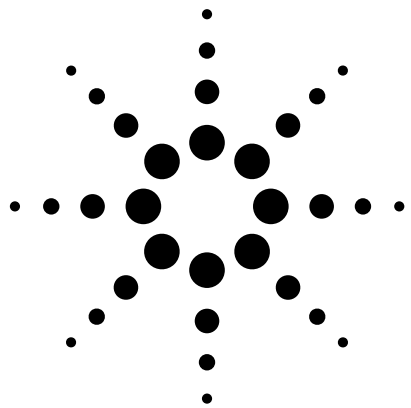




Installing a Cool On-Column (COC) Inlet

Agilent 6850 Series II Network GC System
Accessory G3344B

These instructions are divided into two parts:

- **Part 1** to prepare the Electronic Pressure Control ("EPC") module for later installation into the Agilent 6850 Gas Chromatograph ("GC")
- **Part 2** to perform the actual Accessory installation into the GC

Part 1: Preparation of the COC EPC module

Locate the following item found in your Accessory kit:

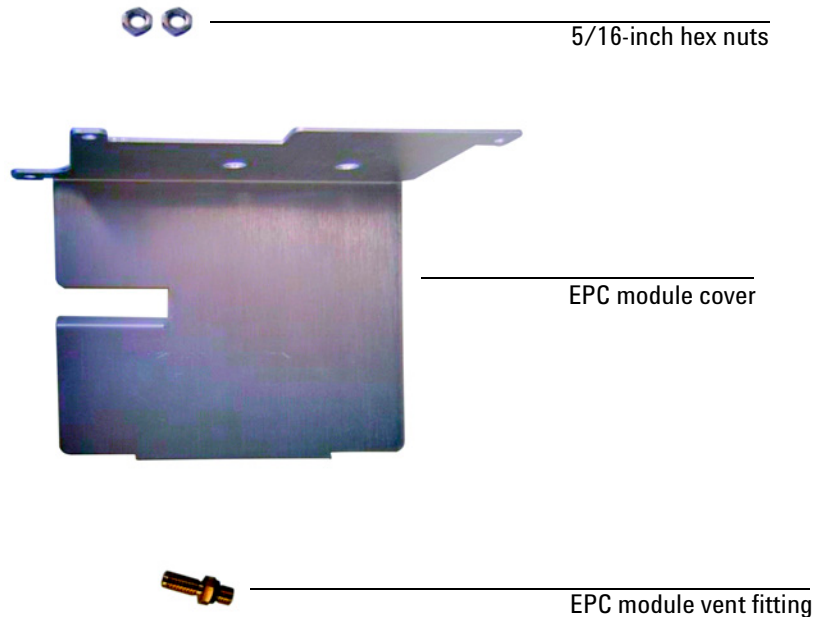
Cover Kit G2630-60081 consisting of:	Qty.
EPC cover	1
Hex nuts, 7/16-inch	2
Vent fitting	1



Agilent Technologies

Installing a Cool On-Column Inlet

Tools Required



Caution

Some of assemblies contain printed circuit boards so standard ESD precautions must be followed: in handling assemblies, use a static control wrist strap (supplied) connected to a suitable ground.

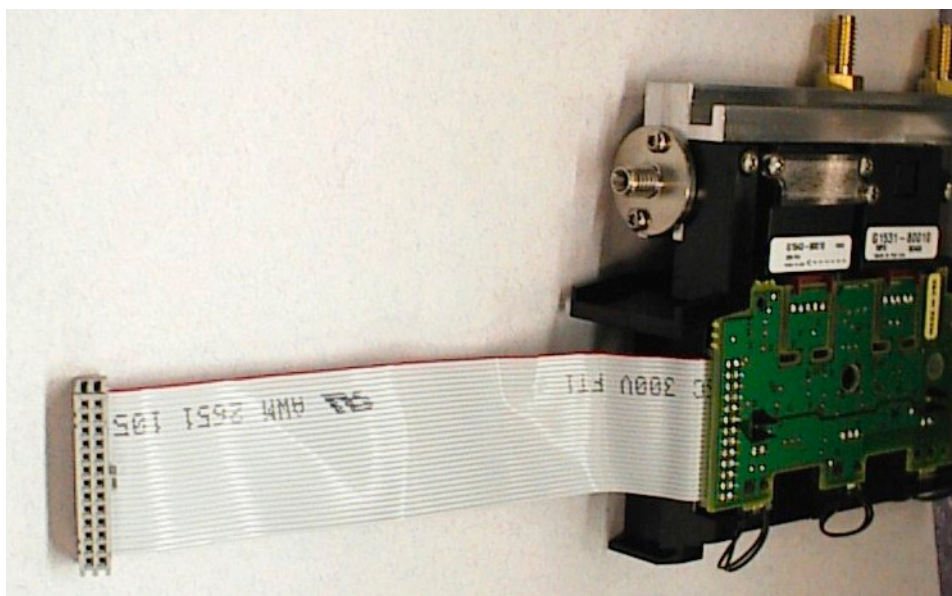
The following tools are required for this assembly:

Tools Required

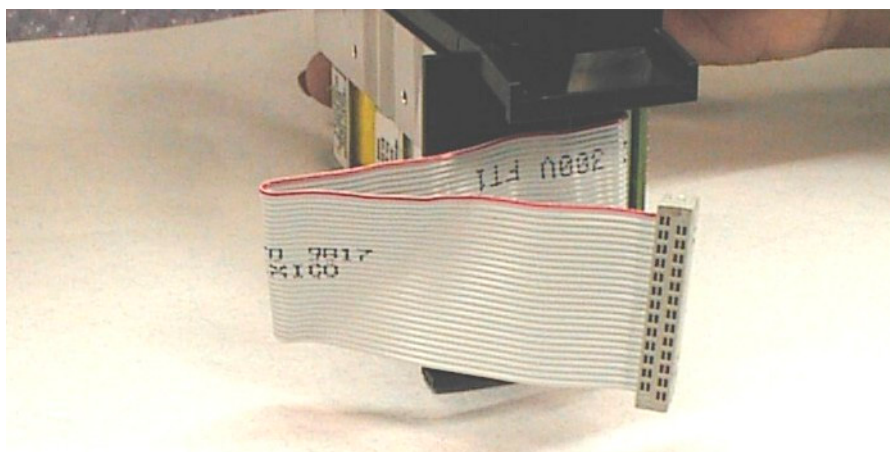
7/16-inch open end wrench or nut driver

Procedure

1. Prepare a suitable clean, dry, static-free work area.
2. Place the inlet system assembly such that its EPC module is centered in your work area with its ribbon cable extending to the right.



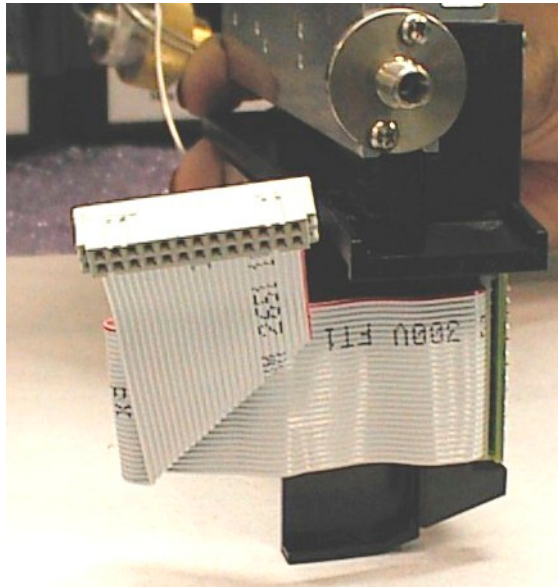
3. Remove any dust caps from gas connection fittings.
4. Fold the cable back on itself and gently crease it about midway along its length.



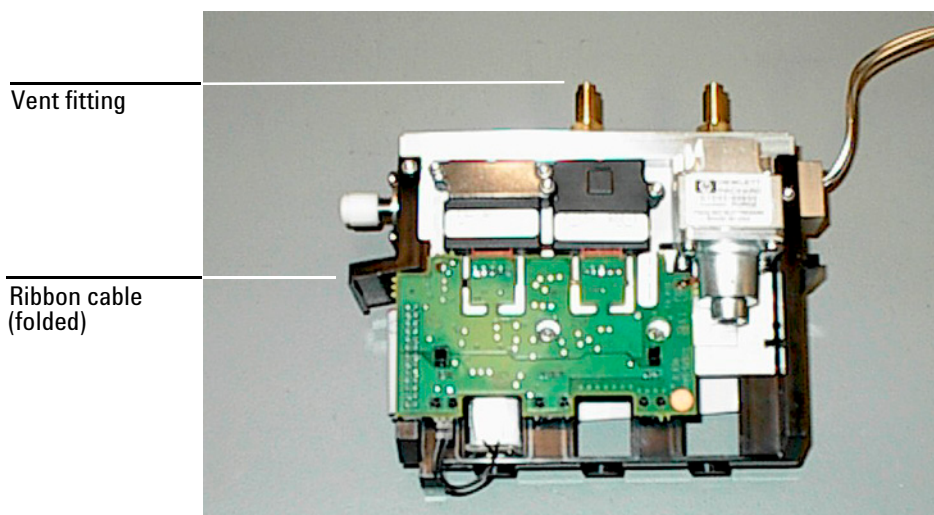
Installing a Cool On-Column Inlet

Tools Required

5. Next, fold the cable back on itself again, but at an angle such that it now extends at 90-degrees in the direction of the gas connection fitting. Again, gently crease the cable at the fold.



6. Next, install a vent fitting and secure it with a 7/16-inch wrench or nut driver.



7. Install the cover onto the two gas fittings making sure the ribbon cable and its connector exit through the slot provided. Secure the cover using 7/16-inch hex nuts, one onto each fitting.



Installing a Cool On-Column Inlet
Tools Required

8. Replace protective dust caps onto gas connection fittings to maintain cleanliness.

This completes EPC module preparation for this Accessory.

Part 2: Installation of the COC Accessory

This kit contains:

Description	Quantity
Machine screws, M4 x 0.7 12 mm	6
Cable ties, .062–.625 diameter	6
Ship kit*	1
T-20 Torx® screw, M4 x 8 mm	1
Cool on-column inlet assembly (with covers)	1
Nut and ferrule set, 1/8-inch	1
Disposable wrist strap	1
Cavity sleeve	1
Syringe kit*	1
Seal insulation	1
CO ₂ CryoBlast weldment**	1
Post-drawn tube**	1
Tubing union, 1/8-inch	1
Nut, stainless steel, for 1/16-inch tubing	1
Ferrule set, stainless steel, for 1/16-inch tubing	1
Installation sheet (this document)	1

* Component items are listed on the next page.

** Used only with CryoBlast

Installing a Cool On-Column Inlet

Tools Required

The Ship kit contains:

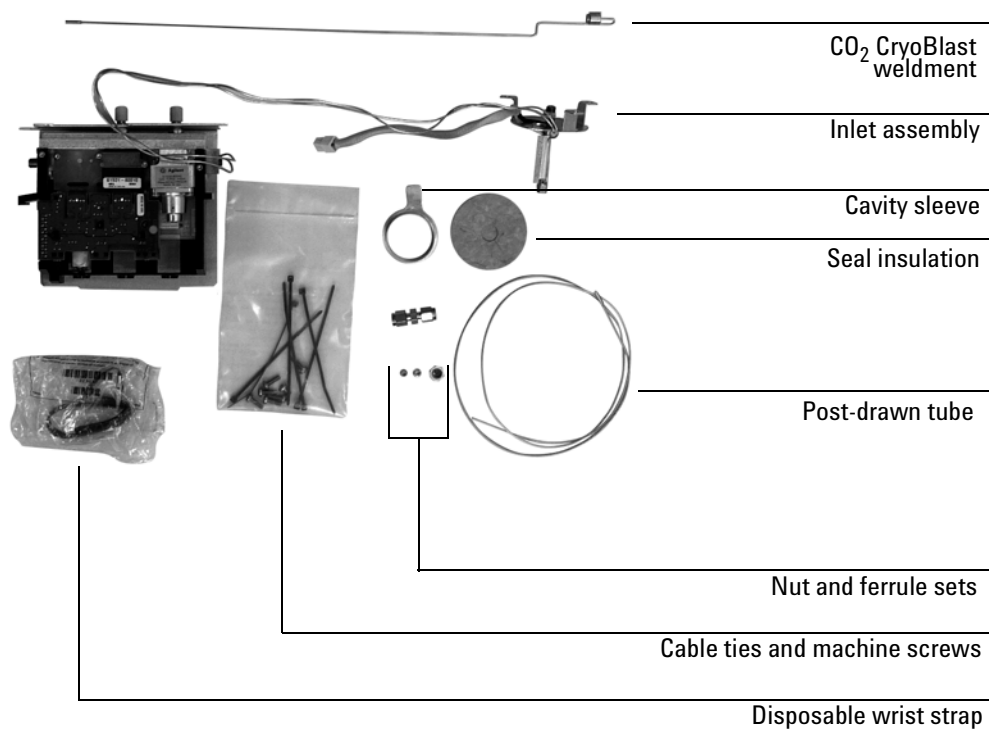
Description	Quantity
Insert, 250 microns	1
Inserts for 530- μ m columns, no rings	1
Insert springs	2
Lowbld septa, 5 mm, 5/pk	1
PCOC 530 Septum nut	1
Needle support 250/320	1
Septa, 5-mm through hole, 25/pk	1
Needle, 0.25-mm on-column/5 μ L syringe, 3/pk	1

The Syringe kit contains:

Description	Quantity
Syringe plunger	1
Syringe, 5- μ L on-column RN, barrel only	1
Needle, 0.32-mm on-column/5- μ L syringe, 3/pk	1

The inlet is factory-assembled. Do not disassemble it during installation.

Parts identification



Required tools

- T-20 Torx screwdriver
- Flat-blade screwdriver
- Inlet wrench
- Forceps

Overview

Caution

Before starting, review the safety information listed at the end of this document.

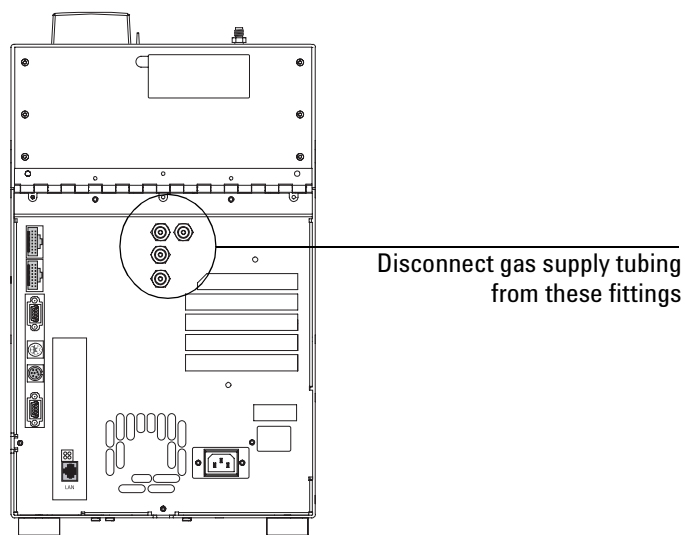
9. Disconnect the GC.
10. Remove the lid top cover.
11. Remove the existing inlet.
12. Install the new inlet.
13. Install the cryogenic oven cooling kit, if applicable.
14. Restore the GC to operating condition.
15. Zero the pressure sensor.

Disconnect the GC

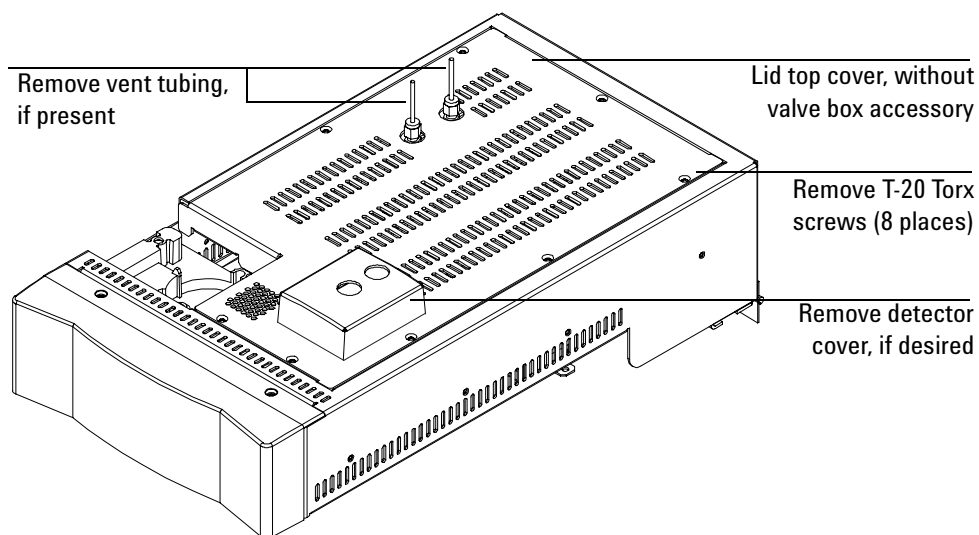
WARNING

Hydrogen gas is flammable and potentially explosive. Before replacing the flow module, turn off the hydrogen gas at the source.

1. Turn off the GC and unplug the power cord. Allow time for all heated zones to cool.
2. Open the lid. If a column is installed, disconnect it at the detector end. Remove the nut warmer, insulation, column hanger and capillary adapter, if present. Then, remove the bottom cover plate and close the lid.
3. Turn all gases off at their sources. Disconnect the carrier and detector gas tubing from the back panel of the instrument.



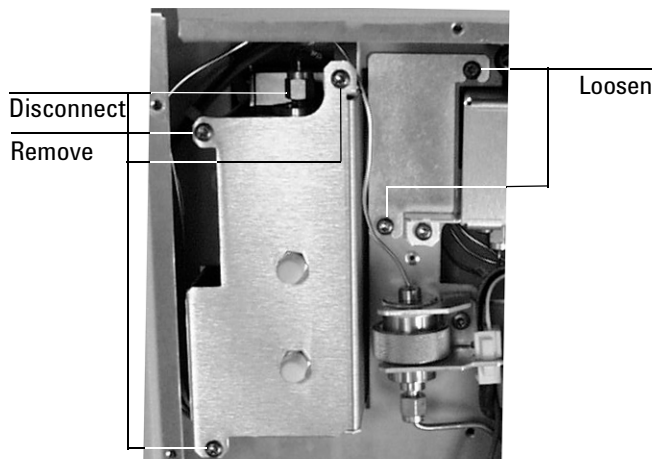
Remove the lid top cover



Remove the existing inlet

If the GC currently has an inlet installed, you must remove it.

1. Loosen the screws holding the connector cover plate next to the inlet flow module.



2. Slide the cover plate off and disconnect the cable from the flow module.
3. Disconnect the gas fitting on the back of the flow module.
4. Remove the three screws on top of the flow module.
5. To continue this procedure, see the following section corresponding to the type of inlet you are removing.

Cool On-Column inlet

1. Use a T-20 Torx screwdriver to loosen the three captive screws that attach the inlet weldment to the top of the inlet carrier.
2. Slide the inlet up and out of the carrier. If necessary, you can also slide the insulation sleeve off of the bottom of the inlet.

Purged Packed inlet

1. Trace the heater/sensor cable from the inlet to the wiring harness connector. Disconnect it.

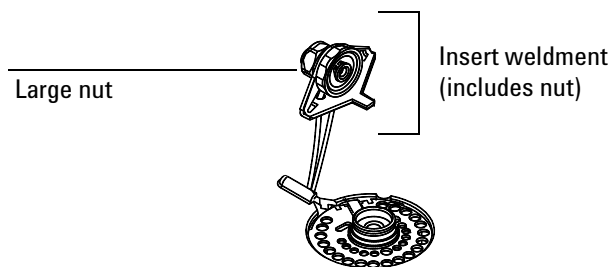
2. Remove the three screws holding the inlet.
3. Lift the inlet and flow module out of the lid. Remove the insulation in the hole under the inlet.

Programmable Temperature Vaporization inlet

1. Lift the PTV inlet up.
2. Remove the heater connector from the side panel.
3. Disconnect the power cable, thermocouple connector, and cryo connector from the flow module and board. Disconnect the module ribbon cable from the pneumatics board.
4. Slide the flow module out of the chassis, remove the chemical trap assembly from the mounting bracket, and remove the PTV assembly from the GC.
5. Slide the cryo assembly out of the open-top slot next to the PTV pneumatics module. Unwind and remove the tubing that is coiled up inside the cryo assembly.
6. **Liquid N₂ Cryo Assembly Only.** Slide the valve bracket into the open-top slot next to the PTV pneumatics module. Secure from the front with a short (M4 x 12) screw.
7. Remove the chemical trap and tubing.

Split/Splitless inlet

1. Use the inlet wrench to release the large nut on top of the inlet.



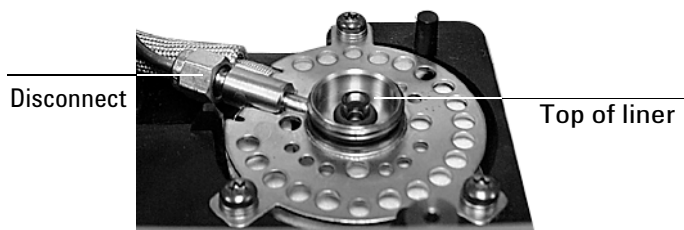
2. **If you *do not* have a gas or liquid sample valve**—Remove the insert weldment and the flow module.

Installing a Cool On-Column Inlet

Remove the existing inlet

If you *do* have a gas or liquid sample valve—The insert weldment is part of the valve assembly. Move it out of the way. Disconnect the gang block fitting (also part of the valve assembly), from the flow module. Remove the flow module.

3. Use forceps to remove the liner and O-ring.
4. Disconnect the split vent trap.



5. Trace the heater/sensor cable to the wiring harness connector. Disconnect it.
6. Remove the three screws holding the inlet body.
7. Lift the inlet assembly out of the lid. Remove the insulation in the hole under the inlet.

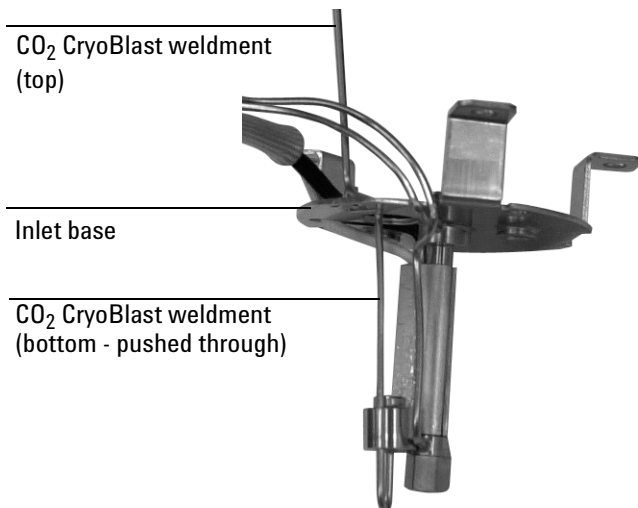
Install the new inlet

Caution

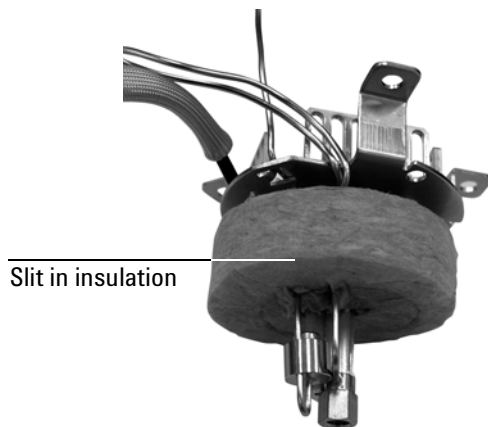
Board components can be damaged by static electricity. Use a properly grounded static control wrist strap when installing the flow module.

1. Move the lid to the normal open position and slide the stop plate all the way up into position behind the roller. Tighten the stop plate screw.

2. Insert the CO₂ CryoBlast weldment into the inlet base as far the bend in the wire (until there is resistance).



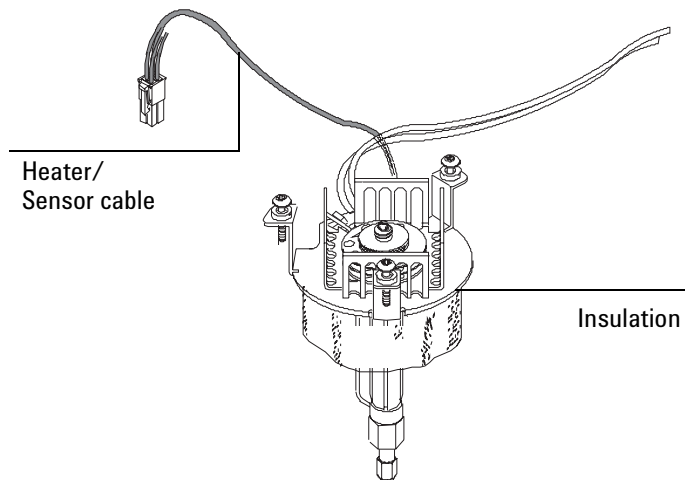
3. Place the insulation on the inlet base so the CO₂ CryoBlast weldment fits through the slit in the insulation.



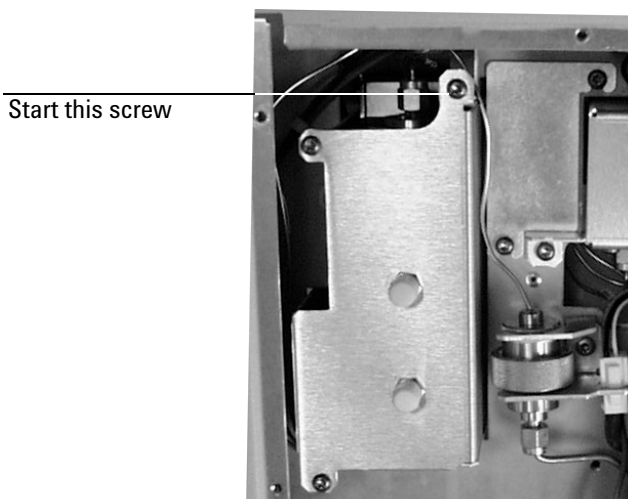
4. Place the inlet and CO₂ CryoBlast weldment so it lines up with each screw hole in the oven top and the heater/sensor cable sits in the trough in the inlet chassis. Start the screws in the slots, but leave them loose.

Installing a Cool On-Column Inlet
Remove the existing inlet

Open the lid to check that the items are positioned correctly, and then close the lid.



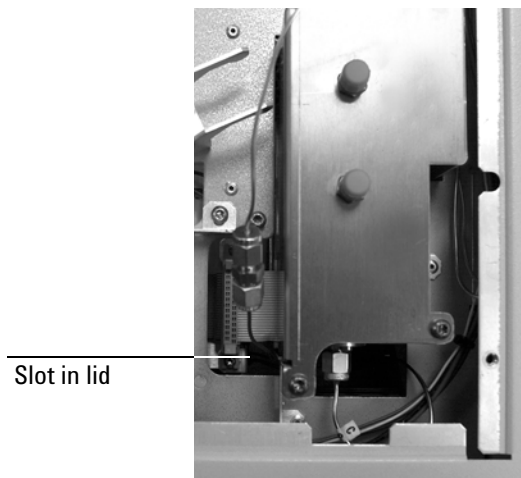
5. Place the flow module as shown. Start the screw in the back. Install the "C" tube to the flow module input fitting and connect the ribbon cable.



6. Route tubing around the flow module and side of the lid.
7. Tighten the screws to secure the inlet body in place.
8. Open the lid and install cavity sleeve to keep the insulation in place. Close the lid when finished.



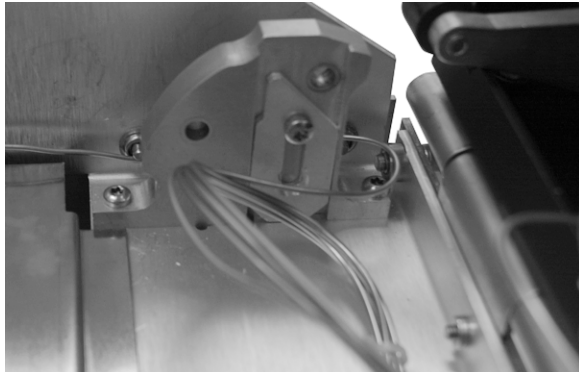
9. Feed the cryo tubing from the inlet around the front of the flow module and through the slot in the lid.



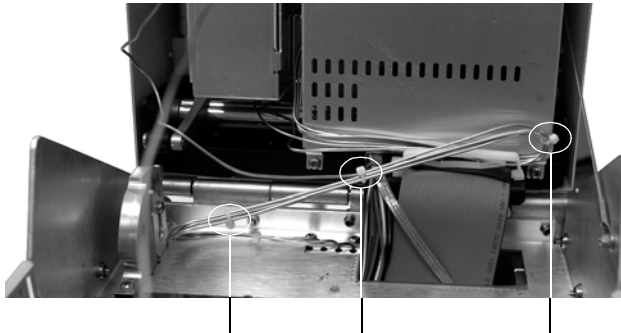
10. Open the lid and raise it to the service position.
11. Pull the tubing the rest of the way through the slot in the lid and wrap it into a lazy 'S' shape.
12. Connect the other half of the tube.
13. Loosen the electronics cover.

Installing a Cool On-Column Inlet
Remove the existing inlet

14. Route the tube as shown. To avoid crushing the tubing, do not let it obstruct the cam and follower.



15. Use the tie wraps to secure the tubing.

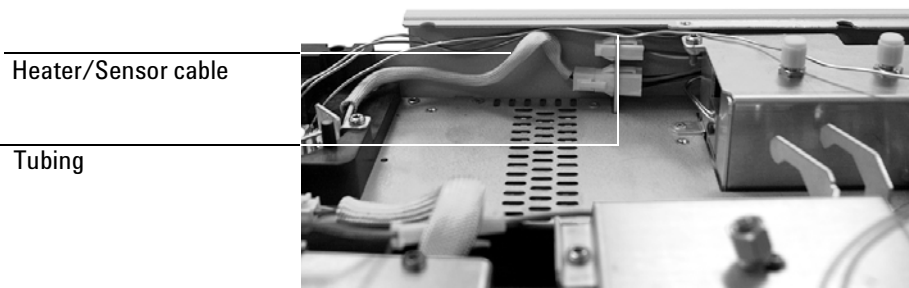


Tie wraps

16. Feed the lower half of the CryoBlast tubing into the correct slot in the electronics cover and out of the GC. If CryoBlast is already installed, loosen the mounting bracket to provide enough room to push the tubing through.



17. Install the nut and ferrule set onto the tubing.
18. From the left side of the GC, locate the heater/sensor cable and its corresponding connector. Tuck the cable underneath the clip at the side of the GC and connect it to the nearest square connector.



19. Route the stainless steel tubing along the side of the chassis, around the fan bracket, and into the flow module.

Install cryogenic oven cooling

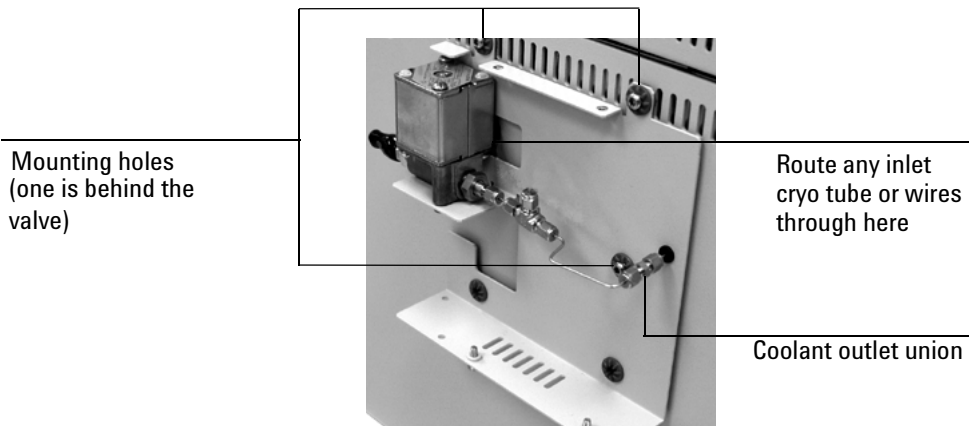
If you will be using cryogenic oven cooling, install the CO₂ Cryogenic Oven Cooling kit before you finish installing this inlet.

Installing a Cool On-Column Inlet

Remove the existing inlet

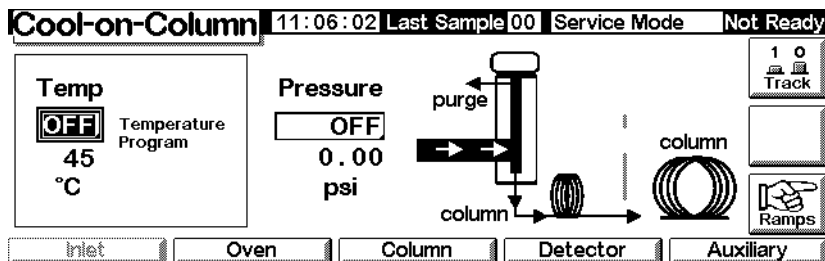
There are some specific instructions for the cool on-column inlet when installing the chassis for the cryo oven. See the directions for that kit for more information.

1. Pull any inlet cryo tube or wires through the hole on the side of the GC.
2. There are four mounting holes for the chassis on the left side of the GC (two of them are in the row of ventilation slots at the top). Place the chassis over the holes. Insert screws through the brass eyelets and secure them loosely. The small black grommet behind the coolant outlet union should be over the smaller hole in the side panel.



Restore the GC to operating condition

1. Install the lid top cover.
2. Plug in the GC and turn it on.
3. Press Inlet. If the you have configured the GC correctly, the following screen appears.



Note: A pressure value is displayed when the carrier gas is off or not connected. This is not an error. After the carrier gas is connected and the inlet is zeroed, the pressure value equals the setpoint value.

4. Restore carrier and other gases to the instrument.
5. Apply your normal operating pressures. Leak-check the flow module, back panel, and column fittings.

Zero the pressure sensor

You must zero the pressure sensor of the inlet's flow module after installing it on the GC. Doing so ensures an accurate inlet pressure display.

Do not connect the carrier gas to the flow module until you have zeroed the pressure sensor.

1. Plug in the GC and turn it on.
2. Wait 15 minutes. Doing so allows the GC to reach thermal equilibrium. Display this screen.

Status / Service / Calibration / Inlet Cal

Calibration		12:17:32	Last Sample 00	Default+	Not Ready
Las	Inlet Calibration				ZERO FLOW
☒ Enable Auto Flow Zero					ZERO PRESS
Pressure	Zero	Flow	Zero		
0.00	0.00	0.0	0.00		
psi		mL/min			OK

3. Select Enable Auto Flow Zero to automatically recalibrate the zero at the end of every run.
4. **To zero the flow sensor manually**, press ZERO FLOW. The inlet flow will be momentarily interrupted. The process takes about 2 seconds.

To zero the pressure sensor, turn the carrier gas off at the source. Separate one of the connections in the supply tubing to be certain that there is no pressure trapped in the plumbing. Press ZERO PRESS.
5. Restore normal carrier gas flow.
6. Turn off the GC and unplug the power cord.
7. Plumb the carrier gas to the flow module.
8. Plug in the GC and turn it on.
9. Configure the GC's column and carrier gas.



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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.

In the manual

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

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

On the instrument



See accompanying instructions for more information.



Indicates a hot surface.



Indicates hazardous voltages.



Indicates earth (ground) terminal.



Indicates explosion hazard.



Indicates radioactivity hazard.



Indicates electrostatic discharge hazard.



Indicates pinch hazard.

Installing a Cool On-Column Inlet
Zero the pressure sensor