

Installing the Micro Electron Capture Detector EPC Flow Control Manifold

The Micro Electron Capture Detector (μ ECD) EPC Flow Control Manifold kit can be used to replace any HP 6890 Series μ ECD EPC flow control manifold. This kit contains:

| Kit G1534-60720 | Qty. |
|-------------------------------------|------|
| μ ECD EPC flow control manifold | 1 |
| Mounting bracket, HP 6890 | 1 |
| Top rear panel | 1 |
| Installation sheet (this document) | 1 |
| Blank label | 1 |
| Hex nut, 7/16 inch | 3 |

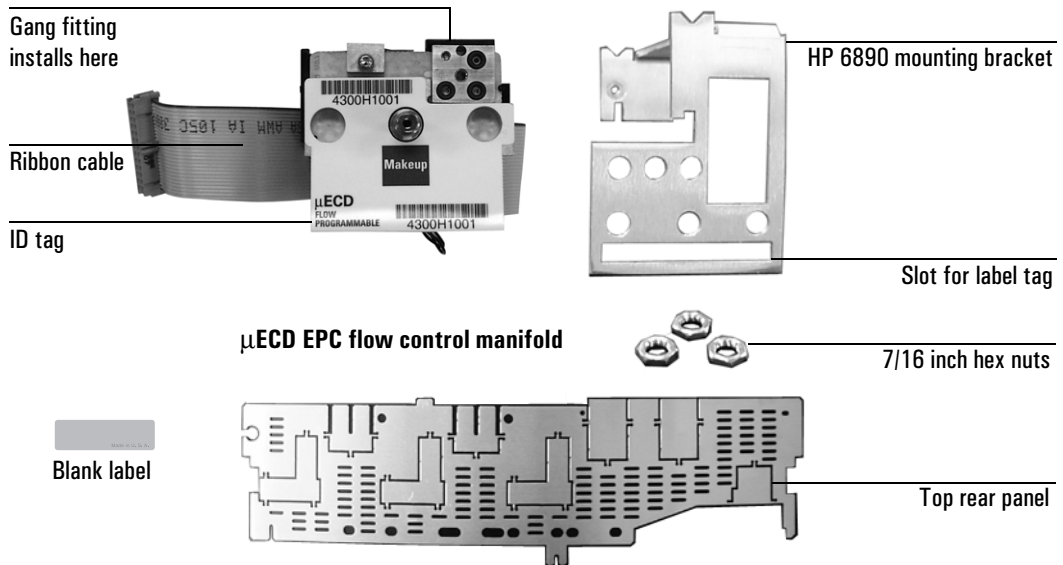


Figure 1 μ ECD EPC flow control manifold replacement kit

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*.

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.

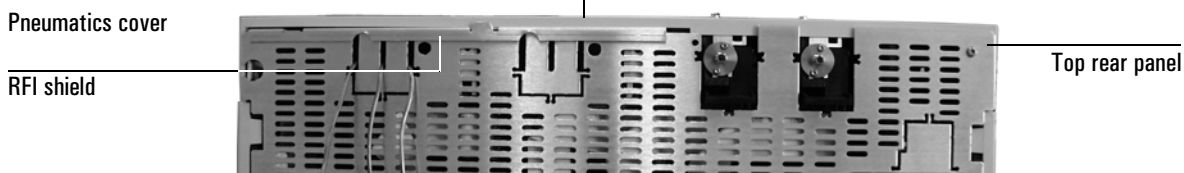


Figure 2 Back view of HP 6890

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

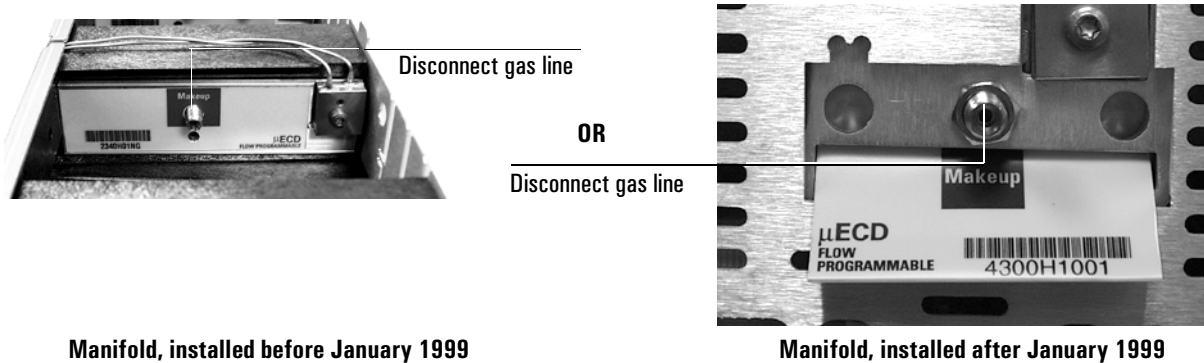


Figure 3 Remove the gas connection

3. Remove the detector cover and the top rear panel.
4. Remove the Torx T-20 mounting screw from the front of the manifold to be removed. See Figure 4.

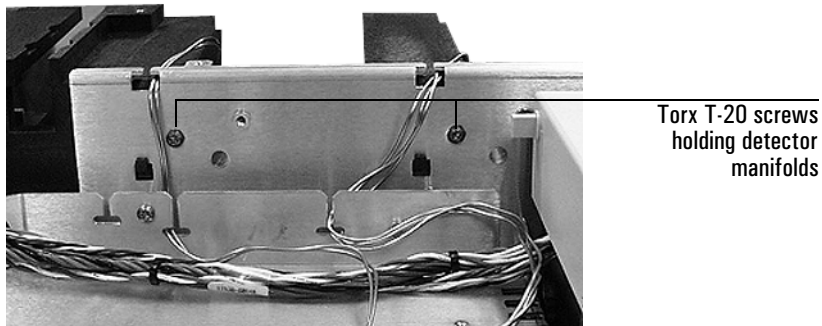


Figure 4 Removing the detector flow manifold

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

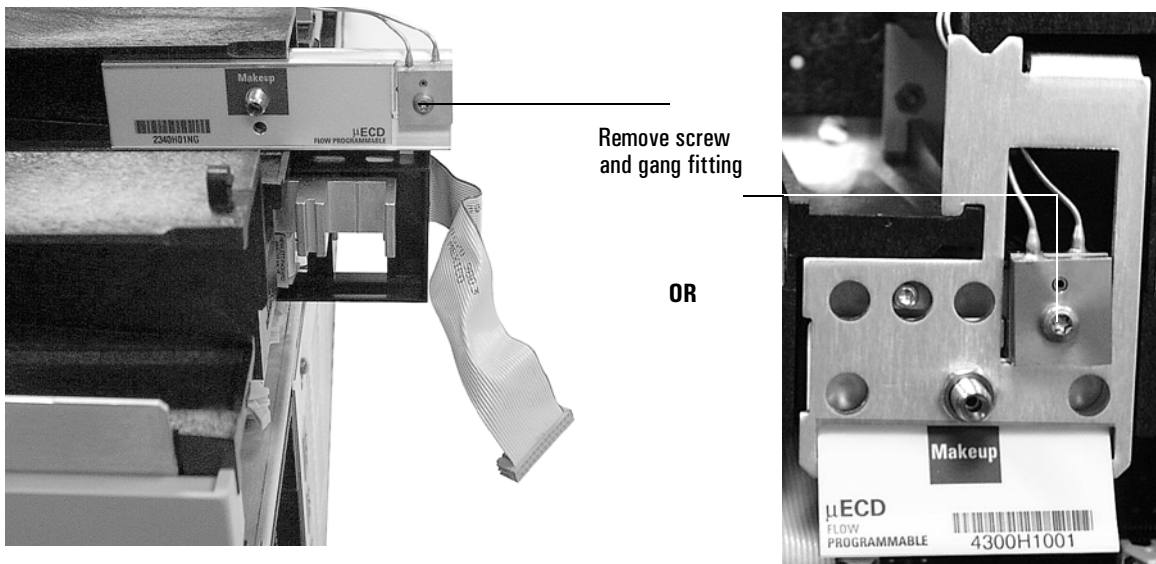
Caution

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

6. Unlock the detector 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. If you are removing a manifold that was installed before January 1999, slide it a few centimeters out of its slot in the pneumatics carrier. See Figure 5.
8. Remove the one Torx T-20 screw holding the gang fitting on the manifold. See Figure 5.

Caution

Do not lose the O-rings behind the gang fitting.



Manifold, installed before January 1999

Manifold, installed after January 1999

Figure 5 Removing the gang fitting

Installing the new manifold

Caution

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

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.

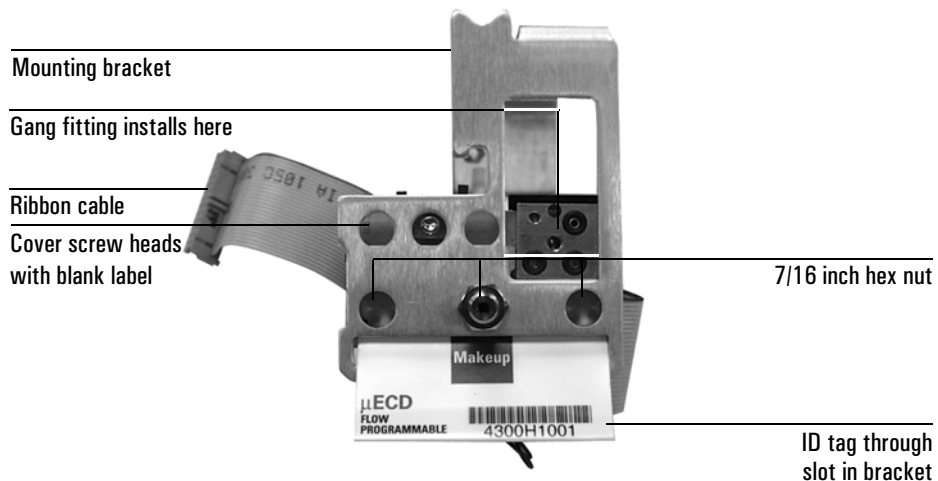


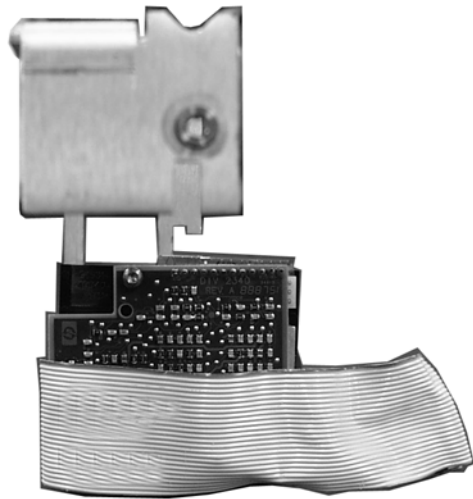
Figure 6 Bracket mounted onto the manifold

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.

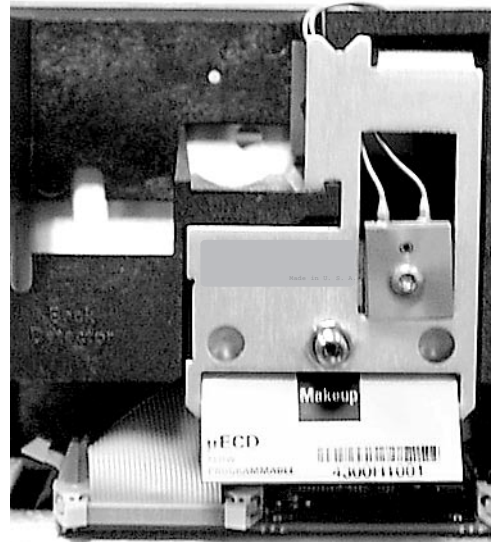
- Be sure the left tube clears the inner edge of the bracket. See Figure 8.
- Be sure that the O-rings are in place.

Tighten the gang fitting screw firmly to compress the O-rings.

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



Back view of manifold



Manifold installed with cable routed to left

Figure 7 Routing the ribbon cable

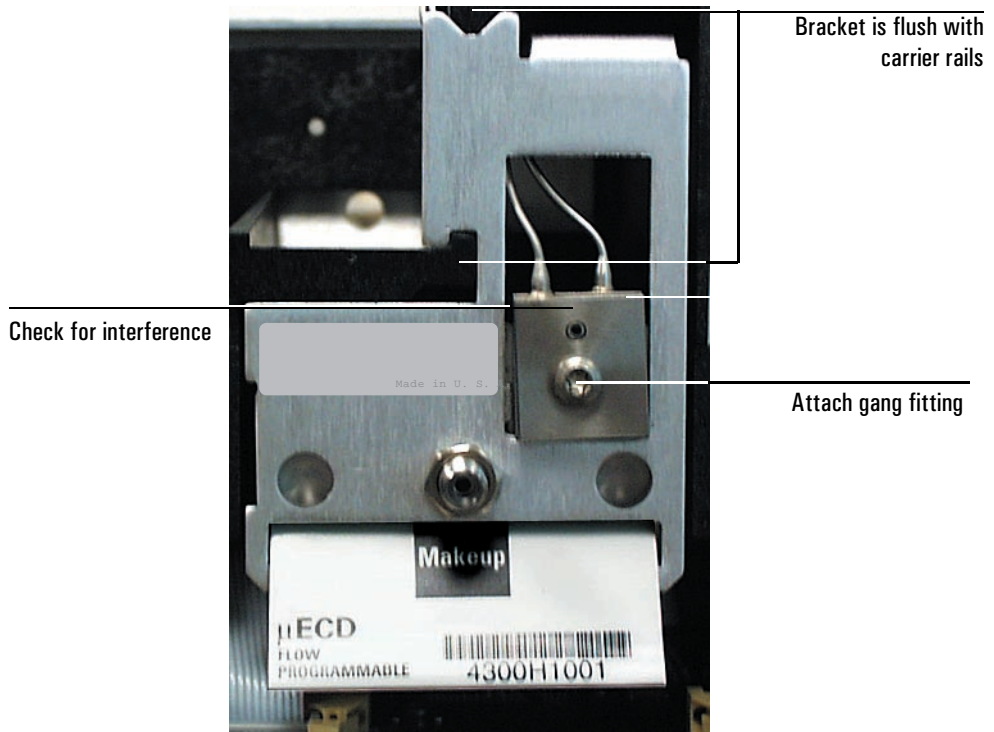


Figure 8 Manifold, after installation

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. Arrange the cable to keep it away from the valves and keep it from being pinched between board components and the manifold.

For the back detector, you may want to loosen the manifold and slide it out of the carrier a few centimeters to connect the cable to the pneumatics board. Then, reinstall the manifold.

8. Secure the manifold in place using the Torx T-20 screw. See Figure 4.

- Using a pair of needle-nosed pliers, remove the appropriate top rear panel detector cutout for the μ ECD. Also remove any cutouts needed to access other manifolds or accessories installed in the GC. See Figure 9.

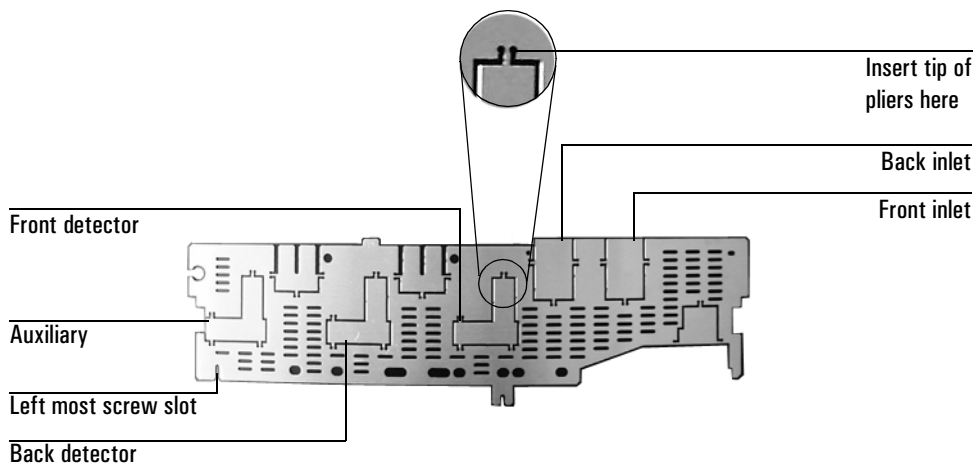


Figure 9 Top rear panel cutouts

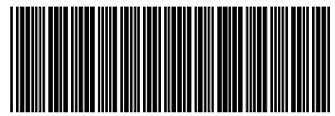
- Place the new top rear panel on its left-most mounting screw. Working from left to right and using the screw as a hinge, slide each manifold ID tag through its cutout in the panel. When all the tags are through the panel, finish installing the panel on the GC.
- Install the RFI shield, the pneumatics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

12. Connect the source gas line to the manifold. See Figure 10.



Figure 10 Gas line connection

13. Restore gas pressures and leak test the fittings.



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