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Agilent G4405A 0–100 PSI Split Splitless EPR Inlet

For the Agilent 7820A Gas Chromatograph

Installation Instructions

CAUTION

This guide explains how to install the Agilent G4405A 0–100 PSI Split Splitless EPR Inlet.

Before installing the Agilent G4405A 0–100 PSI Split Splitless EPR Inlet, update the GC firmware to revision **A.01.18** or higher and the GC driver to **B.01.01** or higher. See "Update the GC firmware revision" and "Update the GC driver version" on page 4.

Compatibility Information

The Agilent 7820A GC supports both EPR (electronic pneumatics regulation) and EPC (electronic pneumatics control) inlets and detectors. It is possible to use some EPR components along with some EPC components. Table 1 specifies the allowable configurations.

Table 1 Allowable inlet and detector configurations

Configuration	Location	Inlet	Detector
All EPR	Front	EPR	EPR
	Back	EPR	EPR
All EPC	Front	EPC	EPC
	Back	EPC	EPC
EPC Inlets/EPR Detectors	Front	EPC	EPR
	Back	EPC	EPR

Parts Supplied

Table 2 Parts supplied

Description	Quantity	Part Number
Split/Splitless 0—100 PSI EPR Inlet	1	G4352-60502
Split/Splitless Warmup Assembly		G4352-60507
Cover, lower insulation	1	19243-00070
Capillary cup insulation	1	19243-00067
Capillary cup insulation top	1	19243-00068
Capillary cup insulation bottom	1	19243-00069
Screw, machine, M4 x 0.7 mm 12mm	2	0515-2711
Trap key	1	G3452-00005
Screw, machine, M4 x 0.7 mm 12mm	4	0515-2496
Insulation bottom	1	G3432-00003
Split/Splitless insulation block	1	G3452-00002
7820 SSL inlet ship kit		G4352-60550
Column hanger	1	
Liner, split/splitless, glass wool deactivated	1	
Low bleed septa, 11-mm (5/pk)	1	
Wrench for SSL inlet, nut angled	1	
O-rings 2-010,Fluoroelastomer (5/pk)	1	
7820 Inlet Accessory Package	1	G4352-60508

Parts Identification

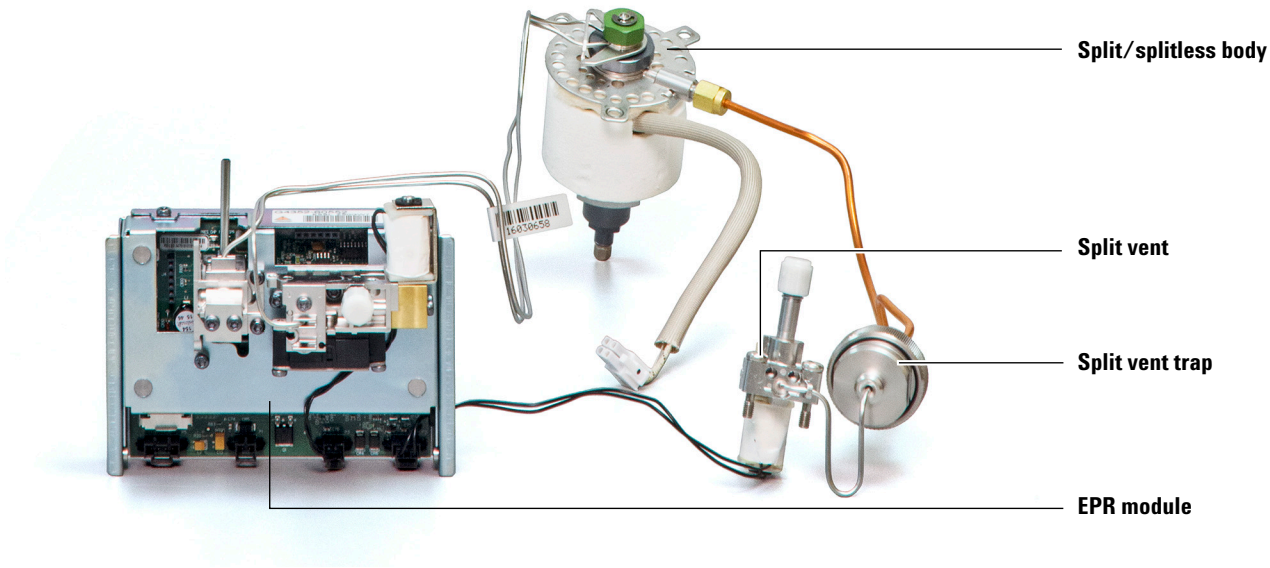

Figure 1 Split/splitless inlet parts identification

Tools Required

- T-20 Torx driver
- Diagonal sheet metal cutters
- Razor knife or flat-blade screwdriver
- 7/16-inch wrench
- ESD wrist strap

Software Required

- Agilent 7820A GC Software Keypad with Data Analysis

Installation

This procedure explains how to install the 0–100 psi split/splitless (SSL) inlet accessory on the Agilent 7820A Gas Chromatograph (GC).

WARNING **Refer to the Safety Manual that came with your Agilent 7820A Gas Chromatograph for hazards that may exist when maintaining your instrument.**

Update the GC firmware revision

The 7820A 0–100 psi Split Splitless (SSL) EPR inlet requires 7820A GC firmware revision A.01.18 or higher.

CAUTION Before installing the 7820A 0–100 psi Split Splitless (SSL) EPR inlet onto the GC, power on the GC, and update the firmware to revision A.01.18 or higher.

To update the GC firmware revision:

1 Connect to the GC with the software keypad.

2 Click [**Status**][**Clear**]. The firmware version is displayed on the software keypad.

NOTE The currently installed firmware version can also be checked by power cycling the GC. The firmware version is displayed after the GC successfully reboots.

3 If the GC firmware version is earlier than **A.01.18**, use the Agilent GC Firmware Update Tool to update the firmware. (To obtain the latest firmware revision, visit http://www.agilent.com and search for `GC firmware update`.)

Update the GC driver version

The 7820A 0–100 psi Split Splitless (SSL) EPR inlet requires the use of GC Driver version **B.01.01 or higher**. Check the GC Driver version used in your Agilent data system, and update as needed.

NOTE Customers who perform software qualification should review their SOPs, risk assessment, and other regulatory considerations to determine whether the instrument drivers update requires a software requalification.

Agilent GC Drivers provide control of 7820 in the following Agilent data systems:

- G17xxFA GC/MS MassHunter Acquisition
- M84xxAA OpenLAB CDS
- M83xxAA OpenLAB CDS ChemStation Edition
- M82xxAA OpenLAB CDS EZChrom Edition
- G4691AA EZChrom Elite (3.3.2 SP2 or higher)
- M207xBA Multi-Technique ChemStation (B.04.03 SP2 or higher)

Prepare the GC

1. Connect to the GC with the software keypad.
2. Cool the GC to room temperature.
3. If this new inlet is replacing an existing inlet, even one of the same type, *unconfigure* the existing inlet (refer to the 7820A Advanced User Guide for details).
4. Turn off the GC, and unplug its power cord.
5. Turn off all gas supplies.
6. Remove the detector cover as follows:
   a. Open the detector cover to its vertical position.
   b. Disengage the cover from the hinges, right side first.
   c. Remove the detector cover from the GC.
7. Remove the pneumatics cover as follows:
   a. Remove the screw on the side of the pneumatics cover.
   b. Loosen the two screws on the back of the pneumatics cover.
   c. Remove the pneumatics cover from the GC.
8. Remove the gray inlet cover by removing the six screws securing it to the GC.
9. Put on an ESD wrist strap, and attach the ground to the GC sheet metal frame for electrostatic protection.

Prepare the inlet mounting

It is assumed in the following instructions that the inlet location to be used has had no previous inlet installed. If there was a previous inlet, some of the following steps will already be done. (Ensure all previous inlet components have been removed and stored safely for possible future use). If a packed inlet was previously installed in this location, remove the metal plate in the oven covering the larger opening.

1 Remove the round metal cutout at this location using diagonal cutters. (See Figure 2.) Make the cuts so that the metal nubs remain attached to the discarded metal circle.

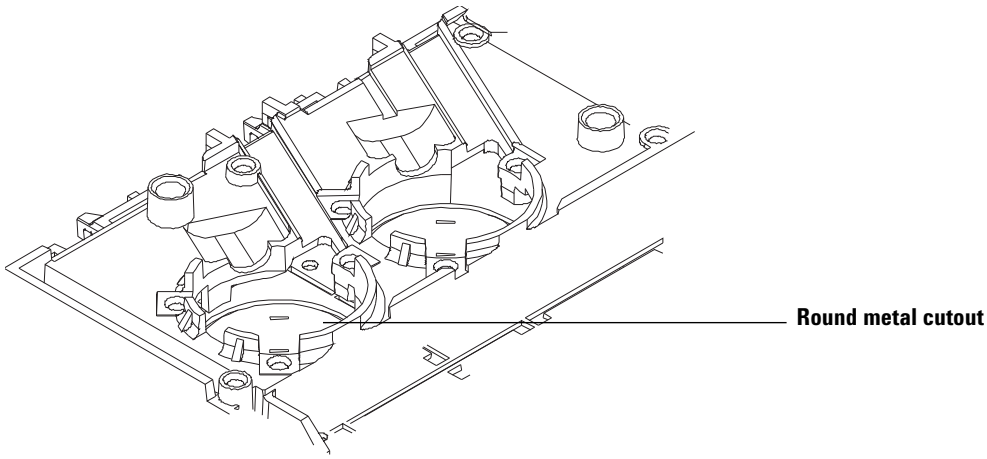

Figure 2 Inlet cutout removal

2 Remove the insulation plug from the exposed inlet position. (See Figure 3.)

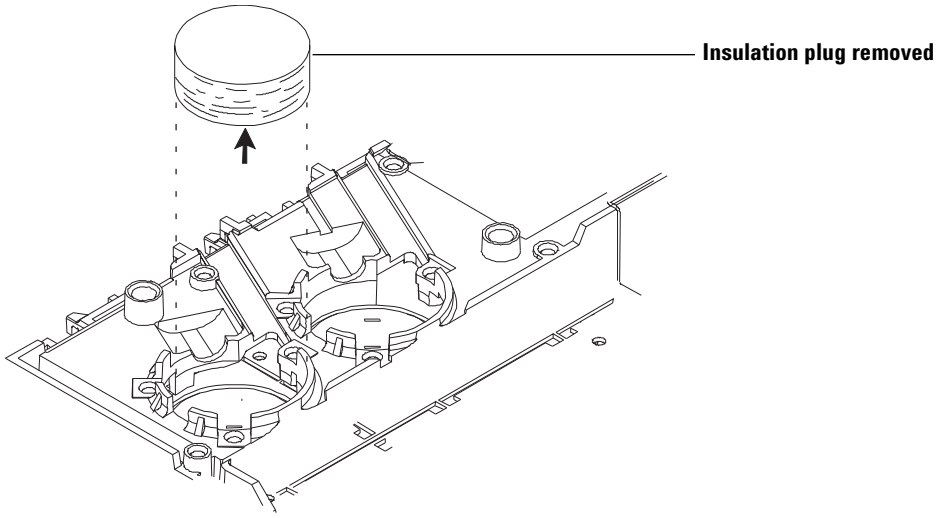

Figure 3 Insulation plug removal

3 Carefully remove the scribed circle of insulation from the oven top to create an opening into the oven: use a razor knife to cut out the insulation using the scribed circle as a guide. (See Figure 4.)

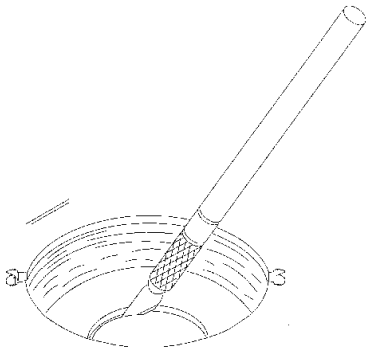

Figure 4 Inner insulation removal

Alternatively, pierce the insulation with a screwdriver. Rotate the screwdriver around the circumference of the scribed circle to remove excess insulation.

4 Clean up any insulation that falls inside the oven.

Install the inlet module

Install the SSL inlet

CAUTION When handling the detector flow tubing, avoid bending the tubing at sharp angles.

1 Carefully uncoil the tubing between the inlet body, its EPR module, and the split vent filter assembly (see Figure 1 on page 3). Lay the entire assembly on the oven top with the inlet near its intended location, the EPR module near its associated location in the EPR module bays, and the split vent trap assembly in its associated location.

2 Place the bottom insulation in the inlet cavity.

3 Place the inlet in its prepared location with its three screws aligned with the holes in the carrier top and its heater cable sitting in the trough in the inlet chassis. (See Figure 5.)

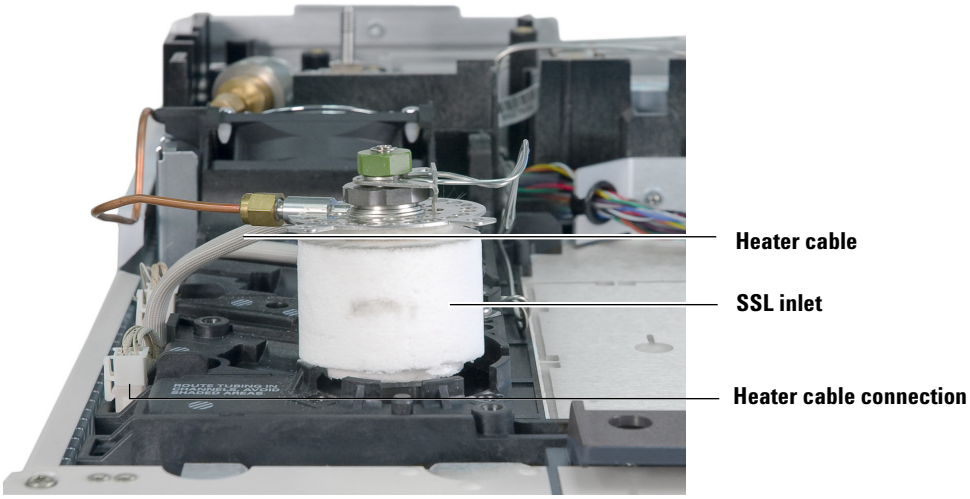

Figure 5 Inserting the SSL inlet

4 To secure the SSL inlet to the GC chassis, start each screw one at a time to ensure the inlet is aligned and screws are properly threaded. Then tighten each screw in turn evenly until snug. See Figure 6.

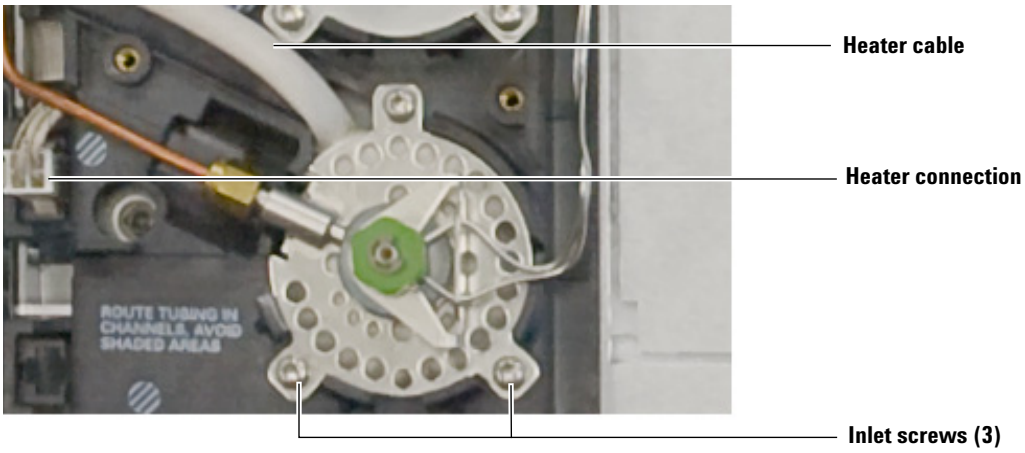

Figure 6 SSL inlet installed

5 From the left side of the GC, locate the heater cable and its corresponding connector plug. Tuck the heater cable underneath the routing tab at the side of the GC and connect it to the heater connector.

Install the split vent assembly

1 Route the tubing from the inlet to the split vent trap as shown below, being careful that the tubing does not interfere with the left side cover placement. (See Figure 7.)

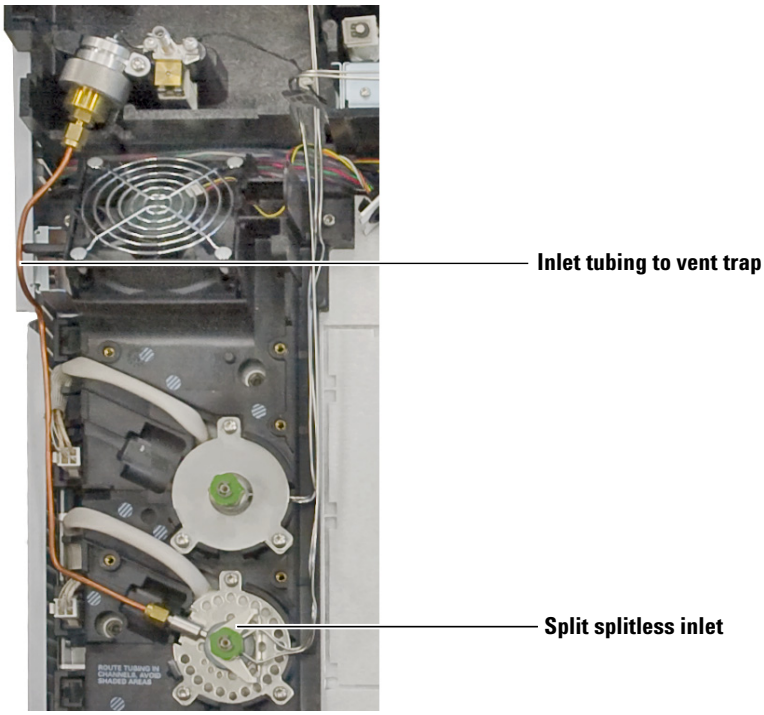

Figure 7 Routing the inlet tubing

2 Install the split vent filter into the appropriate housing, making sure that the flat sides on the split vent filter are vertical. The split vent filter will lock into place when properly installed. (See Figure 8.)

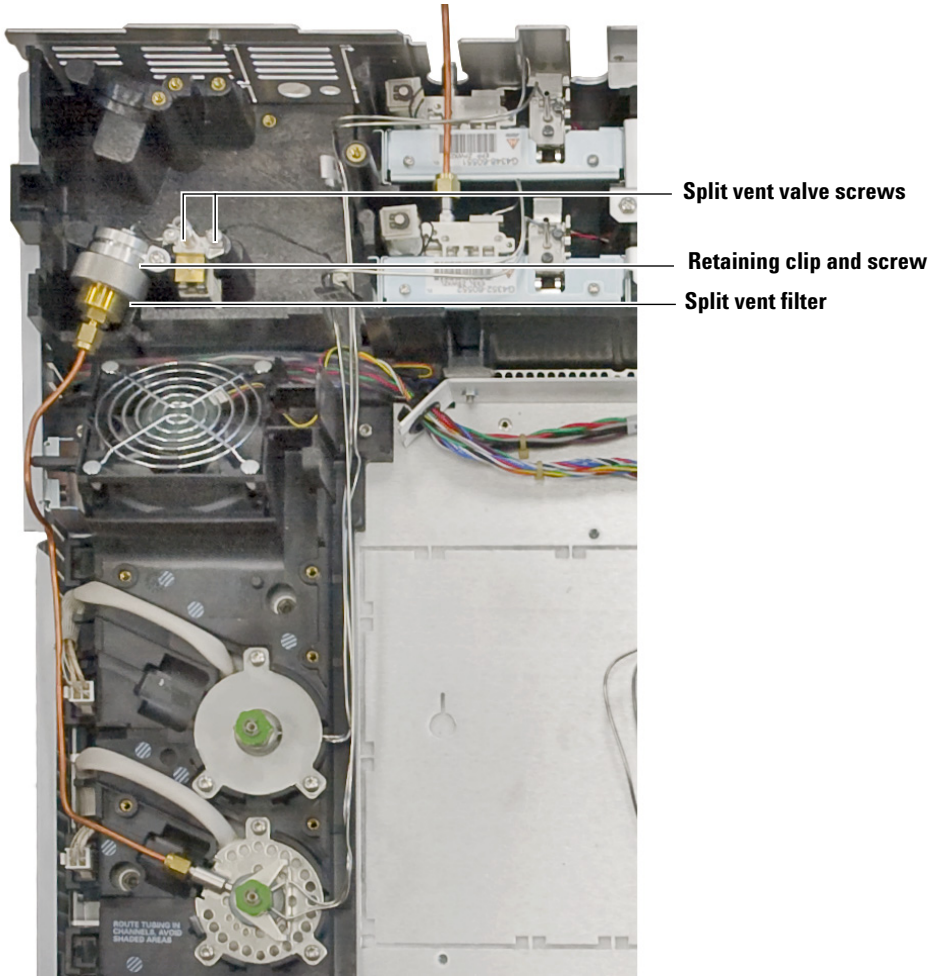

Figure 8 Split vent filter assembly fully installed

3 Align the split vent valve assembly over the two screw holes and secure using two captive screws.

4 Install the split vent filter retaining clip with one screw to secure the split vent filter.

Install the EPR module

1 Remove the EPR module bracket adjacent to the inlet EPR module by loosening the captive screw and lifting the bracket off the GC. (See Figure 9.)

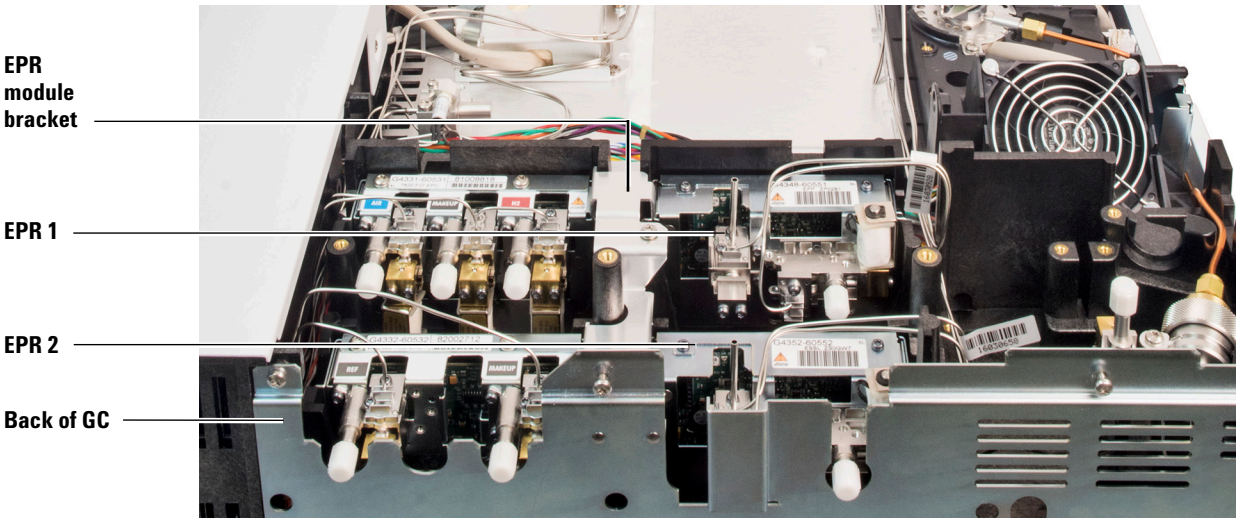

Figure 9 EPR module locations (shown with EPR modules installed)

2 Locate the communications cable in the inlet module EPR bays area, and plug it into the connector located on the EPR module's PC board. See Figure 10.

Table 3 Inlet location and associated EPR information

Inlet location	EPR bay location	Communications bus connection
Front	forward	EPC1
Back	rearward	EPC2

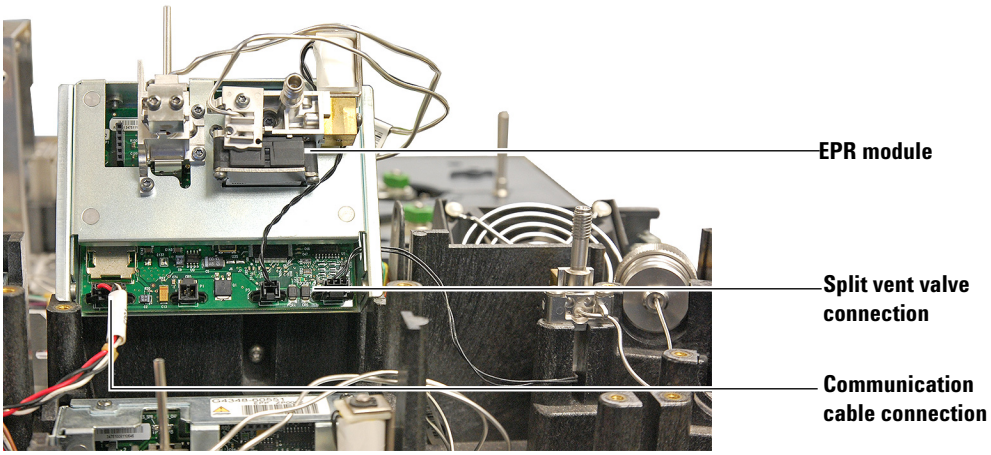

Figure 10 Communication cable and split vent valve wire connections on EPR module

3 Connect the split vent valve wire from the split vent assembly to the split vent valve connector on the EPR module.

4 Vertically slide the EPR module fully into its slot being careful not to pinch the wires.

5 Position the EPR module bracket, and secure with screw.

6 Route tubing from the EPR module through the large passage provided on the inlet side of the EPR bay. (See Figure 11.)

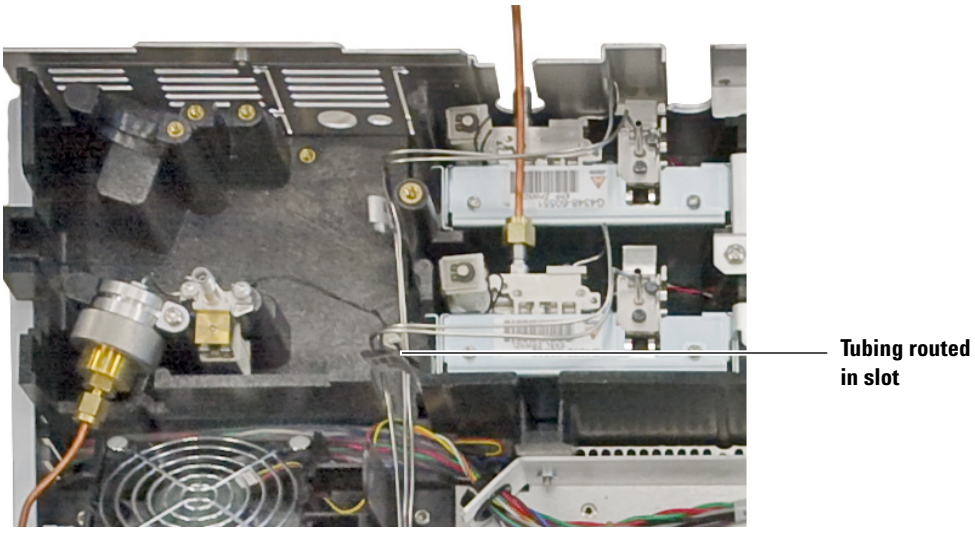

Figure 11 EPR module installed and pneumatic tubing properly routed

Installing the nutwarmer cup

1 Place the insulation in the nutwarmer cup. (See Figure 12.)

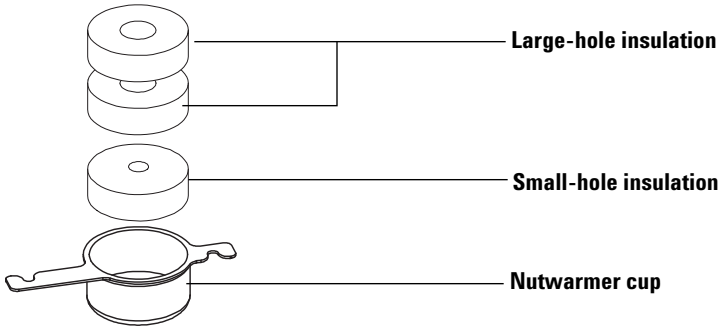

Figure 12 Placing the insulation in the nut warmer cup

2 From inside the oven, install the two heat-resistant screws in the cutouts adjacent to the inlet opening. Do not tighten the screws. Place the nutwarmer cup slots into the screws and tighten the two screws to complete installation. (See Figure 13.)

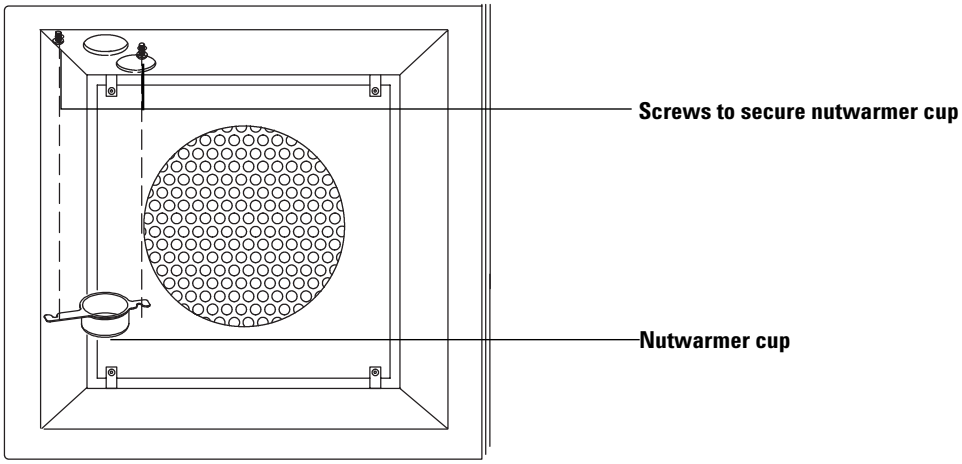

Figure 13 Installing the nutwarmer in the oven

Restore the GC to operating condition

1. Replace all instrument covers in the reverse order that they were removed.
2. Plug in the GC, and turn on its power.
3. Ensure the GC is connected to the Agilent 7820A GC software, and access the GC operation keypad. For more information on connecting to the software, see the GC Advanced User Guide.
4. On the software keypad, click **[Config]**, then **[Front Inlet]** or **[Back Inlet]**.
5. On the unconfigured parameter, click **[Mode/Type]**.
6. Click **[Enter]**. A caution message will appear instructing you to reboot.
7. Reboot the GC.
   a. Click **[Options]**.
   b. Scroll to **Communications**, and click **[Enter]**.
   c. Scroll to **Reboot the GC?**, and click **[On/Yes]** twice to reboot the GC and have the changes take effect.
8. The new EPR you have installed must be properly calibrated before the inlet is ready for application use. Calibrate it as follows:
   a. Press [**Options**], then scroll to [**Calibration**] and press [**Enter**].
   b. Scroll to **Pressure zero**.
   c. With the gases disconnected, press [**On/Yes**].
   d. Connect the carrier gas to the inlet.
   e. Configure the carrier gas type.
   f. Press [**Config**], then [**Front Inlet**] or [**Back Inlet**].
   g. Scroll to the carrier gas type, then press [**Mode/Type**] to set the carrier gas type.
   h. Set gas source pressures, and turn on the flow at the source.
   i. Check for leaks, and correct any leaks. Typically, set carrier gas pressure to 550 kPa (80 psi). (See the GC site preparation and installation manuals for details.)
   j. Press [**Front Inlet**] or [**Back Inlet**], and verify the flow is turned off.
   k. Press [**Options**], then scroll to [**Calibration**], and press [**Enter**].
   l. Scroll to **Flow zero**, and press [**On/Yes**].

Agilent Technologies

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