Installing a Gas Sampling Valve on the 6850 Gas Chromatograph

Table 1. Kit Contents

Kit G2655-64000	Qty.
Gas sampling valve, 6-port, with 0.25 µL loop, and valve box	1
Lid top cover, valve box version	1
Lid cam, valve box version	1
Three-way valve assembly	1
Three-way valve cover plate	1
Three-way valve torque plate	1
Screw, M4 x 0.7, 12 mm length, pan head	9*
Screw, M4 x 12, T-20 Torx	8*
Installation sheet (this document)	1

* Extra screws provided.

The gas sampling valve is a factory-assembled and leak-tested unit. Installation does not require any disassembly of the unit, except if the loop is to be changed. See the *6850 Gas Chromatograph User Information* CD-ROM.

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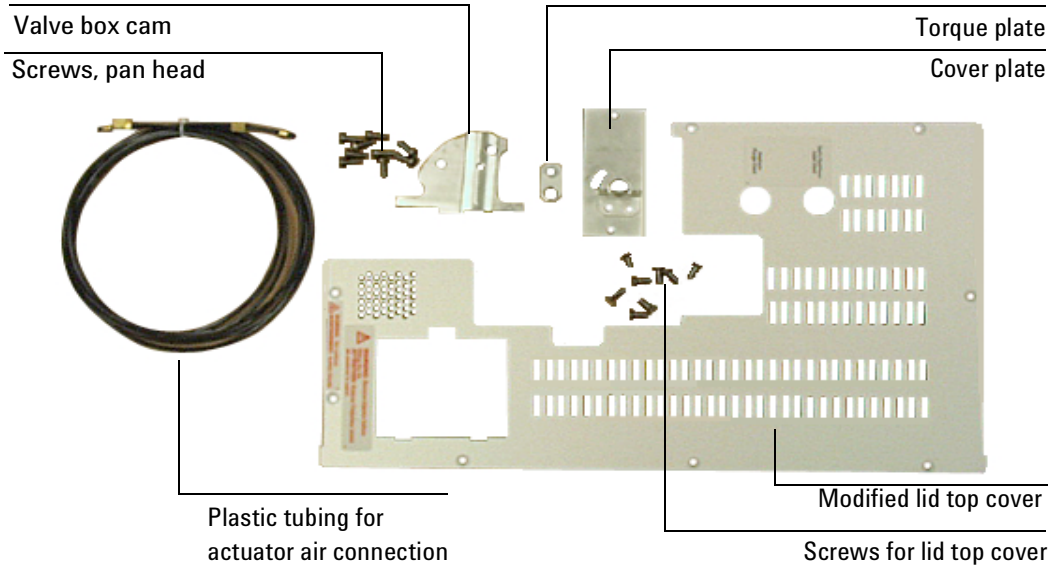
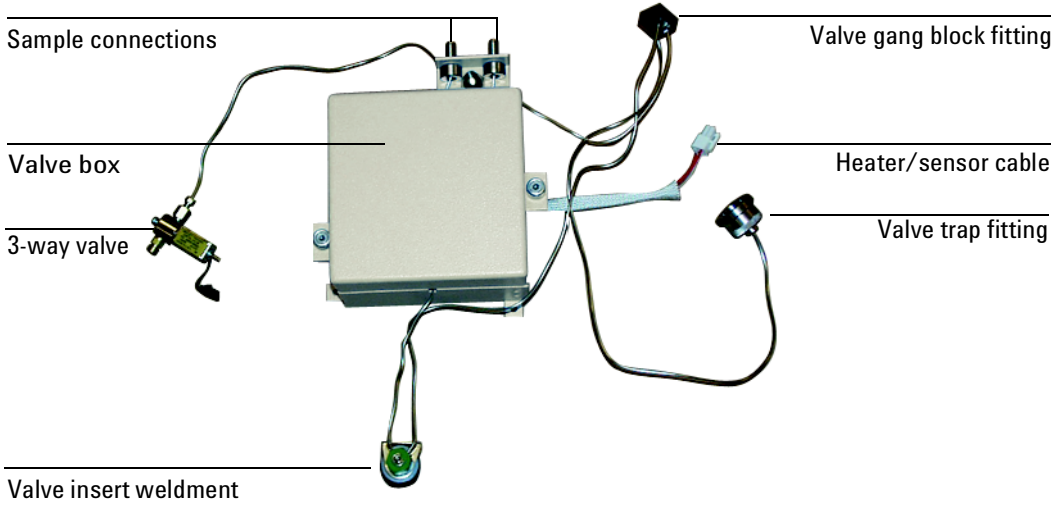

Valve box cam
Screws, pan head
Torque plate
Cover plate
Plastic tubing for
actuator air connection
Modified lid top cover
Screws for lid top cover


Sample connections
Valve box
3-way valve
Valve insert weldment
Valve gang block fitting
Heater/sensor cable
Valve trap fitting

Tools required

Torx™ T-10 driver

Torx™ T-20 driver

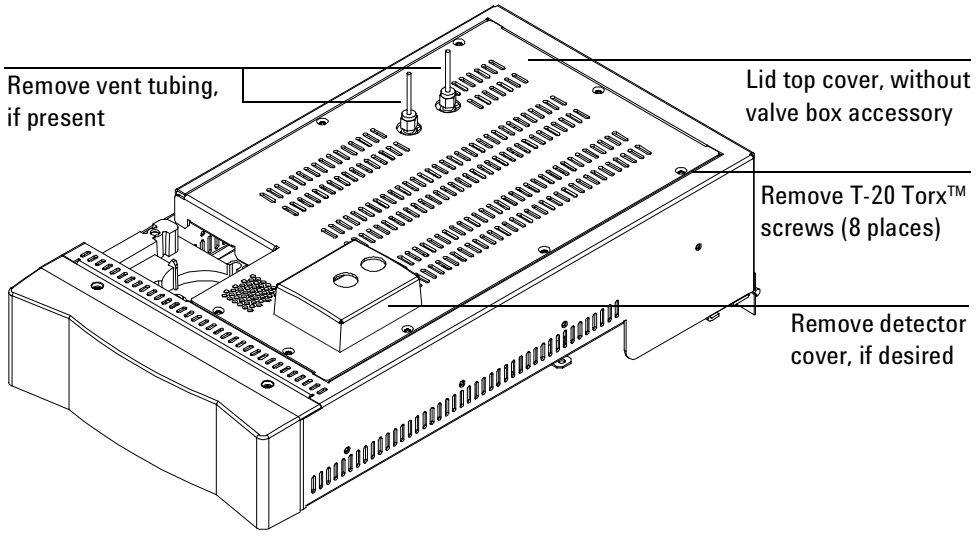
Inlet wrench

Safety information

Before continuing, read the safety information on your *6850 Gas Chromatograph User Information* CD-ROM.

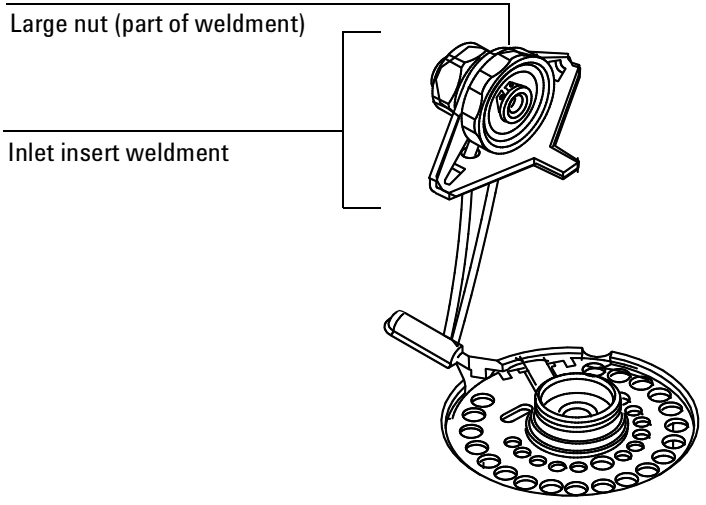
WARNING Before proceeding, turn off the oven and any heated zones and let them cool down. Turn off all gases at their source, then turn off the main power switch and unplug the power cord.

Remove the lid top cover



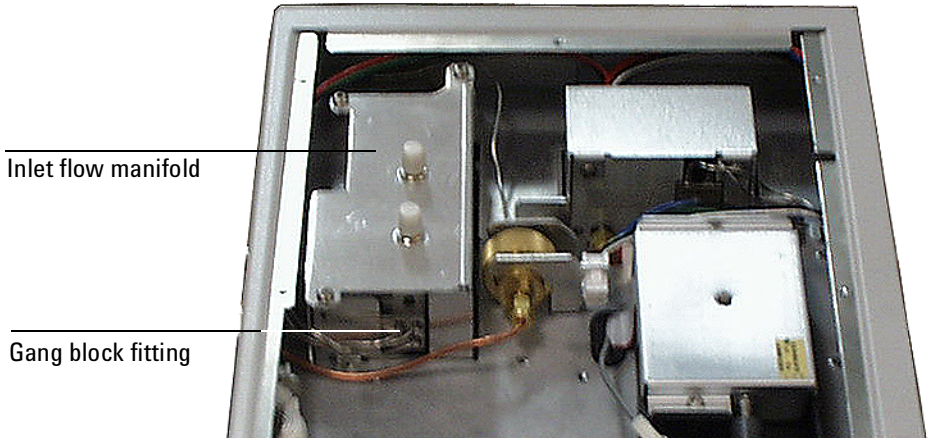
Remove the inlet insert assembly

1. Use the inlet wrench to release the large nut, which is part of the inlet insert weldment.

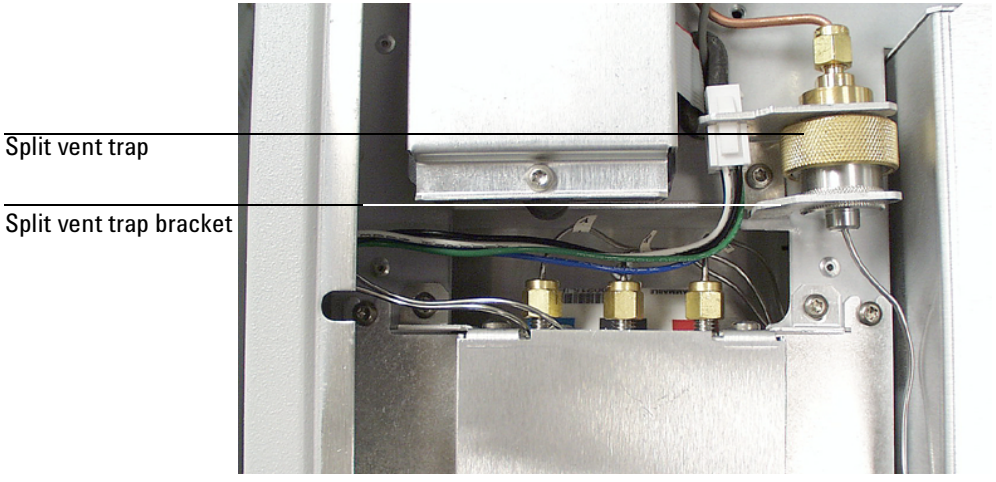


2. Lift the inlet insert weldment free of the inlet.

3. Use a T-10 Torx driver to remove the gang block fitting from the inlet flow module. Be very careful not to lose the small O-rings.



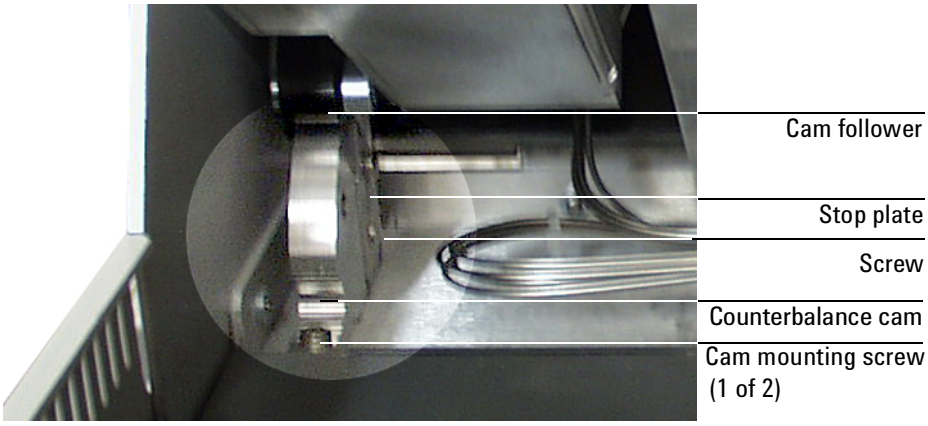
4. Remove the split vent trap bracket using a T-20 Torx driver.



5. Disassemble the split vent trap.
6. Remove the inlet insert weldment and attached parts from the instrument.

Raise the lid to the service position

1. With the lid open, locate the counterbalance cam in the left rear corner under the lid. Loosen the screw on the right side of the cam and lower the stop plate.



2. Raise the lid until it is stopped by the safety cable.
3. Raise the stop plate and tighten the screw to lock the lid in the upright service position.

WARNING The lid is heavy. Always lock the lid when it is in the service position.

Replace the lid counterbalance cam

The valve box adds significant weight to the lid. To properly balance the lid, the counterbalance cam must be changed.

1. Raise the lid to the upright service position. Locate the two cam mounting screws (one in front, one behind the cam).

WARNING Do not change the cam alone. Obtain help to hold the lid in the upright position while the cam is changed, since the lid will be unsupported while doing this.

2. Have an assistant hold the lid in the upright service position. Remove the two screws and the cam.

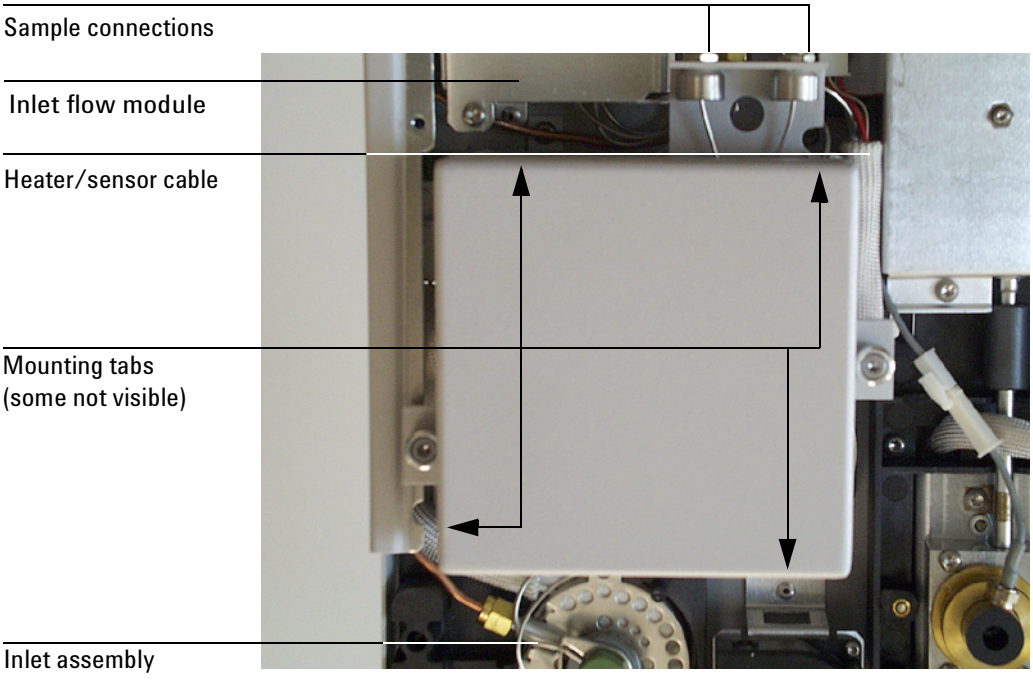
3. Remove the stop plate and screw from the cam. Install them on the valve box cam supplied in this kit. Note that the pointed end of the stop plate is up and the side with the recess for a screw head is visible when installed.
4. Install the new cam. Lower the stop plate. Pull the lid forward until the cam follower rests on the curved surface of the cam in front of the stop plate.
5. Raise the stop plate and tighten the screw. Close the lid.

Install the valve box

Caution As part of this step and those that follow, you must bend various sections of tubing. Make the bends gradual and avoid kinks.

1. Connect the valve gang block fitting to the inlet flow module. Be sure that the small O-rings are in place and that the hole patterns in the fitting and the flow module are aligned.
2. Place the valve box on the lid between the inlet assembly and the inlet flow module. The sample connections must point to the rear. Bend the heater/sensor cable to the rear as shown.

   Be sure that no tubing or wiring is trapped under the valve box.



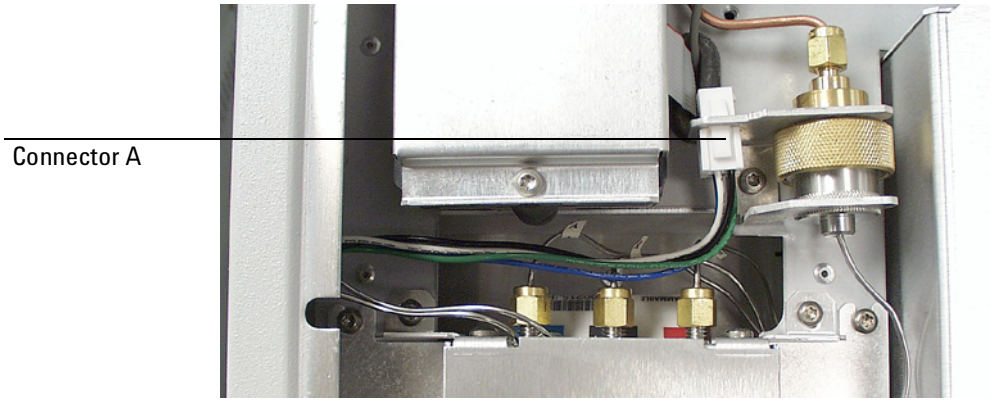
3. Attach the valve box tabs to the lid using four pan head screws.

Connect the valve insert weldment

Place the valve insert weldment on the inlet and tighten the large nut.

Connect the heater/sensor cable

1. Locate the connector marked **A** on the main wiring harness.
2. Connect the valve box heater/sensor cable as shown.

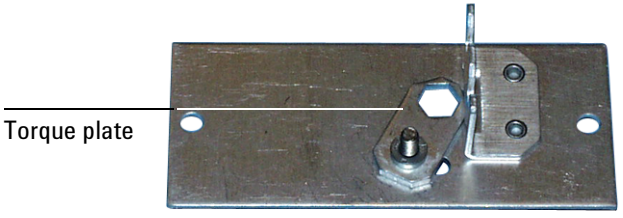


Connect the trap fitting

1. Reassemble the split vent trap using the valve trap fitting.
2. Secure the split vent trap bracket and the trap.

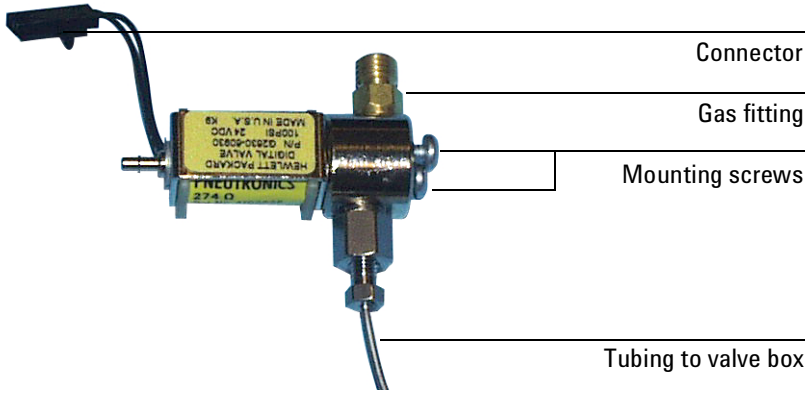
Install the 3-way valve

1. If present, remove the rectangular cover plate on the back of the lid.
2. Attach the torque plate to the inside of the Actuator Air cover plate with one screw. Do not tighten.



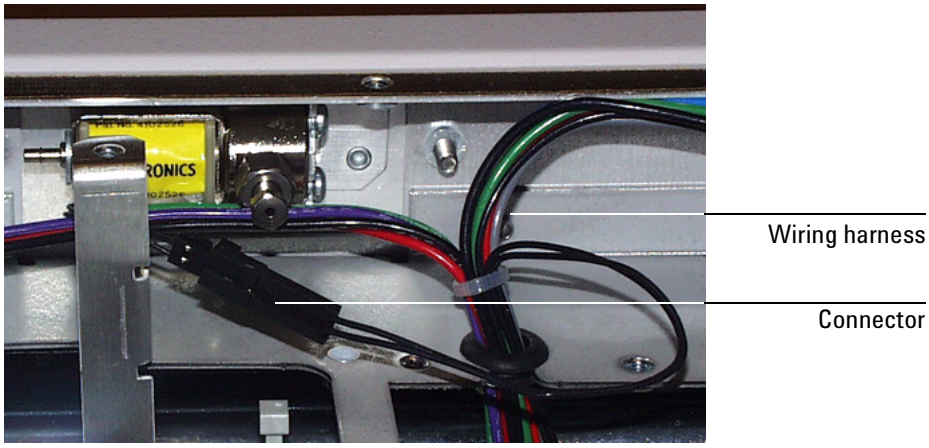
3. Mount the cover plate/torque plate assembly on the outside of the lid with two screws.

4. Loosen the two screws on the base of the 3-way valve.



5. Slide the valve onto the bracket on the inside of the cover plate. Move the valve and torque plate as needed to pass the gas fitting through the opening in the torque plate. Tighten the valve base screws and the torque plate screw.

6. Connect the cable from the 3-way valve to the wiring harness as shown.



Note: Tubing to valve box has been removed for clarity.

Install the modified lid top cover

1. Place the modified lid top cover supplied in this kit on top of the lid.
2. Secure with eight screws.

Connect the actuator air

Valves are gas-driven, usually by compressed air. There is no high purity requirement for this gas. Since the supply pressure may experience surges as the valve operates, the actuator gas must come from a different source than FID Air.

1. Connect the air source to the fitting on the back of the lid (the 3-way valve).
2. Set the source delivery pressure at 310 to 345 kPa (45 to 50 psi).

Agilent Technologies, Inc.
2850 Centerville Road
Wilmington, DE 19808-1610
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