

This procedure shows how to detect and isolate a leak in the FLEX system by manually pressure checking the digestion, column, and round bottom flask areas. If a leak is found and the solutions offered in this procedure do not resolve the leak, contact ANKOM Technology for troubleshooting and support.

1. Make sure that all the necessary components are installed on the instrument:
 - Four Assembled Digestion Vessels. Ensure that the red caps are closed tightly.
 - Four SPE Columns
 - Four Round Bottom Flasks



2. Navigate to the command center on the HMI. Close Vessel Tops and Close Column Lock.



3. Check Digestion Vessel area

- 3.1 Close Vessel Vent.
- 3.2 Open all four Vessel Inlets.
- 3.3 Turn on Vessel N2.

Observe the vessel pressures, wait until they increase to at least 1.5 psi. If they do not increase in pressure, the digestion area has a leak. Refer to "If there is a leak" step below.



- 3.4 After the vessel pressures reach at least 1.5 psi, turn off Vessel N2 and close all Vessel Inlets.

Observe the vessel pressures to see if they are stable. If there is a drop in any of the pressures more than 0.05 psi within 10 seconds, the digestion area has a leak.



If there is a leak:

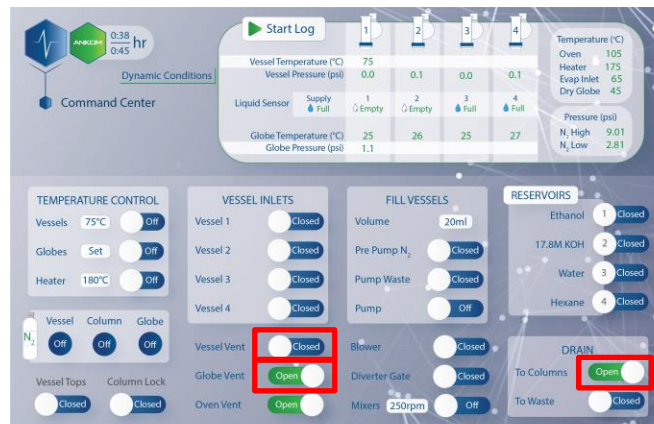
- a. Take apart the digestion vessels. Check for any cracks or chips in the glass of the digestion vessels. Next, check the conditions of the O-rings in the vessel bottom assemblies. Ensure that they have not fallen out of the groove, have any cuts, or are deformed.
- b. Re-assemble the digestion vessels, check the digestion vessel area again for leaks.
- c. If the leak persists, contact ANKOM Technology.

- 3.5 If the vessel pressures are stable, the digestion area is sealed properly. Open Vessel Vent to dissipate vessel pressure until it is close to zero.



4. Check Column and Round Bottom Flask Area

- 4.1 Open Drain to Column (Vessel Vent should close automatically).
- 4.2 Open the Globe Vent.



- 4.3 Remove the round bottom flask in position one.
- 4.4 Use a finger to plug the upper clear tube on the round bottom flask adapter (not the clear tube with the spray nozzle).



- 4.5 Open Vessel Inlet 1.
- 4.6 Turn on Vessel N2.

Observe the vessel pressure in position one while continuing to plug the upper clear tube on the adapter. Wait until it increases to at least 1.5 psi. If the pressure does not increase in position once, then that position has a leak in the column or round bottom flask area.



4.7 After the vessel pressure reaches at least 1.5 psi, continue plugging the upper clear tube, turn off the Vessel N2 and close Vessel Inlet one.

Observe the vessel pressure in position one to see if it is stable. If there is a drop in pressure more than 0.05 psi within 10 seconds, then position one has a leak in the column or round bottom flask area.



If there is a leak:

- a. Open the Column Lock.
- b. Remove the column in position one and check the top and bottom of the column for any cracks or chips.
- c. Wipe the inside top of the column and the column top O-ring with a moist paper towel to remove any dust that may be preventing a tight seal.
- d. Hand-tighten the bottom column adapter, turn clockwise (beige fitting).
- e. Close the Column Lock.



Repeat the steps above in position one to test if the leak is fixed, if the pressure is still too low or unstable, contact ANKOM Technology.

4.8 Repeat the steps above with position 2, 3, and 4, opening the corresponding Vessel Inlets.