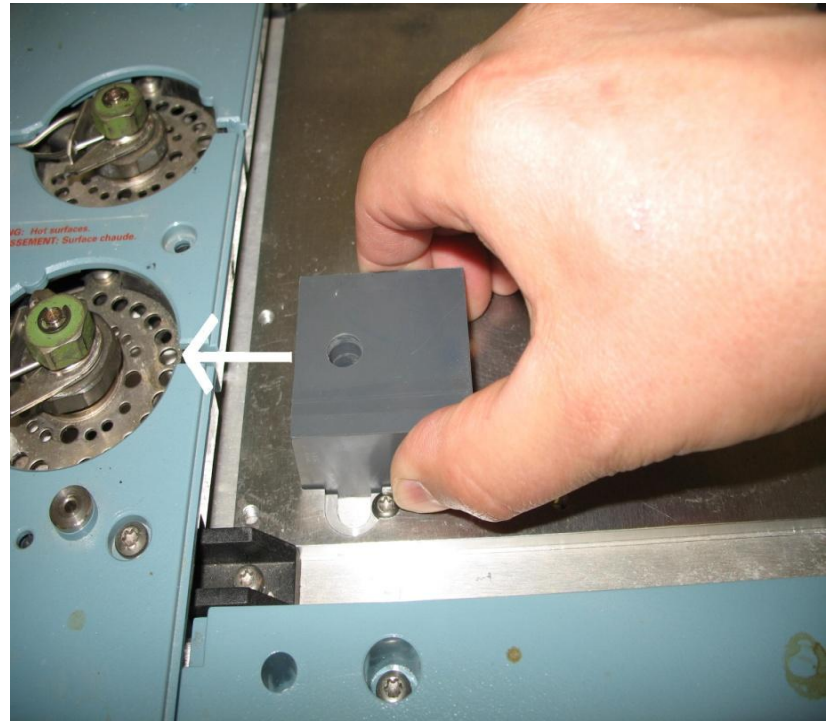
# Clean FID Hole

- 1) Remove the insulation from the new hole.
- 2) Clean any loose insulation from the bottom of the hole.
- It is important for the hole to be clear of any debris.



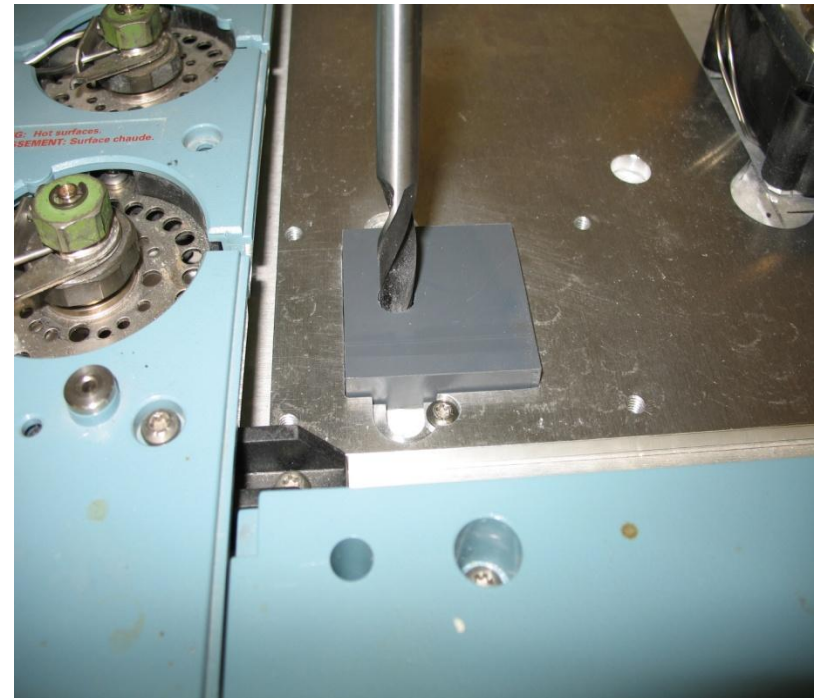
# Insert FID Block

- 1) Insert the guide block with the hole toward the injector.
- Make sure the block is resting flat and firm on the metal below.



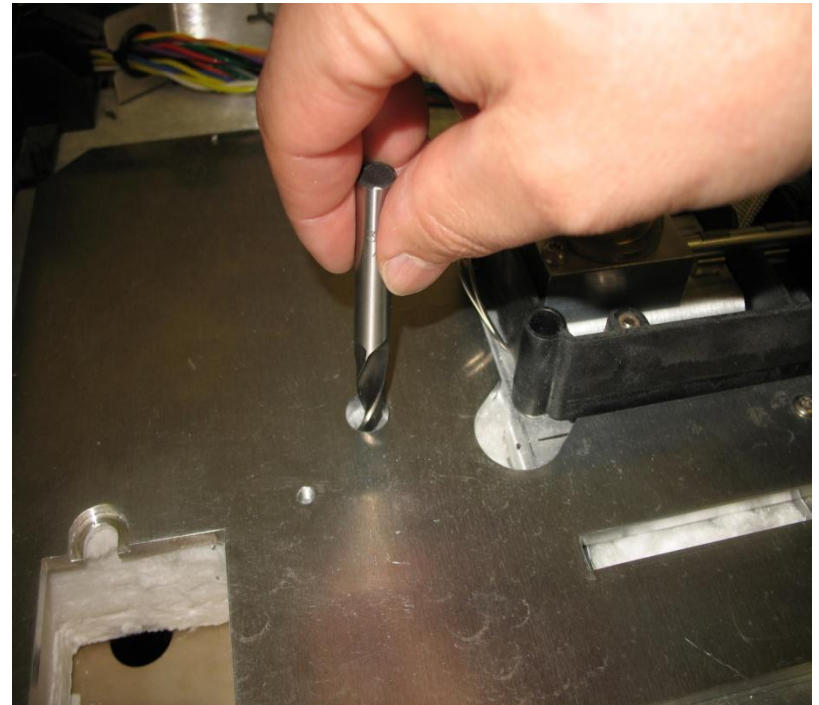
# Drill the FID Hole

- 1) Use the electric drill with the 3/8" Brad drill bit to drill a hole in the top of the GC oven.
- 2) Remove the block when finished.



# Wire Harness Hole

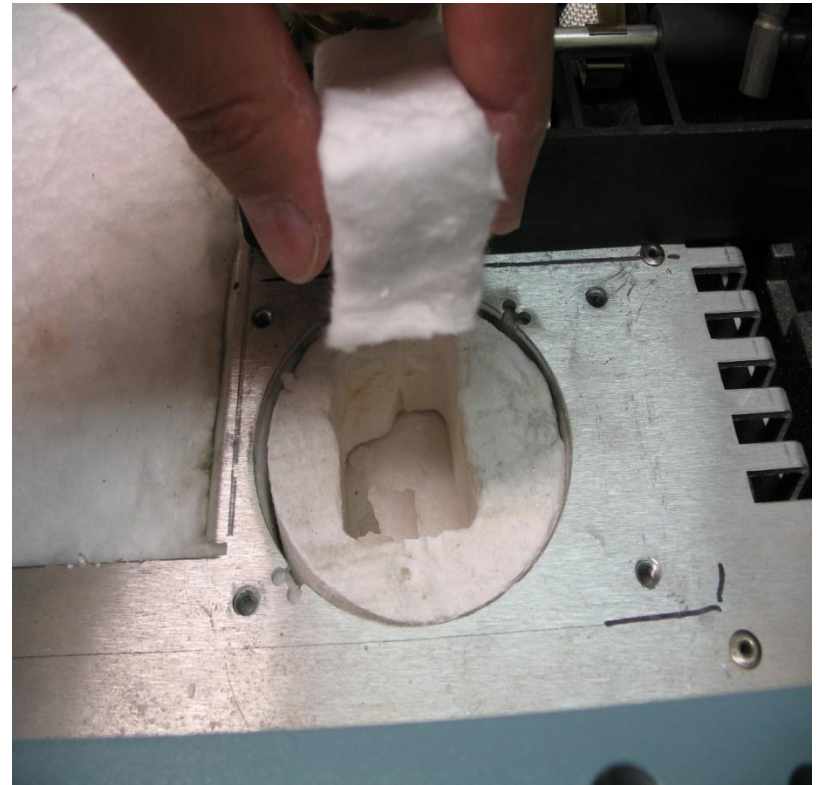
- 1) Use the 3/8" Brad Drill Bit to hand drill a hole through the insulation for the fan and column wires. The hole may be enlarged later if needed.
- 2) Remove the adapter plate screws and the adapter plate.





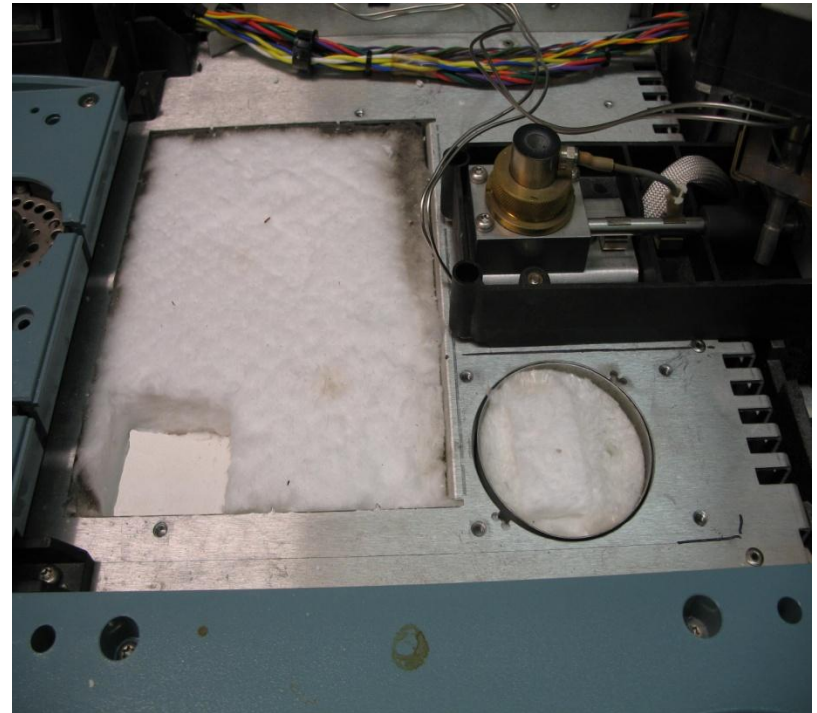
# FID Insulation Replacement

- 1) Cut half of the light weight insulation that was removed from the new square hole and place it into the original FID hole.
- 2) Keep the other half of the insulation for the new FID hole.



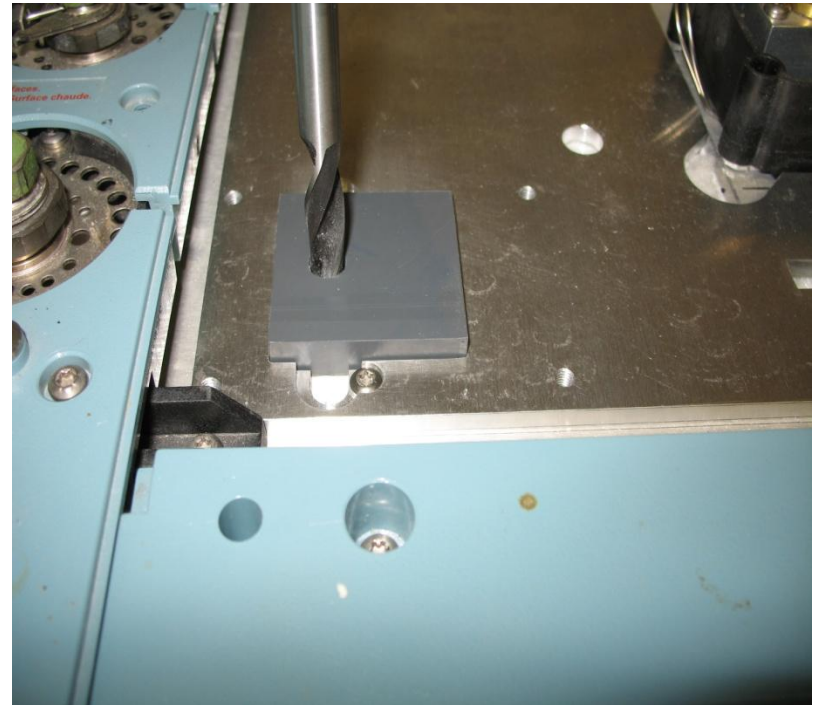
# Insulation

- 1) Place the 1cm thick dense insulation, removed from the bottom of the new FID hole, back into the bottom of the hole.
- The dense insulation has a higher temperature rating and a hole must be drilled through it for the FID fitting.



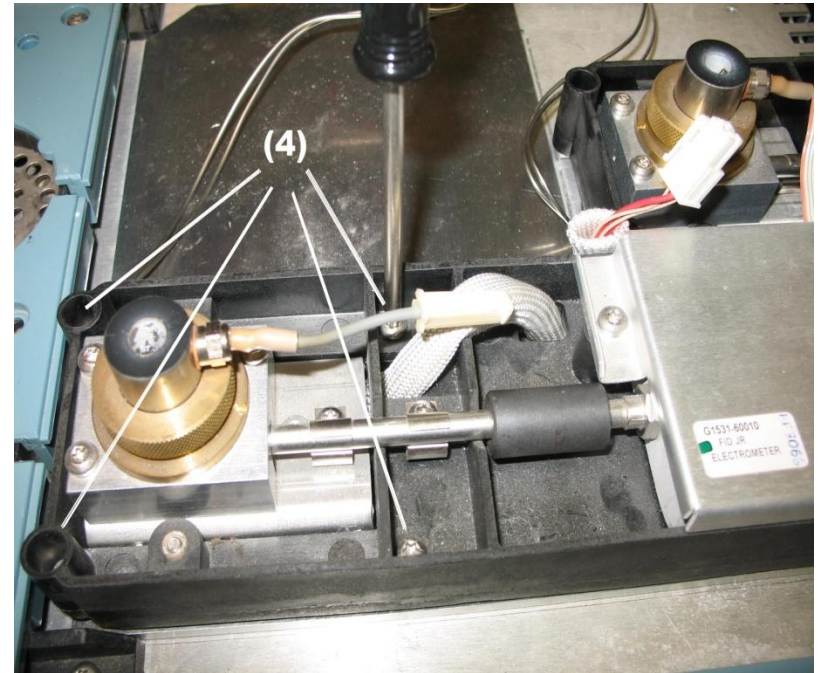
# Insulation Hole

- 1) Reinstall the adapter plate using the four M4 screws. Firmly tighten the screws.
- 2) Reinsert the guide block.
- 3) Use the 3/8" drill bit to hand drill a hole in the dense insulation.
- 4) Remove the block from the plate.



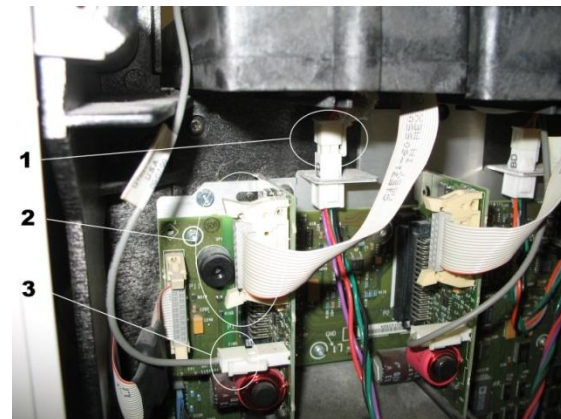
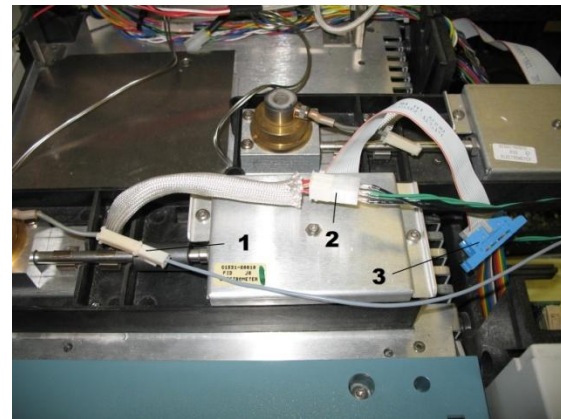
# Install FID

- 1) Add the remaining insulation to the right side of the new FID hole.
- 2) Lower the FID onto the adapter plate.
- 3) Install and tighten the four 6/32" x 3/4" screws to secure the FID to the plate. Do not over tighten the screws to the aluminum plate.



# FID Wiring Harness

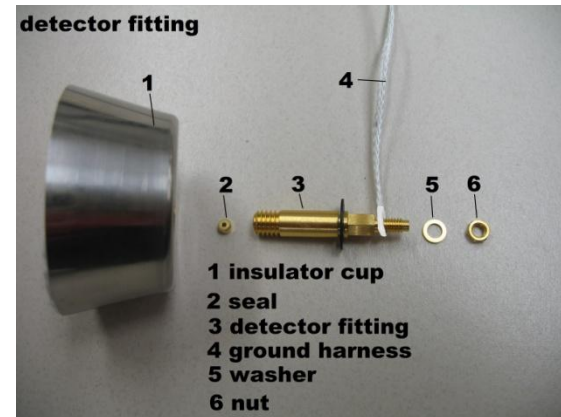
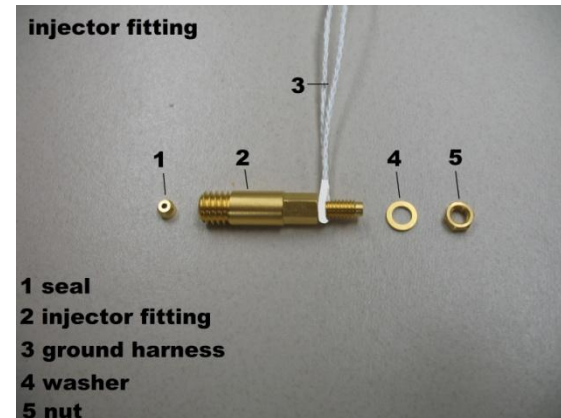
- 1) Connect the three FID extension harnesses to the FID.
- 2) Connect the three harnesses to their respective connections on GC electrical panel.





# Adapter Fittings

- The injector and detector fitting assemblies are shown in order of assembly.
- The taper of the seals must face UP when installing the fittings into the GC.



# Adapter Fitting Installation

- 1) Install the injector fitting and seal into the injector. The taper of the seal must face up.
- 2) Insert the detector fitting into the insulation cup. Keep the hole clear.
- 3) Install the detector fitting, cup and seal into the detector.
- 4) Firmly tighten fittings with metal wrench.



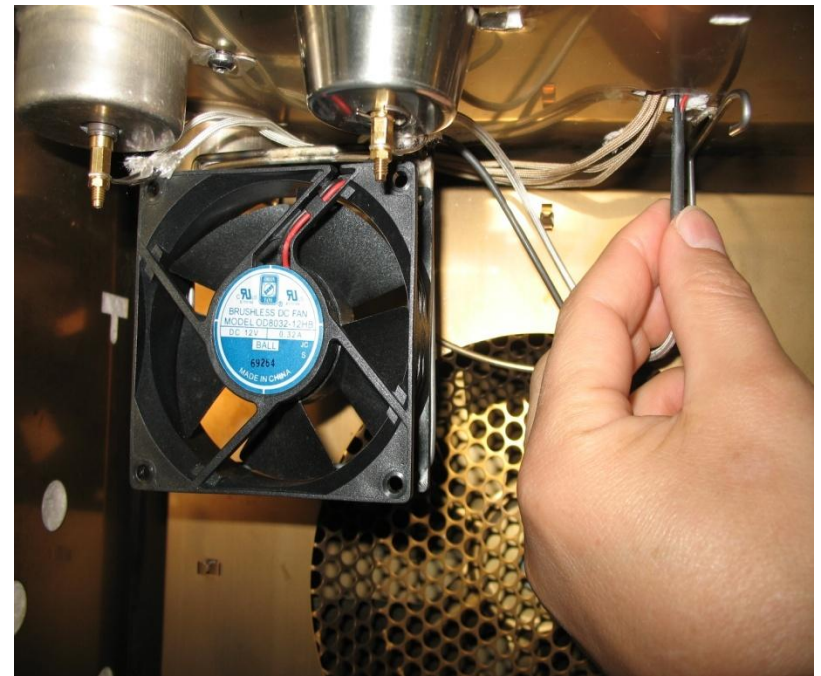
# Connect Ground Harness

- 1) Install the ground harness onto the adapter fittings.
- 2) Install the washers and nuts onto the adapter fittings.
- 3) Tighten nuts firmly with metal wrench.
- The ground harness should sit on top of the fan housing to allow clearance for the auxiliary cooling fan.



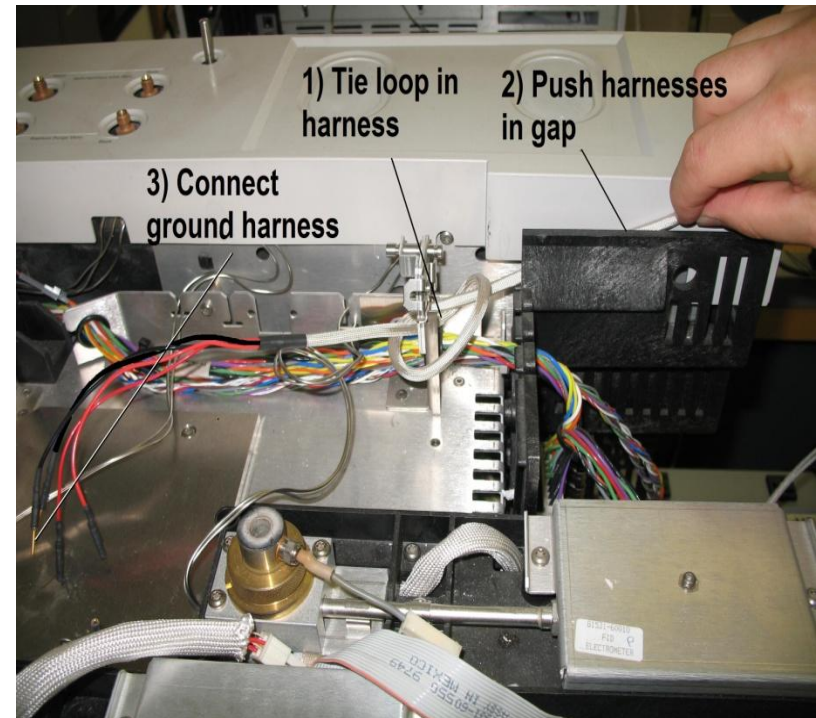
# Fan Installation

- 1) Install the fan assembly to the top of the oven via original attachment points for the column rack. The fan label must face FORWARD as shown.
- 2) Push the ground and fan harnesses up through the hole in the top of the oven.
- Adjustments to the ground harness may be necessary to clear the auxiliary fan.



# Column and Fan Harness

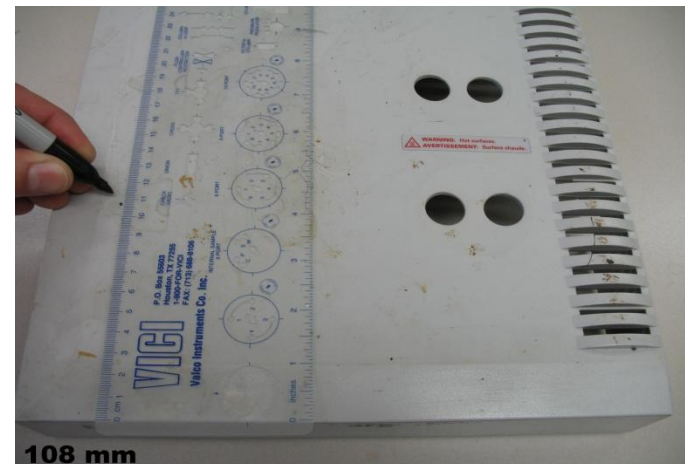
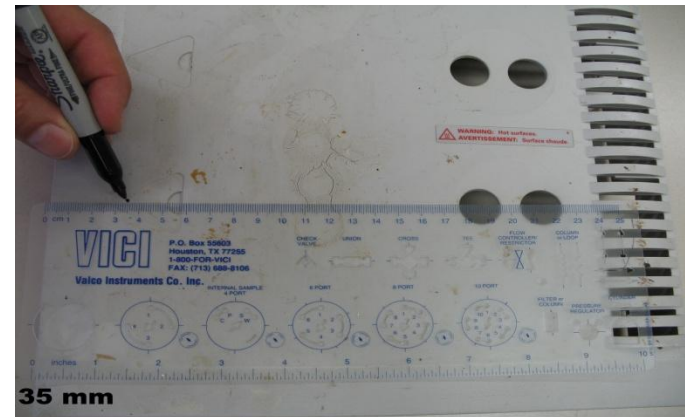
- 1) Tie a loop in the column harness to prevent disconnections and wrap the loop around the hinge bracket.
- 2) Push the fan and column harnesses down between the two walls of the GC.
- 3) Connect the black wires to the ground harness.
- 4) Connect the fan harness.





# FID Cover Vent Hole

- It is necessary to drill a new vent hole for the repositioned FID.
- 1) Measure 35 mm from the side of the FID hood and make a mark.
- 2) Measure 108 mm from the front of the FID hood and make another mark.
- The two marks should be at the same point. Mark this spot for drilling.



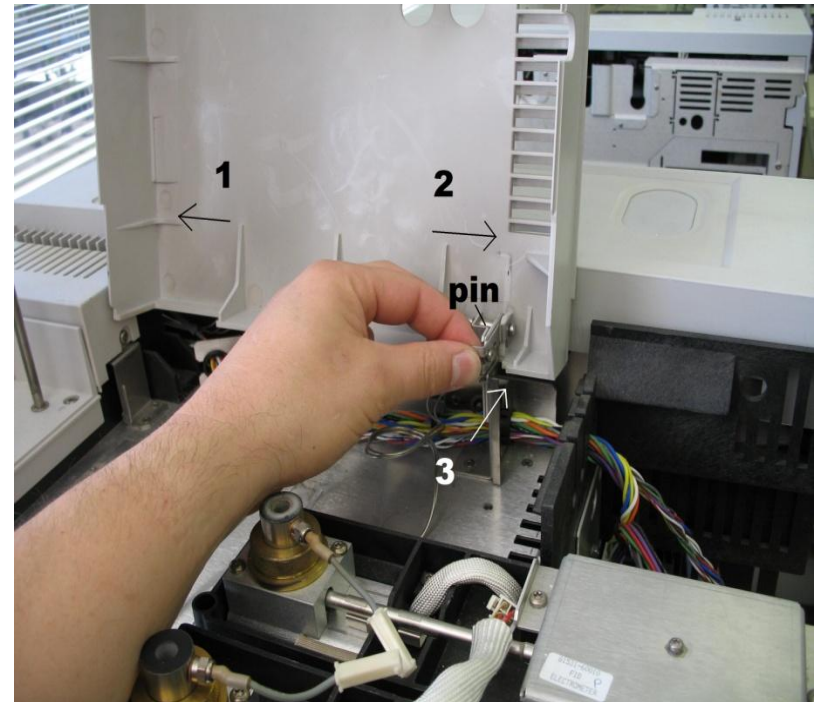
# Drill FID Vent Hole

- 1) Use the hole saw to drill a vent hole in the cover.
- 2) Use the knife to trim any rough edges from the hole.



# Reinstall FID Cover

- 1) Slide the FID cover into the socket.
- 2) Slide hinge pin to the right and into the lid hole.
- 3) Push the locking tab toward the back to secure the hinge.
- 4) Close the lid when finished.



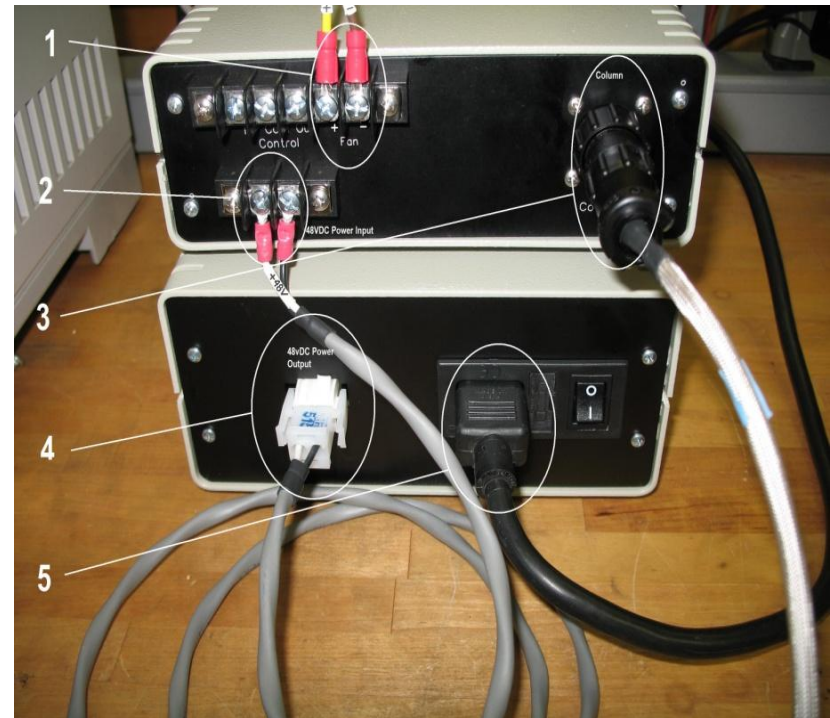
# Install GC Panels

- 1) Snap FID cover onto the GC.
- 2) Insert the side panel into the lower track (2cm back from screw holes) and slide it forward into place.
- 3) Tighten the two screws.
- 4) Plug the GC power cord into the AC outlet.



# Connect the Fast Column Controller

- 1) Connect the fan harness to the controller.
- 2) Connect the power supply harness to the controller.
- 3) Connect the column harness to the controller.
- 4) Connect the power output to the 48VDC power supply.
- 5) Connect the AC power cord to the 48VDC power supply.
- Verify the polarities are correct.





# Verify Harness Connections

- 1) Verify all electrical connections are connected and secure.
- 2) Close GC hood.



# Installation Complete

It is necessary to leave the door of the GC open 5cm to allow the heat from the injector and detector to escape from the oven. Otherwise, the heat will build up in the oven making the cooling of the column difficult. This also prevents strong drafts from effecting the column temperature.

