

Installation Guide
Electron Capture Detector
Accessories G1223A, G1224A, G1278A



Agilent Technologies

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Safety Information

The Agilent Technologies Electron Capture Detector meets the following IEC (International Electrotechnical Commission) classifications: Safety Class 1, Transient Overvoltage Category II, and Pollution Degree 2.

This unit has been designed and tested in accordance with recognized safety standards and designed for use indoors. If the instrument is used in a manner not specified by the manufacturer, the protection provided by the instrument may be impaired. Whenever the safety protection of the Agilent 19233 has been compromised, disconnect the unit from all power sources and secure the unit against unintended operation.

Refer servicing to qualified service personnel. Substituting parts or performing any unauthorized modification to the instrument may result in a safety hazard. Disconnect the AC power cord before removing covers. The customer should not attempt to replace the battery or fuses in this instrument.

Safety Symbols

Warnings in the manual or on the instrument must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions violates safety standards of design and the intended use of the instrument. Agilent Technologies assumes no liability for the customer's failure to comply with these requirements.

WARNING

A warning calls attention to a condition or possible situation that could cause injury to the user.

CAUTION

A caution calls attention to a condition or possible situation that could damage or destroy the product or the user's work.

Sound Emission Certification for Federal Republic of Germany

Sound pressure $L_p < 68$ dB(A)

During normal operation

At the operator position

According to ISO 7779 (Type Test)

Schallemission

Schalldruckpegel $LP < 68$ dB(A)

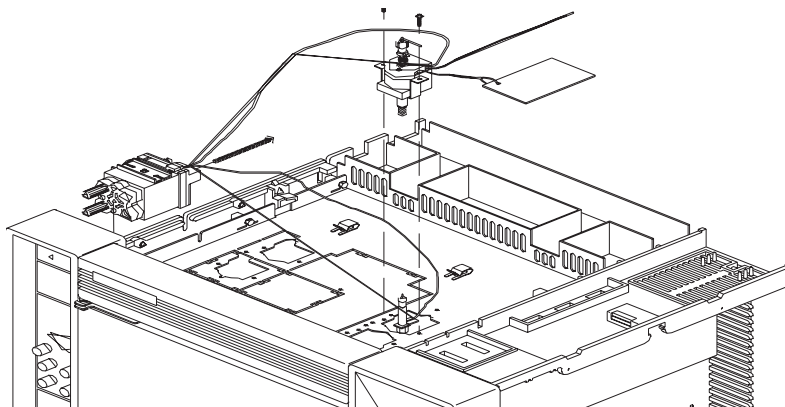
Am Arbeitsplatz

Normaler Betrieb

Nach DIN 45635 T. 19 (Typprüfung)

Installing the Electron Capture Detector Accessories G1223A/ G1224A/ G1278A

Accessory	Description	License
G1223A	ECD for 4890 or 5890 GC, with makeup gas	General
G1224A	ECD for 5890 GC, with makeup gas	Specific
G1278A	ECD (foil) for 5890 GC, with makeup gas	

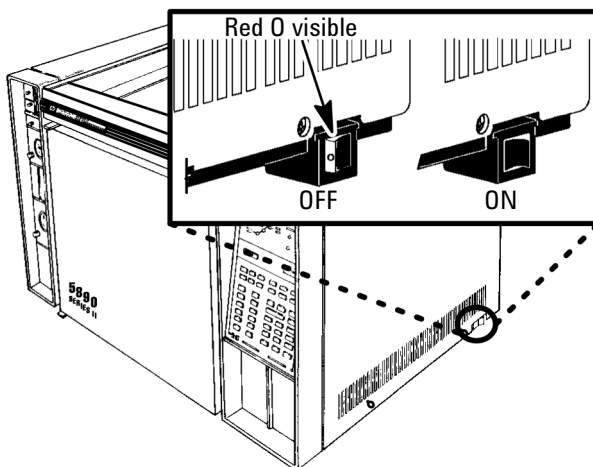


Prepare the GC

WARNING

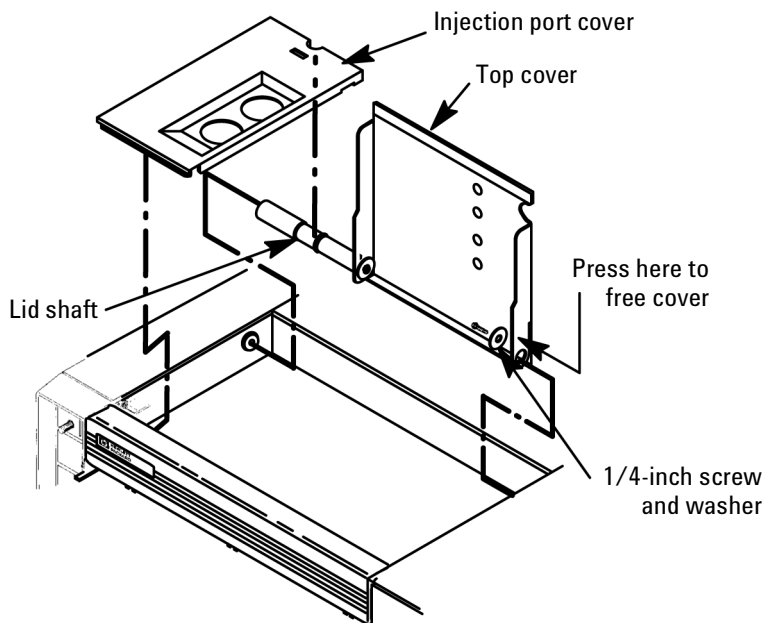
Hazardous voltages are present in the instrument whenever the power cord is connected. Avoid a potentially dangerous shock hazard by disconnecting the power cord before working on the instrument.

1. Set the main power line switch to the off position.



2. Disconnect the power cable from its receptacle.
3. Allow time for the oven and heated zones to cool.
4. When the heated zones are cool, turn off all gas supplies at the source.

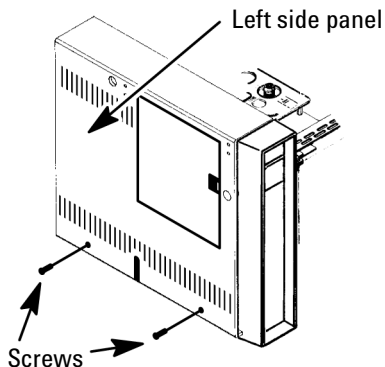
5. Remove the injection port cover by grasping its back edge and lifting it upward. If an autosampler is installed, the injection port cover will not be present.



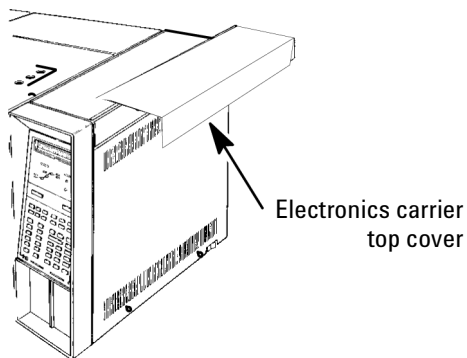
6. If an autosampler is installed on the instrument, it will be necessary to remove it and its mounting bracket to allow removal of the left side cover.
 - a. Remove the autosampler tray from its mounting bracket by simultaneously lifting and turning the two tray locks that hold it in position, then sliding the tray away from the instrument.
 - b. Lift the autosampler tray from its mounting bracket and set it aside.
 - c. Remove the autosampler bracket by removing the six screws securing it to the instrument.

Installing the Electron Capture Detector Accessories G1223A/G1224A/G1278A
Prepare the GC

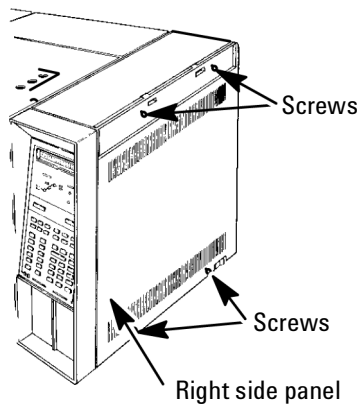
7. Remove the two screws securing the left side panel along its bottom edge.



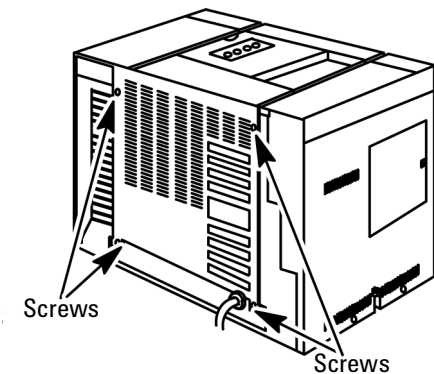
8. Slide the left side panel towards the rear of the instrument and lift.
9. Remove the electronics carrier top cover by grasping it at the rear and lifting upwards until its catch releases, then pull it towards the rear of the instrument.



10. Remove the right side panel by removing four screws, two each along its top and bottom edges.



11. Remove the back cover of the instrument by removing four screws and sliding the cover off the rear of the instrument.

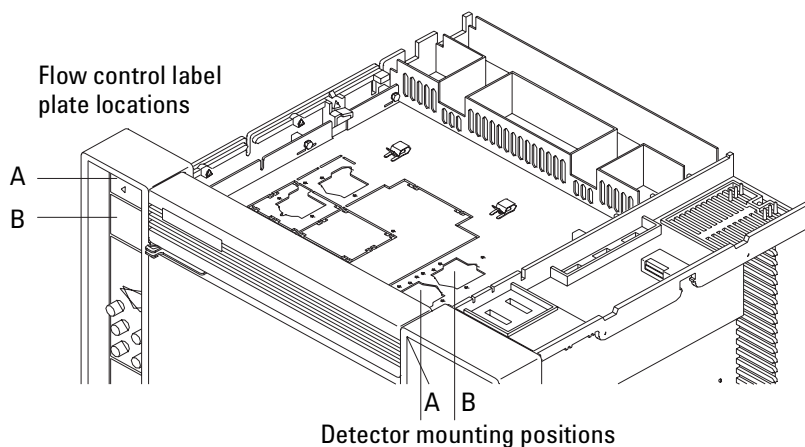


Install the Flow Manifold

Caution

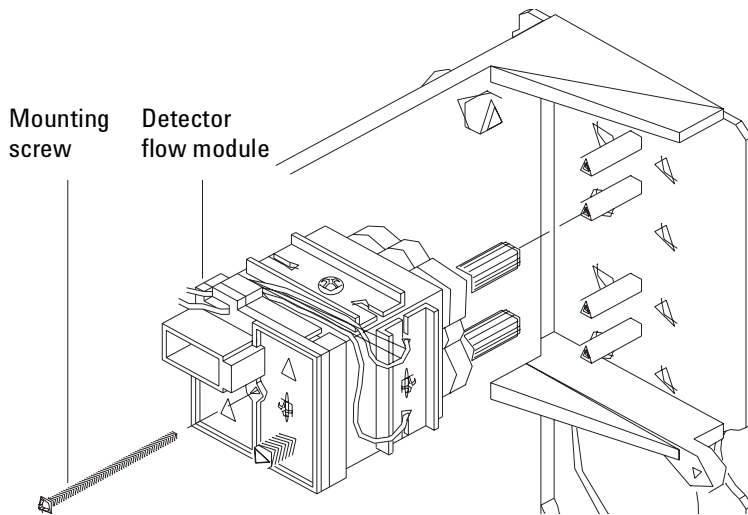
The insulation on the GC is made of refractory ceramic fibers (RCF). Ventilate your work area. Wear long sleeves, gloves, safety glasses, and a disposable dust/mist respirator. Dispose of insulation in a sealed plastic bag.

1. If present, remove the cover plate and the insulation below it from the detector mounting location .
2. Remove the flow control label plate in the detector A or B location. The plate is glued in place and is removed by pushing it firmly through openings in the back of the flow panel to get it started, then pulling it free.



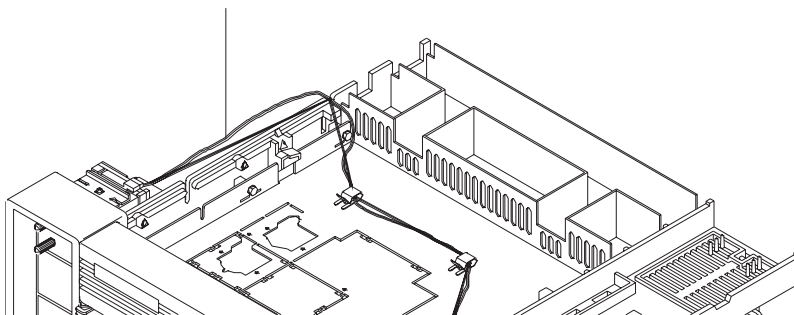
3. Place the provided self-adhesive ECD flow plate in the space where flow-control components for the detector are to be installed.
4. There are two mounting studs on the back of the main flow panel for installing the detector flow module. Place the flow module assembly on

the studs and secure it with an M4, 1-3/4 inch screw through the center hole of the flow module.



5. Route the makeup gas and anode purge tubing from the flow module across the top of the oven to the detector area. Use the metal tube retaining clips located near the rear of the oven to hold the tubing in place.

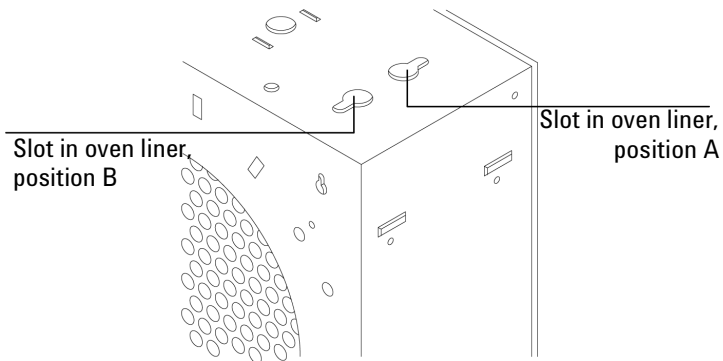
Makeup gas/anode purge tubing



6. Carefully insert the makeup gas adapter and about 5 inches of 1/16-inch tubing into the oven. Position the tubing in the slot located in the oven

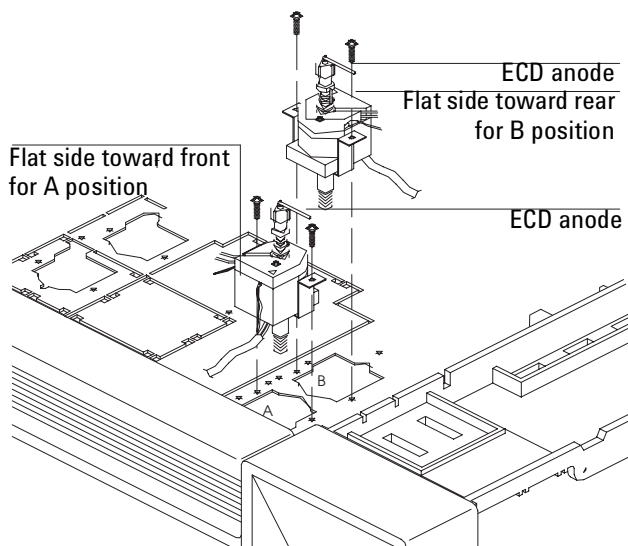
Installing the Electron Capture Detector Accessories G1223A/G1224A/G1278A
Install the Flow Manifold

ceiling and route the tubing across the oven top to the flow block. Use the metal clips on the oven top to hold the tubing in place.



Install the Detector Assembly and PCB

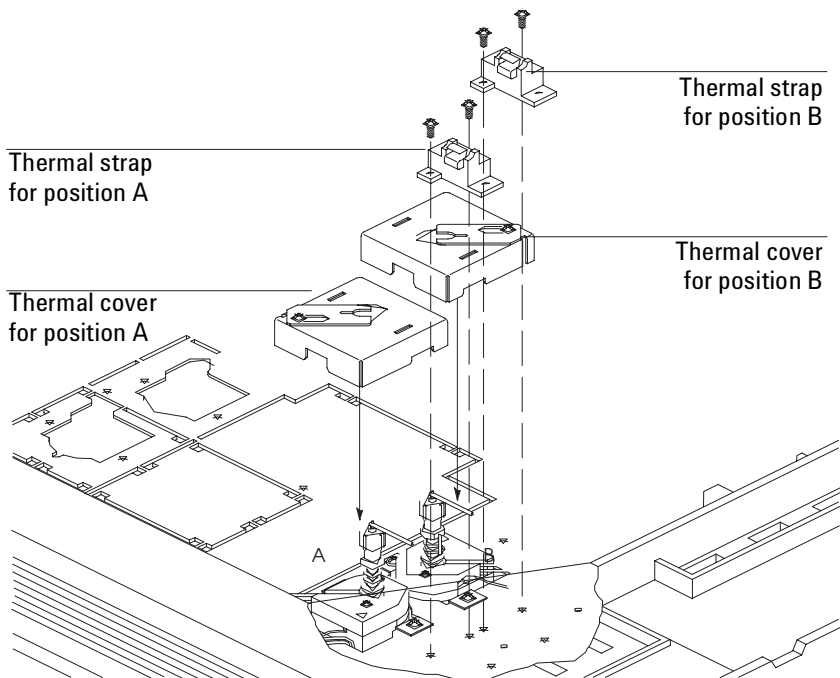
1. Install the detector from the top of the oven. When installing the detector in the A position, face the flat side toward the front of the instrument. When installing the detector in the B position, face the flat side toward the rear of the instrument. Secure the detector with two M4 screws.



2. Place the detector thermal cover over the detector. Position the cover so the cutout aligns with the anode purge and vent tubes. The metal label plate attached to the ECD should be positioned on top of the oven, to the left of the detector.
3. Secure the sliding clip under the flange on the ECD. Tighten the screw to lock the sliding clip in place.

Installing the Electron Capture Detector Accessories G1223A/G1224A/G1278A
Install the Detector Assembly and PCB

4. Rotate the anode arm toward the ECD board interconnect.



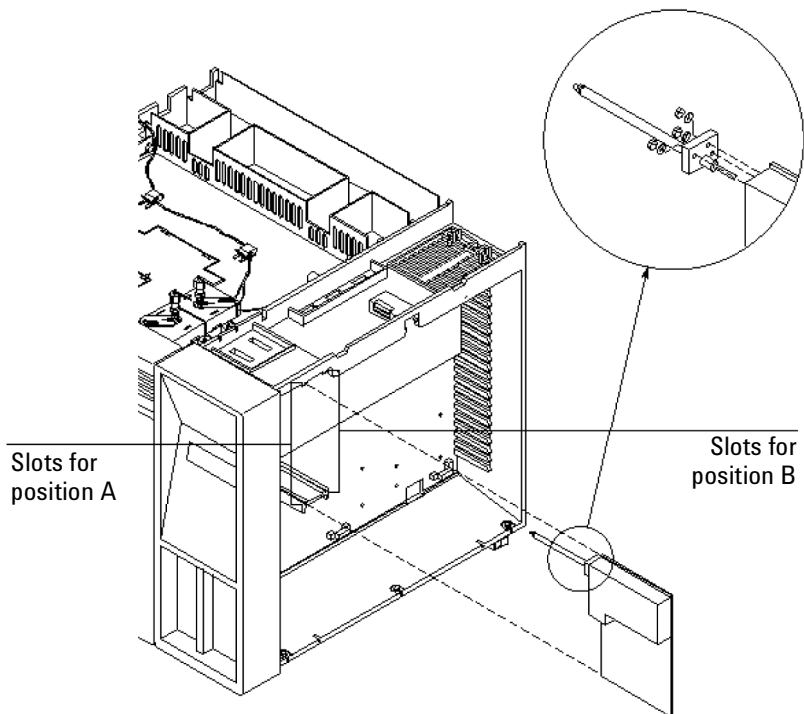
5. Position the thermal strap to the right of the detector location. Secure it with two 8mm screws.

Caution

Board components can be damaged by static electricity: Use a properly grounded static control wrist strap when handling the ECD board.

Installing the Electron Capture Detector Accessories G1223A/G1224A/G1278A
Install the Detector Assembly and PCB

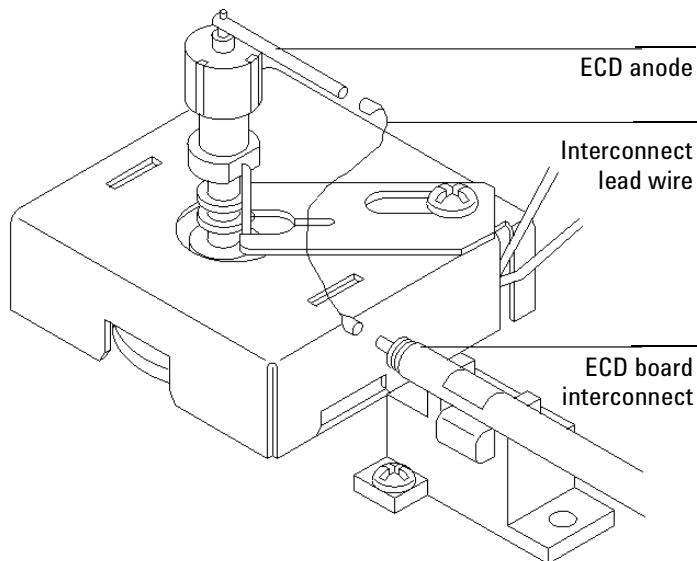
- Using the figure below as a guide, mount the interconnect assembly to the detector board. Install the interconnect and internal lockwasher, followed by an M3 hex nut. Tighten the three nuts firmly.



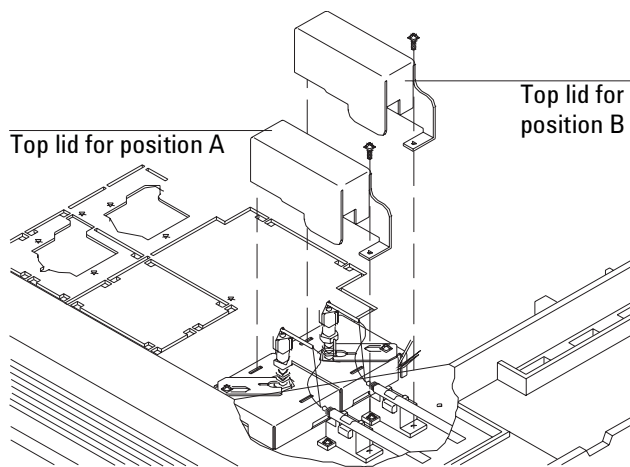
- Install the ECD signal board in the position (slot) on the main circuit board corresponding to the detector location.

Installing the Electron Capture Detector Accessories G1223A/G1224A/G1278A
Install the Detector Assembly and PCB

8. Connect the interconnect lead wire to the ECD anode and the ECD board interconnect.



9. Place the top lid over the thermal cover. Insert the tabbed end into the slot on the thermal cover. Secure the opposite end with an M4 screw. Be careful not to short the anode wire to the top cover.



10. Route the detector heater/sensor leads through the plastic tray across the rear of the instrument to the main circuit board. Heater and sensor wires must be connected to matching heated zones (DET A sensor on P7 and DET A heater on J9, for example). Connect heater and sensor leads to the instrument main circuit board as follows:

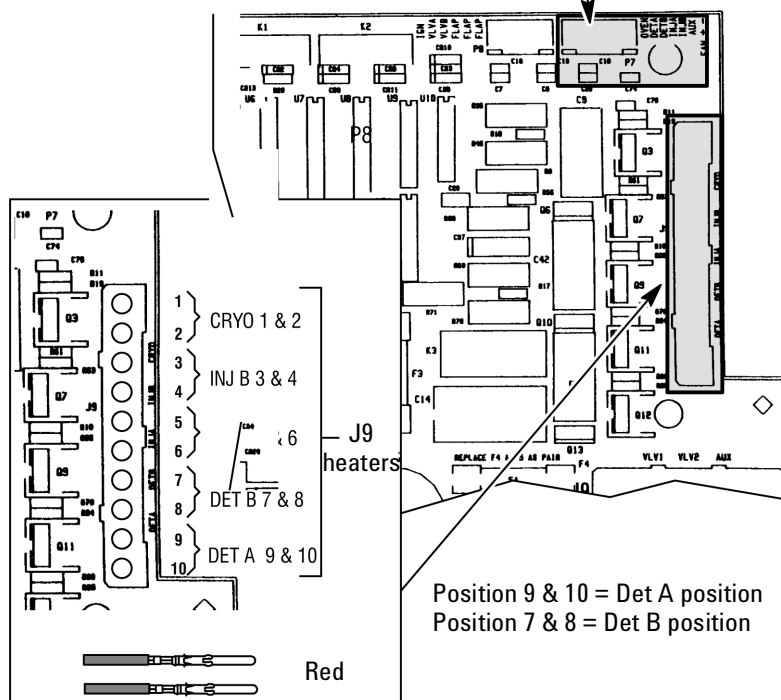
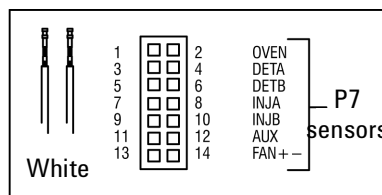
Installing the Electron Capture Detector Accessories G1223A/G1224A/G1278A
Install the Detector Assembly and PCB

Agilent 5890 Series II and Agilent 4890 Series: Connect the sensor leads (white) to P7. Connect the heater leads (red) to J9.

Main Circuit Board

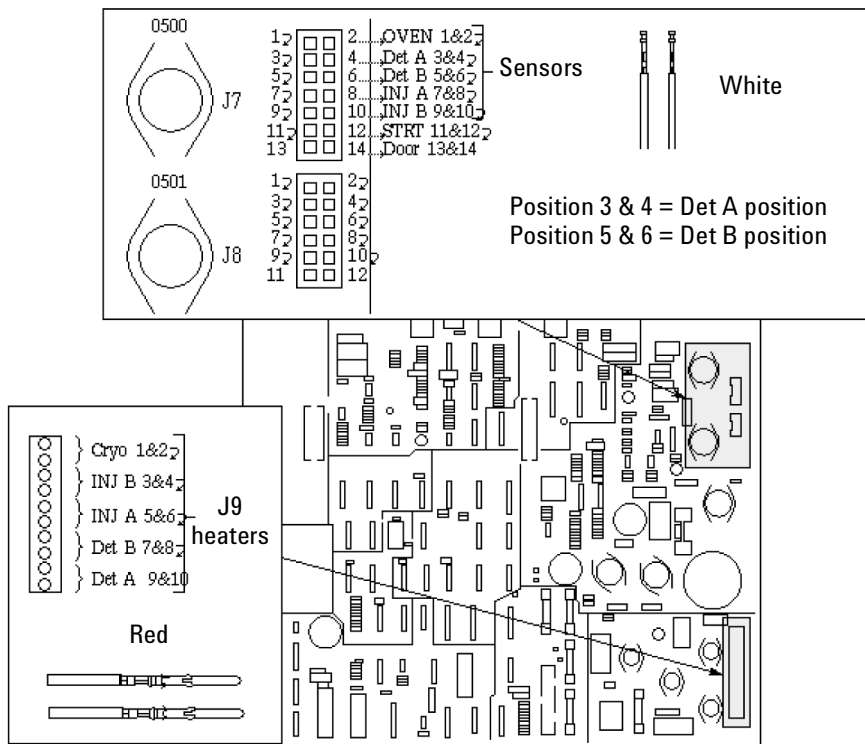
Position 3 & 4 = Det A position

Position 5 & 6 = Det B position



Agilent 5890A: Connect the sensor leads (white) to J7, heater leads (red) to J9.

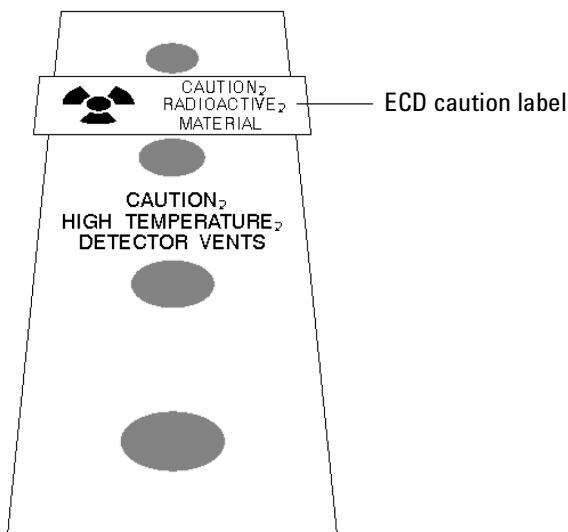
5890A Main Circuit Board



11. Install the caution label on the top cover in the middle of the area

Installing the Electron Capture Detector Accessories G1223A/G1224A/G1278A
Install the Detector Assembly and PCB

corresponding to the detector position.



12. Reinstall panels and covers. Reconnect the instrument power cord and restore power.
13. Make gas connections to the back of the flow module per the *Getting Started Guide* (for the 4890) or the *Site Prep/Installation* (for the 5890) manual.
14. Establish your gas flows and run a test chromatogram as described in your *GC Operating Manual*.



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