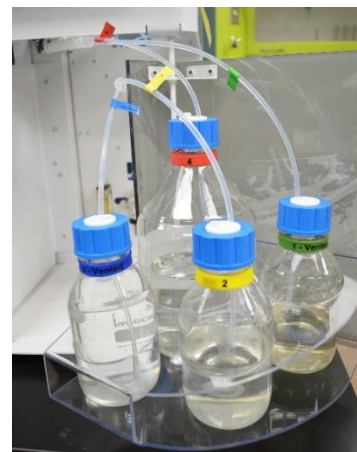


15. QC and Calibrations

15.1 Solution Delivery Calibration

The purpose of the solution delivery calibration is to confirm that the instrument pump is delivering the correct amount of solution. This calibration should be done when a new chemical is added, or if the user would like to confirm that solution delivery is accurate. Wear gloves and safety glasses when running this calibration.

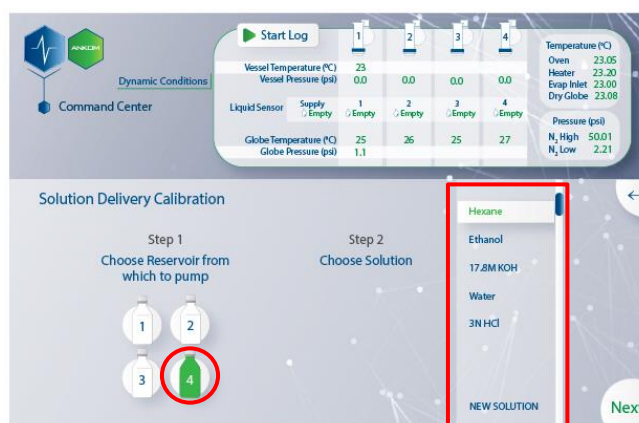
- 15.1.1. Fill each solution reservoir with the appropriate reagents, at least half full, then close reservoir caps. Refer to Appendix A - Reagents. Be sure to use the correct reservoir position for each solution as certain solutions must be unvented (2 and 4). For further details on how to fill the reservoir bottles, refer to FLEX Service Procedure FLS005 on the website.



- 15.1.2. From the Home Screen, press "DIAGNOSTICS."

- 15.1.3. Select "SOLUTION DELIVERY CALIBRATION."
The following screen will be displayed. Follow the instructions on the screen.

- 15.1.4. If calibrating for one new chemical, follow the calibration steps for that specific reservoir only. If calibrating all four reservoirs, follow the specific sequence listed below.



Total Fat Sequence:

1. Reservoir 2 – 3N HCl
2. Reservoir 1 – EtOH
3. Reservoir 3 – H₂O
4. Reservoir 4 – Hexane

Vitamin/Cholesterol Sequence:

1. Reservoir 1 – EtOH
2. Reservoir 2 – KOH
3. Reservoir 3 – H₂O
4. Reservoir 4 – Hexane
5. Reservoir 3 – H₂O (Run this solution again to clear lines of KOH)

- 15.1.5. A list of solutions is provided on the right side of the screen. The user will choose the solution that is in the selected reservoir and then press "Next."

NOTE: The user can add a new solution by pressing "NEW SOLUTION". The user must enter an accurate boiling point. This is used to ensure safe operating conditions. **The instrument cannot run Diethyl Ether or Acetone.**

15.1.6. Insert the Vessel Bottom Plug (#FLEX72) into the Digestion Vessel Bottom. Press the plug in until it is tight and secure. This will ensure that the cap will not drain fluids.



15.1.7. Install Digestion Vessels into the Digestion Vessel Guide, ensuring that the pour spout is facing towards the user. **Note: The red Digestion Vessel Port Caps are not needed for this procedure.**



Digestion Vessel Guide

15.1.8.

SAFETY ALERT: Do not press "Start Test" until the oven door is closed.

Close the digestion oven door, and then press "Start Test." The lines will be primed, and solutions delivered. The test will pump the target volume to each cup sequentially.



Two different faults may occur during the solution delivery calibration:

Empty Supply Line

This fault is most often caused by an empty reservoir. The user must refill the reservoir and press continue.

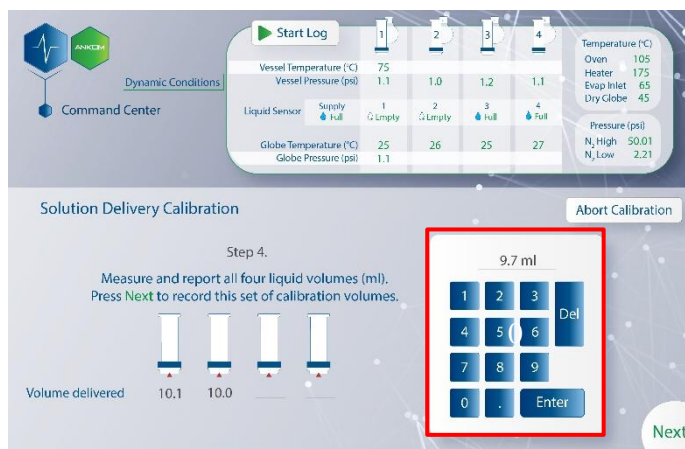
If the message continues to be displayed, it may be caused by a restriction in the line or a leak in the system. Contact ANKOM Technology for assistance.



Full Supply Line

This message can occur if the delivery lines are not cleared properly at the end of the solution delivery calibration. Possible causes include left over liquid in the line, full waste container, or mechanical failure. Contact ANKOM Technology.

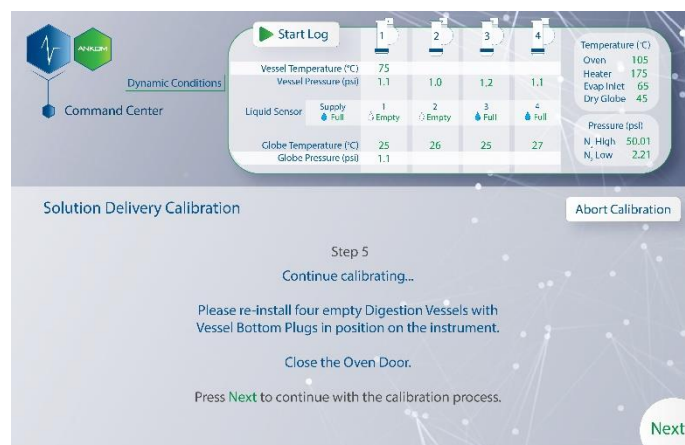
- 15.1.9. Open the digestion oven door and remove the digestion vessels. Using a graduated cylinder, measure and enter the volumes delivered in each Digestion Vessel to the nearest tenth of a ml (one decimal), on the HMI screen. Once the volumes have been recorded, press "Next."



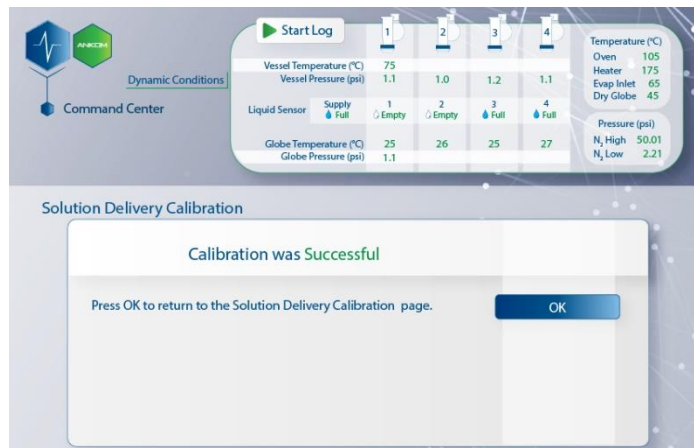
- 15.1.10. The following screen will be displayed when one calibration series has been completed, but calibration accuracy has not yet been reached.

Continue with the calibration procedure by following the steps on the screen. **The calibration process must be repeated until the delivery volume is within an acceptable accuracy range and the calibration test has passed.**

The system will try multiple times to achieve desired accuracy but will fault if the system reaches the allowed number of calibration attempts.



15.1.11. This screen will be displayed when the calibration is successful. The pump configuration settings for that solution are automatically updated and will be used during analytical analysis. Press "OK".



15.1.12. Remove the Vessel Bottom Plug (#FLEX72) from the Vessel Bottom Assembly and dispose of the plug. Vessel Bottom Plugs are intended for single use.

