ali-Q 2 In-lab Calibration Protocol

The ali-Q 2 series pipet controllers include calibration software which allows users to perform in-lab calibration adjustments as needed.

Perform Initial Performance Verification:
In order to calibrate the ali-Q 2, gravimetric measurements from the unit will first need to be obtained. Follow the instructions for a Performance Verification below to determine the initial/current % error at 0.5 and 5.0 mL and record the 2 numbers to use in the following calibration procedure.

Worksheet

Determine the current accuracy of your ali-Q 2 by taking the average of 4 gravimetric measurements at 0.5 mL and 5.0 mL (or 0.3 and 3.0 mL for the ali-Q 2 LS).

NOTE: We recommend using speed 7 for taking measurements with the ali-Q 2 VS.

Use this table to record the values. Then calculate the avg. at each volume.

_____ Measurements (grams) _____

	1	2	3	4	avg.	% error	high or low
0.5 mL							
5.0 mL							

Then calculate the % error

at 0.5 mL: $\dfrac{(\text{avg.} - 0.5)}{0.5} \times 100$

at 5.0 mL: $\dfrac{(\text{avg.} - 5.0)}{5.0} \times 100$

Use the % error numbers for Steps 2 and 3 on the next page.

Calibration Mode:

In Calibration Mode, the user enters the % errors calculated in the initial Verification Procedure. Once these values are entered, the unit will calibrate automatically.

NOTE: The upper LED indicates the current calibration status. Solid blue indicates factory calibration, while solid white indicates user calibration values have been stored.

Step 1 - Enter Calibration Mode

1 Set the volume dial to BELOW 0.0 mL.
2 Hold the ali-Q 2 upside down.
3 Press and hold the aliquot button for 5 seconds. Three tones will sound to indicate entry into calibration mode and the lower LED will be **quickly** blinking **blue**.
4 Release the button and return the unit to upright orientation.
5 Watch for the lower LED to blink blue before proceeding.

NOTE: Calibration mode can be exited, without saving changes, during step 2 or step 3 by quickly pressing and releasing the aliquot button. This will be followed by 5 red LED flashes to confirm exit.

Step 2 - Enter the % error at 0.5 mL

After entering calibration mode, the lower LED will be **quickly** blinking **blue**. This indicates that the unit is ready to accept the calculated error at 0.5 mL.

1 Enter the 0.5 mL % error value, from the previously performed Verification Procedure by setting it on the volume dial. ***For example, if the mean error is 1.5%, set the volume dial to 1.5.***
2 If the ali-Q 2 is dispensing too high (+1.5% error), press the **Aspirate** button to save the changes. If the ali-Q 2 is dispensing too low (-1.5% error), press the **Dispense** button to save the changes. The 2 LEDs will alternate **blue** 5 times, accompanied by a tone, to confirm entry.
3 Wait until the **lower LED** is blinking **blue** before proceeding.

Step 3 - Enter the % error at 5 mL

The lower LED will now be **slowly** blinking **blue**, indicating that the unit is ready to accept the calculated error at 5 mL. Repeat the process outlined in Step 2 with the previously obtained 5 mL % error value. The 2 LEDs will alternate **blue** 5 times, accompanied by a tone, to confirm entry.

(Note: If the LEDs blink YELLOW, the calibration values are out of bounds (+/-10%) and the values will not be stored. Call our Technical Application Specialist at 914-244-4068 for assistance.)

If the LEDs blink GREEN, the unit has been successfully calibrated. The unit will now return to normal operation.

A post-calibration Verification should always be performed to confirm the changes were successful and the ali-Q 2 accuracy should now be within spec.

Reset to Factory Calibration:

The ali-Q 2 has been calibrated from the factory to ± %2 at 0.5 mL and 5 mL. The user can easily revert to the factory calibration at any time. To reset the unit:

1 Enter calibration mode using Step 1 in the Calibration Mode section.
2 Turn the ali-Q 2 upright.
3 Press and hold the aliquoting button for about 5 seconds, until the LEDs begin to blink **green**.
4 Release the button. The LED will blink **green** 5 times to confirm the factory reset has been applied.