Agilent
Inlet EPC Leak Test

Gas Chromatographs

Instructions

Agilent Technologies

Notices

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Inlet EPC Leak Test Instructions

Leak Test Kit G1545-60501

Kit G1545-60501 includes the following materials:

- G1545-90100 Inlet EPC Leak Test Instructions
- G1530-80510 Inlet EPC Leak Test Fixture
- 0905-1493 Replacement O-rings, 12-pk

While this kit is provided to attain accurate leak tests for Cool On-Column inlets, the test fixture may prove to be useful for checking other EPC inlets as well.

In order to turn the 3–Way Valve to the OFF position, turn handle 180 degrees counterclockwise until it turns no more. Handle will be pointed towards GC (not pictured) - step 6 (COC, PP) or step 8 (S/SL).

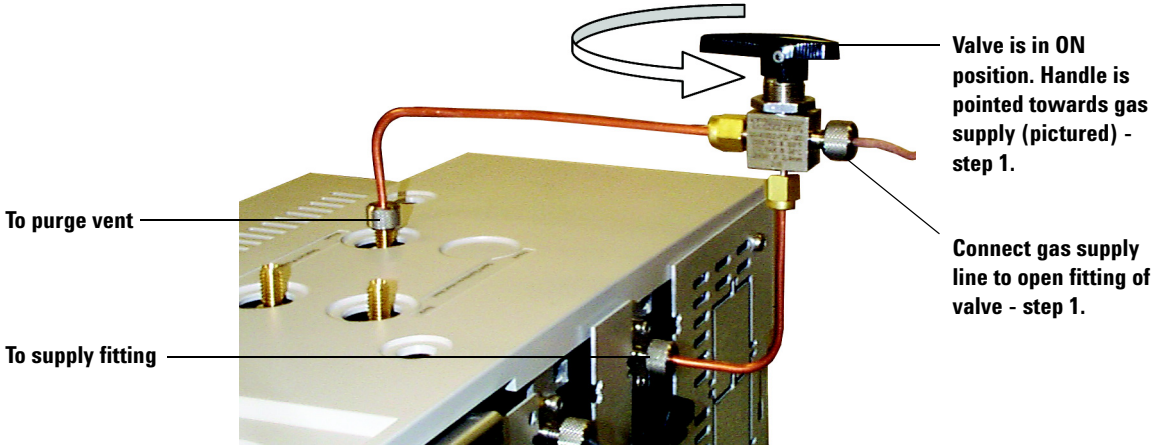

Figure 1 Inlet EPC Leak Test Fixture attached to a COC inlet

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Cool On-Column inlets

Be sure that the preparation steps found in the current 6890 manual for Cool On-Column inlets are complete before proceeding with these steps, with the exception of the installation of the septum purge vent cap. This will be replaced by the Inlet EPC Leak Test Fixture provided.

1. Install the Inlet EPC 3-Way Valve Leak Test Fixture, G1530-80510, as shown in Figure 1. Be sure O-rings are in good condition and that brass knurled fittings are adequately finger tightened. Turn the 3-Way Valve to the “ON” position as pictured in Figure 1.
   - The handle on the valve is pointed towards the gas supply when turned “ON” (pictured).
   - The handle on the valve is pointed towards the GC when it is turned “OFF” (not pictured).
2. Make sure a length and a diameter for a capillary column are entered on the 6890 keypad. To set these values, press [Config], and scroll to Column 1 or Column 2, depending on inlet position. Recommended settings are column length 30 m and column diameter 320 µm.
3. Set inlet pressure to 25 psi on the 6890 keypad.
4. Allow about 15 seconds for pressure equilibration.

   If pressure cannot be achieved, check the following:
   - Is the carrier gas source pressure at least 35 psi, connected to the proper inlet (front or back) and turned on?
   - Is the 3-Way Valve in the correct position with the handle pointed towards the gas supply?
   - Is the COC inlet column nut properly plugged?
   - Are the test fixture brass fittings tightened and the O-rings under them in good condition?

   If these conditions are all true, it is possible that there is a gross leak in the system that must be corrected prior to going to step 5.

5 Turn the inlet pressure OFF at the 6890 keypad.

6 Turn the 3-Way Valve OFF by turning the valve handle 180 degrees counterclockwise, so that the handle on the valve handle is pointed towards the GC.

7 Set the inlet pressure to 40 psi on the 6890 keypad. Allow about 15 seconds for the pressure to equilibrate. The pressure should drop from 25 psi to a pressure above 10 psi (usually between 17 and 24 psi).

8 Set the inlet pressure to 10 psi on the 6890 keypad.

9 Record the inlet pressure at this time and monitor the pressure for 10 minutes on the 6890 display.

   You can use the stopwatch feature of the 6890 GC to monitor the time. Press [Time] and then [Enter] to start timing, then toggle between the time and the pressure reading with the [Time] and the [Front Inlet]/[Back Inlet] keys.

   - If there is less than 1.0 psi pressure loss in 10 minutes, consider the system leak tight.
   - If the pressure loss is greater than 1.0 psi in 10 minutes, there is a leak that must be found and corrected. See Correcting Leaks for Cool-On Column inlets in the 6890 Service Manual for help.

10 When the system is considered leak tight, set the inlet pressure to zero, disconnect the 3-Way Valve from the system, and re-connect the gas supply line to the inlet supply fitting. Now you may reinstall the column, restore the column dimension configuration at the keyboard, and set the desired inlet pressure.

Split/Splitless inlets

Be sure that the preparation steps found in the current 6890 manual for Split/Splitless inlets are complete before proceeding with these steps, with the exception of the installation of the septum purge vent cap. This will be replaced by the Inlet EPC Leak Test Fixture provided.

1. Install the Inlet EPC 3-Way Valve Leak Test Fixture, G1530-80510, as shown in Figure 1. Be sure the O-rings are in good condition and that brass knurled fittings are adequately finger tightened. Turn the 3-Way Valve to the "ON" position as pictured in Figure 1.
2. Set the Column Length to zero and the Column Diameter to zero by pressing [Config] on the 6890 keypad, and scroll to Column 1 or Column 2, depending on inlet position.
3. Set the inlet Mode to SPLITLESS on the 6890 keypad.
4. Set the inlet pressure to 25 psi on the 6890 keypad, set the inlet total inlet flow to 60 mL/min.
5. Allow about 15 seconds for pressure equilibration.

   If pressure cannot be achieved, check the following:

   - Is the carrier gas source pressure at least 35 psi, connected to the proper inlet (front or back) and turned on?
   - Is the 3-Way Valve in the correct position with the handle pointed towards the gas supply?
   - Is the Split/Splitless inlet column nut properly plugged?
   - Are the Test Fixture brass fittings tightened and the O-rings under them in good condition?

   If these conditions are all true, it is possible that there is a gross leak in the system that must be corrected prior to going to step 6.
6. Confirm the inlet Mode is SPLITLESS on the 6890 keypad. Press [Prep Run] twice.
7. Turn the inlet pressure OFF at the 6890 keypad.

8 Turn the 3-Way Valve OFF by turning the valve handle 180 degrees counterclockwise, so that the handle on the valve handle is pointed towards the GC.

9 Set the inlet pressure to 40 psi on the 6890 keypad. Allow about 15 seconds for the pressure to equilibrate. The pressure should drop from 25 psi to a pressure above 10 psi (usually between 17 and 24 psi).

10 Now set the inlet pressure to 10 psi on the 6890 keypad.

11 Record the inlet pressure at this time and monitor the pressure for 10 minutes on the 6890 display.

You can use the stopwatch feature of the 6890 GC to monitor the time. Press [Time] and then [Enter] to start timing, then toggle between the time and the pressure reading with the [Time] and the [Front Inlet]/[Back Inlet] keys.

- If there is less than 0.5 psi pressure loss in 10 minutes, consider the system leak tight.
- If the pressure loss is greater than 0.5 psi in 10 minutes, there is a leak that must be found and corrected. See Correcting Leaks for Split/Splitless inlet in the 6890 Service Manual for help.

12 When the system is considered leak tight, set the inlet pressure to zero, disconnect the 3-Way Valve from the system, and re-connect the gas supply line to the inlet supply fitting. Remove the instrument from Prep-Run state by pressing the STOP key on the 6890 keypad. Now you may reinstall the column, restore the column dimension configuration at the keyboard, and set the desired inlet flow and pressure.

Purged/Packed inlets

Be sure that the preparation steps found in the current 6890 manual for Purged/Packed inlets are complete before proceeding with these steps, with the exception of the installation of the septum purge vent cap. This will be replaced by the Inlet EPC Leak Test Fixture provided.

1. Install the Inlet EPC 3-Way Valve Leak Test Fixture, G1530-80510, as shown in Figure 1. Be sure O-rings are in good condition and that brass knurled fittings are adequately finger tightened. Turn the 3-Way Valve to the “ON” position as pictured in Figure 1.
   - The handle on the valve is pointed towards the gas supply when turned “ON” (pictured).
   - The handle on the valve is pointed towards the GC when it is turned “OFF” (not pictured).
2. Make sure a length and a diameter for a capillary column are entered on the 6890 keypad. To set these values, press [Config], and scroll to Column 1 or Column 2, depending on inlet position. Recommended settings are column length 30 m and column diameter 320 µm.
3. Set inlet pressure to 25 psi on the 6890 keypad.
4. Allow about 15 seconds for pressure equilibration.

   If pressure cannot be achieved, check the following:
   - Is the carrier gas source pressure at least 35 psi, connected to the proper inlet (front or back) and turned on?
   - Is the 3-Way Valve in the correct position with the handle pointed towards the gas supply?
   - Is the Purged/Packed inlet column nut properly plugged?
   - Are the test fixture brass fittings tightened and the O-rings under them in good condition?

   If these conditions are all true, it is possible that there is a gross leak in the system that must be corrected prior to going to step 5.

5 Turn the inlet pressure OFF at the 6890 keypad.

6 Turn the 3-Way Valve OFF by turning the valve handle 180 degrees counterclockwise, so that the handle on the valve handle is pointed towards the GC.

7 Set the inlet pressure to 40 psi on the 6890 keypad. Allow about 15 seconds for the pressure to equilibrate. The pressure should drop from 25 psi to a pressure above 10 psi (usually between 17 and 24 psi).

8 Set the inlet pressure to 10 psi on the 6890 keypad.

9 Record the inlet pressure at this time and monitor the pressure for 10 minutes on the 6890 display.

   You can use the stopwatch feature of the 6890 GC to monitor the time. Press [Time] and then [Enter] to start timing, then toggle between the time and the pressure reading with the [Time] and the [Front Inlet]/[Back Inlet] keys.

   - If there is less than 1.0 psi pressure loss in 10 minutes, consider the system leak tight.
   - If the pressure loss is greater than 1.0 psi in 10 minutes, there is a leak that must be found and corrected. See Correcting Leaks for Purged/Packed inlets in the 6890 Service Manual for help.

10 When the system is considered leak tight, set the inlet pressure to zero, disconnect the 3-Way Valve from the system, and re-connect the gas supply line to the inlet supply fitting. Now you may reinstall the column, restore the column dimension configuration at the keyboard, and set the desired inlet pressure.

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