



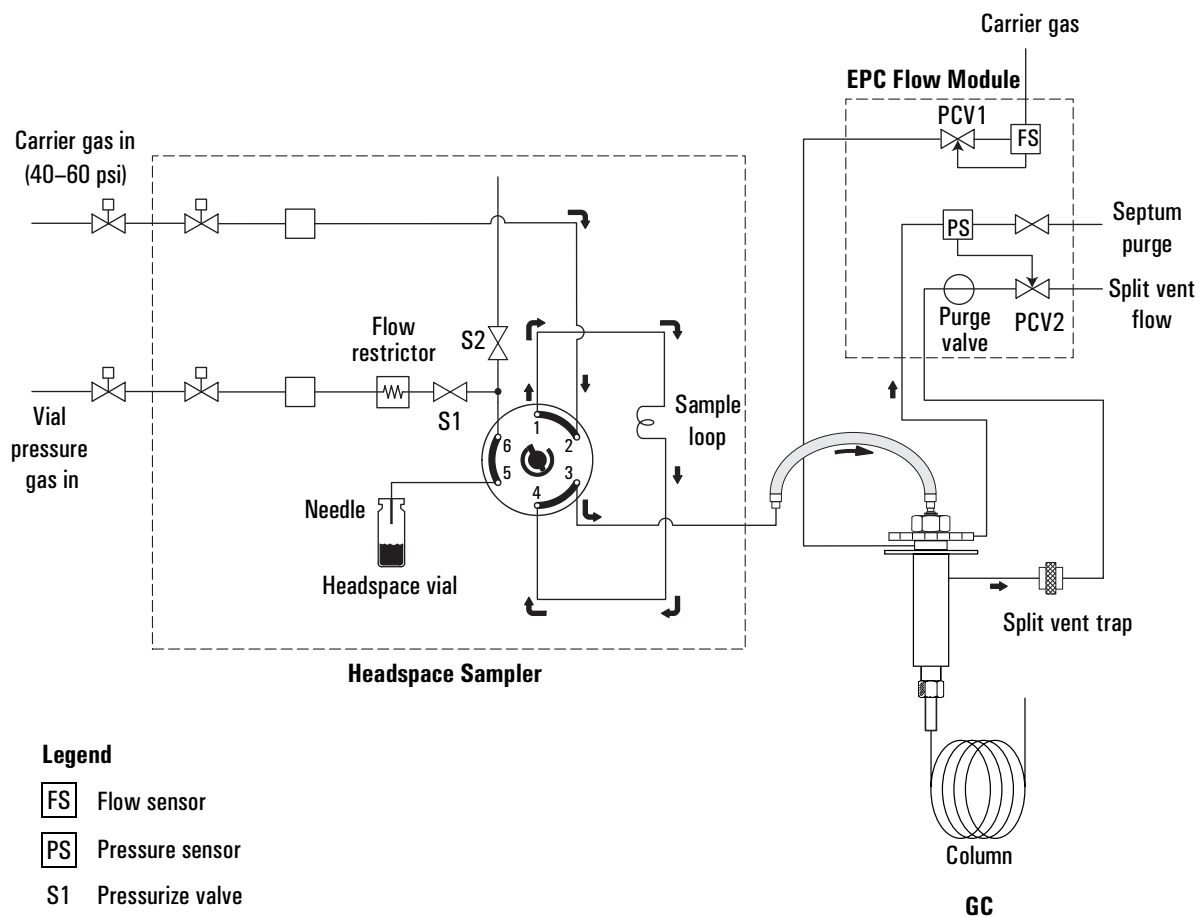
Agilent Technologies

Leak Check Procedure

G1290/G1883 Headspace

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The information contained herein is intended for use by informed individuals who can and must determine its fitness for their purpose.

Leak Testing:



Flow paths before GC prep-run

Flow paths for a G1290/G1883 to GC installation

In general, if there is a leak, check the following locations:

- Zero dead volume (ZDV) unions
- Auxiliary bleed fitting

Leak Testing a G1290/G1883 to GC Interface

For the G1290/G1883, you can check the carrier gas flow system for leaks by performing a pressure decay test.

WARNING

The heated zones of the unit can burn your skin. Allow the zones to cool off before performing the test.

Prepare the Sampler

1. Set the three heated zones to ambient temperature.
2. Detach the transfer line from the inlet or interface and plug it with either a new inlet septum or a leak test fitting as shown in Figure 29.

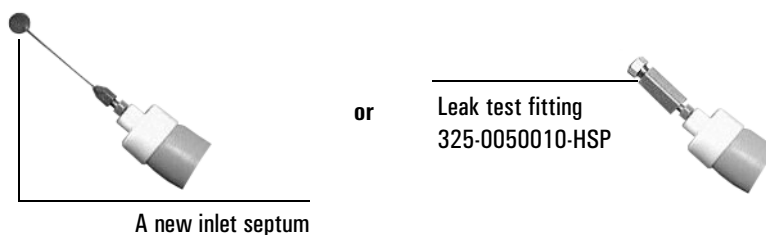


Figure 29. Plug the transfer line

3. Remove the pneumatics cover and loop oven cover to give you access to all of the tubing, valve, and manifold connections.

Carrier Gas Flow Path

1. Open the Mass flow controller full counter-clockwise (CCW) until the carrier flow path pressurizes to line pressure. The carrier pressure should read between 40 to 60 psi, about 4 bar.
2. Shut off the ball valve installed between the source and the headspace sampler. An alternative would be to turn the Mass Flow Controller full clockwise (CW).

WARNING

Turning the valve may not completely shut off flow, depending on the setting of the knob on the stem. Also excessive pressure on the stem can damage the flow controller if the knob is set to allow full travel.

3. Using MANUAL OPERATION, switch the sample valve to **0** or OFF.
4. Monitor the pressure on the front panel display—it should equilibrate at some pressure close to the line pressure and then hold. It should drop less than 2 psi in 5 minutes. If the pressure drop is much greater, there is a leak.
5. Using MANUAL OPERATION, switch the sample valve to 1 or ON to include the sample loop.
6. Repeat steps 2–5.
7. After the test, remove the septum or plug. The flow path should instantaneously de-pressurize. If it does not, there may be a restriction.
8. Using MANUAL OPERATION, switch the sample valve to 0 or OFF to reset the sample loop.

Vial Pressurization Flowpath

1. Prepare a new, empty 20 ml headspace vial. Make sure that it is capped properly.
2. Manually install the headspace vial in the oven slot under the headspace probe.
3. Using MANUAL OPERATION, load the vial onto the probe and make sure the Pressurize Valve is “ON” and the Vent Valve is “OFF”.
4. Pressurize the vial to 20 psi by adjusting the pressurize regulator.
5. Wait at least 1 minute to allow the system to equilibrate, then shut off the pressurize regulator (full CCW).
6. Monitor the pressure on the front panel display. It should equilibrate at some pressure lower than 20 psi and then hold, dropping less than 5 psi in 10 minutes. If the pressure drop is much greater, there is a leak.
7. Using MANUAL OPERATION switch the sample valve and repeat steps 2–6.

8. De-pressurize the system by opening the vent valve from MANUAL OPERATION.

Flow Testing the Vent Valve and Associated Flow Path

Perform this test only after the system (all models) passes the carrier and pressurize vial tests.

1. Prepare a new, empty 20 ml headspace vial. Make sure that it is capped properly.
2. Manually install the headspace vial under the probe in the headspace oven.
3. Set the Vial Pressure to 20 psi.
4. Place the vent exit tube from back of headspace in a beaker of water.
 - If needed, extend the tube using 1/8-inch PTFE or similar tubing.
5. Using MANUAL OPERATION, load the vial onto the probe, set the vent valve to “OFF” and set the pressurize valve to “ON.” (See “*MANUAL OPERATION*” on page 48 for details.)
6. Wait **at least** 20 seconds for the vial to pressurize.
7. Using MANUAL OPERATION, turn Pressurize Valve “OFF” and set the vent valve to “ON.”
8. Observe the vent tube in the water. The vent tube should produce bubbles immediately when the vent is turned “ON” and the bubbling should stop within 10–15 seconds. If the bubbling lasts much longer, the vent valve or associated flowpath may be restricted. Contact Agilent service.

Note that if the vent flow path is restricted, you may be overpressurizing your sample vials. When the problem is fixed, your sensitivity may appear to decrease because you are now injecting the appropriate amount of sample for your method.