

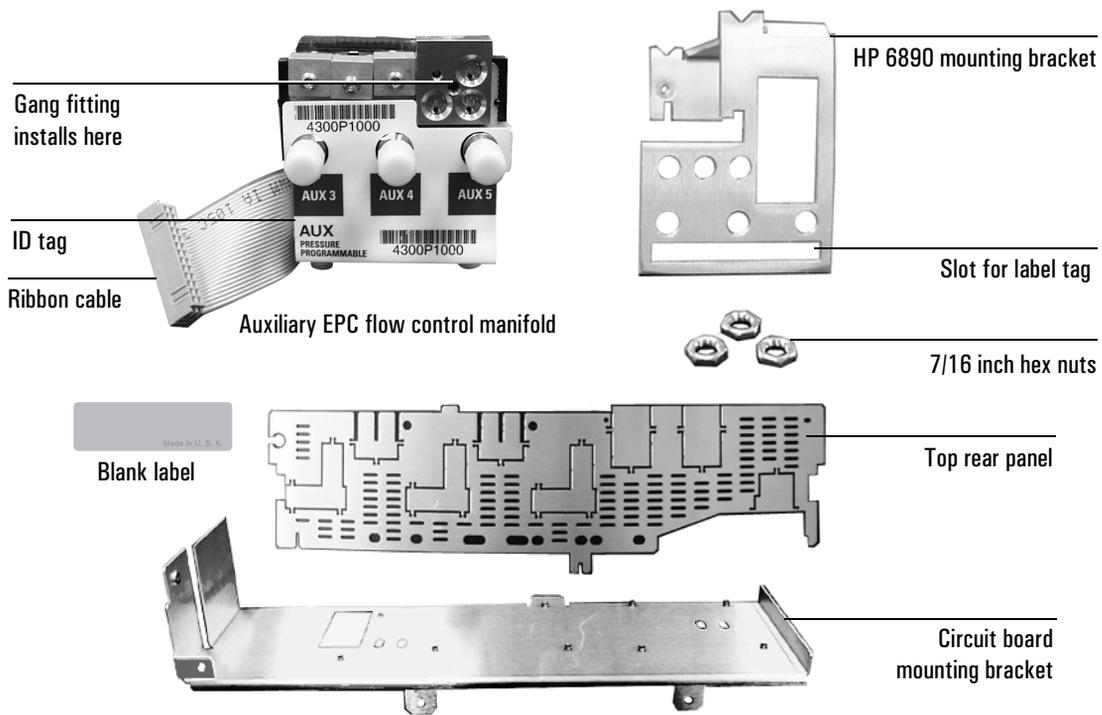
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# Installing the Auxiliary EPC Flow Control Manifold

The Auxiliary EPC Flow Control Manifold kit, can be used to replace any HP 6890 Series Auxiliary EPC flow control manifold.

This kit contains:

<b>Kit G1570-60720</b>	<b>Qty.</b>
Auxiliary EPC flow control manifold	1
Mounting bracket, HP 6890	1
Top rear panel	1
Installation sheet (this document)	1
Blank label	1
PCB bracket	1
Screw, M4 x 0.7 x 10 mm	1
Hex nut, 7/16 inch	3



**Figure 1** Auxiliary EPC flow control manifold replacement kit

### Tools required

- 7/16 inch open-ended wrench
- T-20 Torx driver
- Needle-nosed pliers

### Safety information

Before continuing, read the safety information in your *GC Operating Manual*.

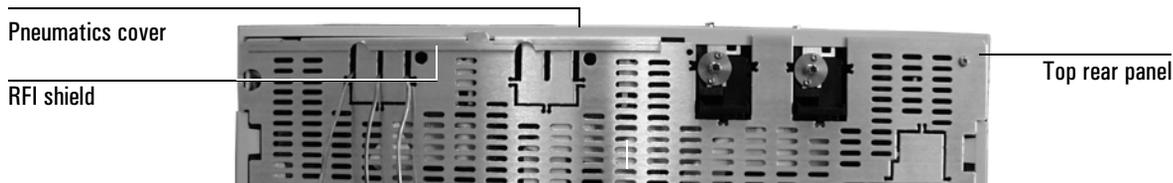
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## Removing the existing manifold

**WARNING** Hydrogen gas is flammable and potentially explosive. Before replacing the manifold, turn off the hydrogen gas at the source.

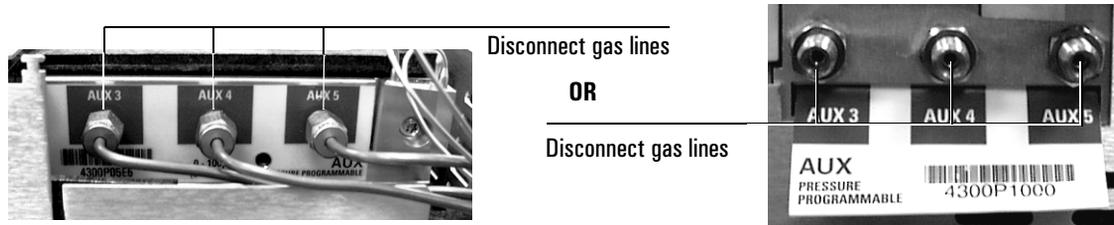
**WARNING** Before proceeding, turn off the oven and any heated zones and let them cool down. Turn off all detector gases at their supply, then turn off the main power switch and unplug the power cord.

1. Remove the pneumatics cover and the RFI shield under it. See Figure 2.



**Figure 2** Back view of HP 6890

2. Remove the gas supply tubing from the present manifold. See Figure 3.

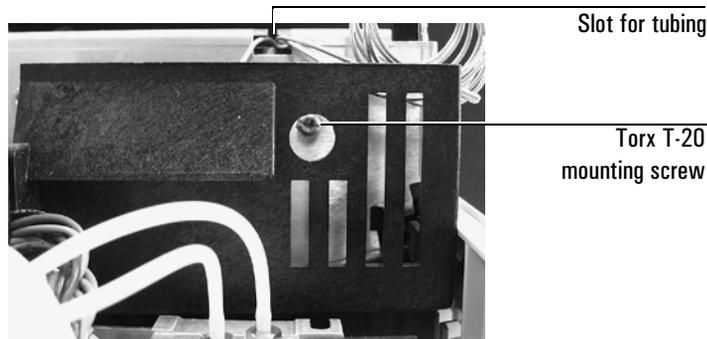


**Manifold, installed before May 1998**

**Manifold, installed after May 1998**

**Figure 3** Remove the gas connections

3. Remove the detector cover, the electronics cover, the right side cover, and the top rear panel.
4. Remove the Torx T-20 mounting screw from the front of the manifold. See Figure 4.



**Figure 4 Removing the auxiliary flow manifold**

5. Disengage the tubing from the slots in the chassis so that the gang fitting on the manifold can be removed easily. See Figure 4.

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**Caution**

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Make sure you are properly grounded with an ESD strap before continuing.

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**Caution**

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Always hold the manifold by its support bracket to avoid damaging board components.

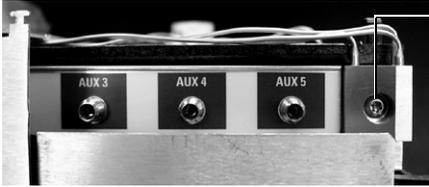
6. Unlock the manifold's ribbon cable from the pneumatics control board and detach the connector. The adjacent ribbon cable may have to be removed as well.
7. Remove the one Torx T-20 screw holding the gang fitting on the manifold. See Figure 5.

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**Caution**

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Do not lose the O-rings when you remove the gang fitting.



Remove screw  
and gang fitting



Manifold, installed before September 1998

Manifold, installed after September 1998

**Figure 5** Removing the gang fitting

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## Replacing the PCB bracket

1. Compare the PCB bracket under the pneumatics PC board with the one included in the accessory kit. Check for the differences in the three mounting screw tabs. If they are the same, proceed to the next section. If they are different, the existing bracket must be replaced with the new one.

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### **WARNING**

The rest of this procedure must be performed only by Hewlett-Packard service personnel. Before proceeding, confirm that the main power switch is turned off and that the power cord is disconnected from the power source.

2. Remove the GC lower back panel.

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### **Caution**

Make sure you are properly grounded with an ESD strap before continuing.

3. If an MIO card is present, remove it and the jumper card.
4. Disconnect all cables from the pneumatics PC board.
5. Trace the ribbon cable on the end of the board to the main board and disconnect it there. Feed the cable up through the PCB bracket to the top.
6. Remove the screws holding the PCB bracket and slide it and the board out of the GC.
7. Remove the eight screws that fasten the board to the PCB bracket. Transfer the board to the new bracket and secure it with the eight screws.
8. Slide the board and bracket assembly back into the GC. Use the 10 mm screw provided in the kit for the left-most position, on the side of the GC. Use the screws removed earlier for the other positions.
9. Pass the ribbon cable down through the slot in the PCB bracket and connect it to the main board. Reconnect all cables to the pneumatics board.
10. Re-install the MIO card and the jumper card.
11. Re-install the lower back panel.

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## Installing the new manifold

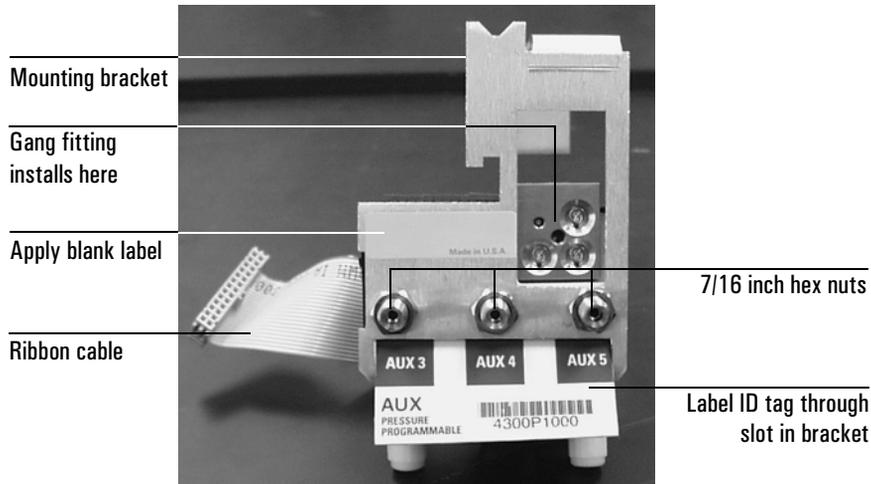
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### Caution

Always hold the manifold by its support bracket to avoid damaging board components.

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1. Slip the ID tag on the new manifold through the slot in the mounting bracket, then align the bracket holes over the gas fittings. Secure the bracket with three 7/16 inch hex nuts. See Figure 6.



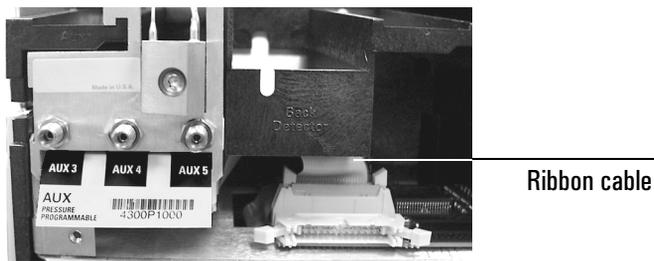
**Figure 6 Bracket mounted onto the manifold**

2. Peel the blank label from its backing and paste it on the mounting bracket over the screw heads. See Figure 6.
3. If the tubing from the gang fitting bends to the left, reshape it so that it bends up and back from the block as shown in Figure 8.

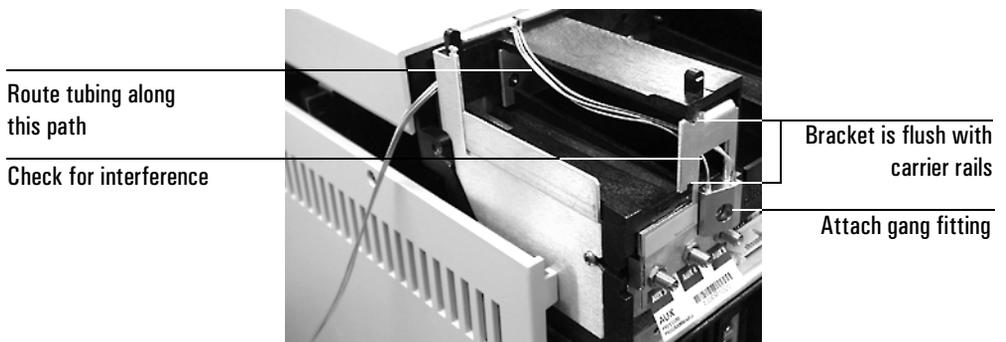
4. Insert the gang fitting through the cutout in the manifold bracket and install it onto the new manifold assembly so that the tubing runs back and away from the fitting.
  - Be sure that the three O-rings are in place.
  - Be sure the left tube clears the inner edge of the bracket. See Figure 8.

Tighten the screw on the gang fitting until the gang fitting touches the manifold.

5. Route the ribbon cable to the right side of the manifold assembly as shown in Figure 7. Then, slide the manifold and bracket assembly into the Aux slot until the bracket seats flush against the end of the rails. See Figure 8.

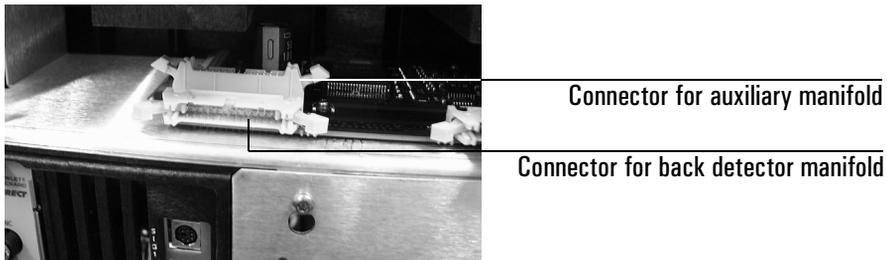


**Figure 7 Routing the ribbon cable**



**Figure 8 Manifold, after installation**

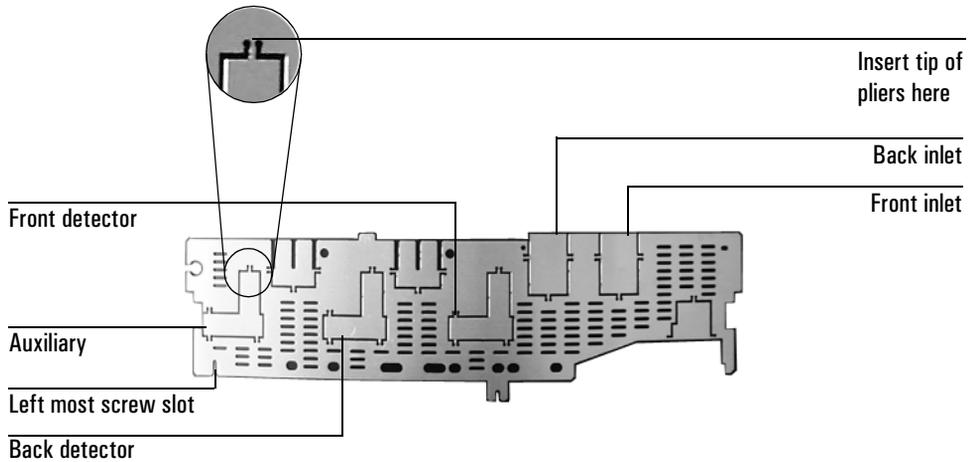
6. Route the gas tubing behind the manifold, over the top of the chassis, and through the slots as shown in Figure 4 and Figure 8.
7. Connect the ribbon cable to the mating connector on the pneumatics board. This is behind the connector for the back detector and faces up. See Figure 9.
8. Secure the manifold in place using the Torx T-20 mounting screw. See Figure 4.



**Figure 9 Auxiliary and back detector connectors**

9. If the detector cable is in the way, remove it temporarily while you connect the Aux cable. Arrange the cable to keep it away from the valves and keep it from being pinched against the manifold.

- Using a pair of needle-nosed pliers, remove the top rear panel cutout for Auxiliary. Also remove any cutouts needed to access other manifolds or accessories installed in the GC. See Figure 10.



**Figure 10 Top rear panel cutouts**

- Place the new top rear panel on its left-most mounting screw. Use the screw as a hinge and angle the panel while sliding each manifold ID tag through its cutout in the panel, working from left to right. When all the tags are through the panel, finish installing the panel on the GC.
- Install the RFI shield, the pneumatics cover, and the detector top cover.

13. Connect the source gas lines to the manifold. See Figure 11.



**Figure 11 Gas line connections**

14. Restore gas pressures and leak check all fittings.

